IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

WILLIAM WHITFORD, et al.,

Plaintiffs,

v. Case No. 15-CV-421-bbc

GERALD NICHOL, et al.,

Defendants.

DECLARATION OF SEAN P. TRENDE

Sean Patrick Trende, under penalty of perjury, makes the following declaration:

1. I am over 18 years of age and am competent to testify regarding the matters discussed in this declaration.

2. I have been retained in this matter to provide expert testimony. I am compensated at a rate of $300 per hour, excluding travel time.

3. My *curriculum vitae* is attached to this declaration as **Exhibit 1.**

4. A list of materials upon which I relied in the preparation of this declaration are attached as **Exhibit 2.**

INTRODUCTION

5. Plaintiffs in this case attempt to solve the decades-old problem of identifying partisan gerrymanders that are severe enough to violate the federal constitution by introducing a novel measure of partisan gerrymandering, based upon the concept of "wasted votes." The basis for this theory is that a party gerrymanders when members of the opposing party are "packed" into single districts. This allows the gerrymandering party to spread their remaining members over a large number of districts, creating just enough partisan density to win. Because members of the opposing party are packed into districts far in excess of what is needed to win those districts, this should manifest in the opposing party having a disproportionate number of "wasted votes," that is, votes in excess of what are needed to win in given districts.

6. I have a tremendous amount of respect for Dr. Jackman's work (I'm not personally familiar with Dr. Mayer), as well as Dr. McGhee, upon whose work the reports here are based. Nevertheless, there are multiple problems with utilizing this approach to identify unconstitutional partisan gerrymanders.

7. First, plaintiffs' experts do not provide a single measurement for the efficiency gap ("EG") for courts to use. Their methods are based upon the same approach, but utilize differing assumptions without providing a basis for the Court to choose among those assumptions. Their two equations lead to different results, which are large enough that they could represent the difference between a plan inviting Court scrutiny and a plan being presumed constitutional.

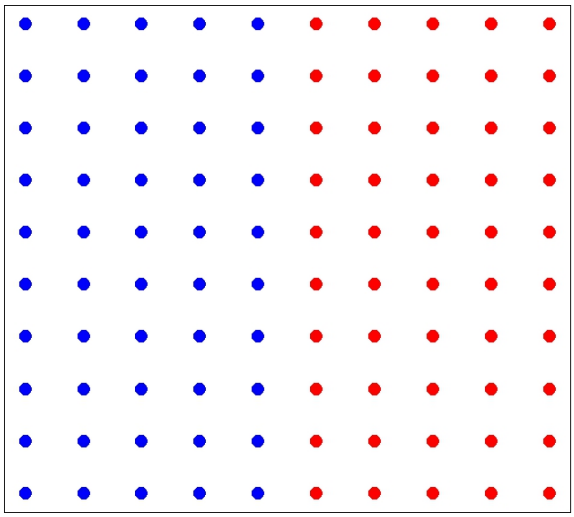
8. Second, the metric fails to account for the "natural" packing that can occur if party members are disproportionately clustered in certain types of areas, or if a law such as the Voting Rights Act forces packing of partisans of one party, but not of the other. This is important because if efficiency gaps are not accounting for "natural" clustering, then at least some of the asymmetry they are remedying is not a result of state action. If significant geographic clustering occurs, and is not accounted for, then the EG is really acting as a sort of "make up call" for natural effects and for the effects of the Voting Rights Act. This is true even if a mapmaker can draw a map with a smaller efficiency gap.

9. To better understand the issue of geographic clustering, and why it is so crucial to understanding the limitations of the wasted votes metric, consider the following examples.

10. The following maps depict a hypothetical state "X." It has 100 individual voters, who live conveniently on a ten-by-ten grid. Voters who always vote for the Republican candidate are color coded red, while voters color who always vote for the Democratic candidate are color coded blue. The state has four legislative districts.

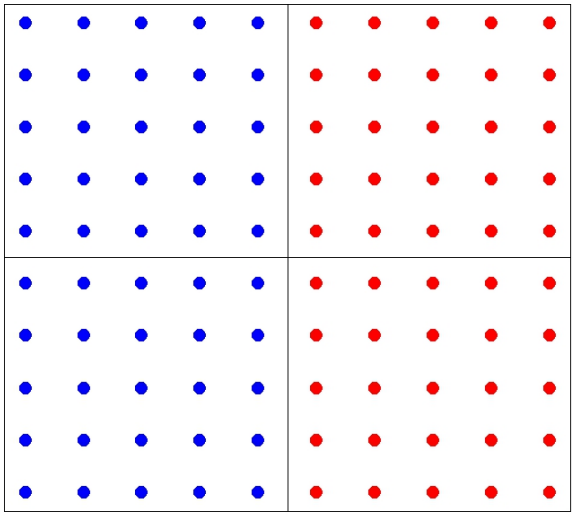
11. We start with an example where the voters are proportionally clustered, with Republicans living in the eastern half of the state and Democrats living in the western half:

State 'X' With Evenly Dispersed Partisans



12. We can further imagine a scenario where mapmakers attempt to draw compact districts under neutral principles, and so simply divide the state into evenly matched quadrants:

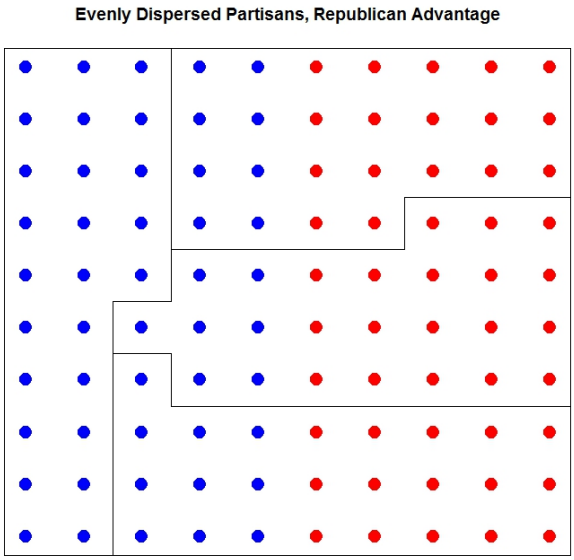
State 'X' With Evenly Dispersed Partisans



13. In this scenario, the parties are evenly matched, and the EG is zero.

14. Note that a similar effect would occur if there were zero clustering, and every red voter lived "next door" only to blue voters. In fact, it would be very difficult to draw districts that were not evenly matched under that scenario.

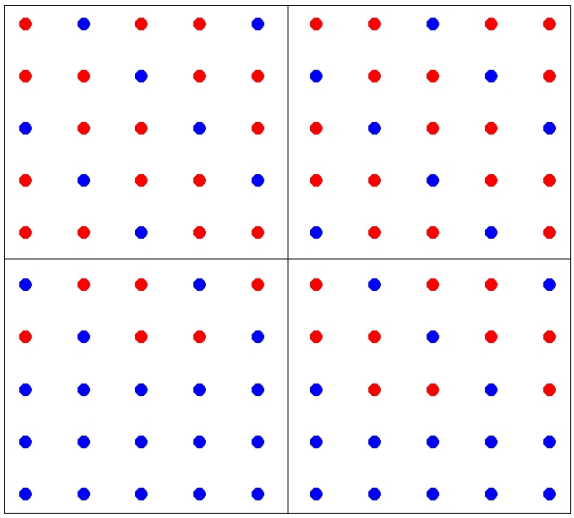
15. Of course, it is still possible to draw maps to partisan advantage in this scenario. For example, the following lines would result in one district that would have 25 Democratic voters and zero Republicans, one that would have 8 Democrats and 17 Republicans, one that would have 7 Democrats and 18 Republicans, and one that would have 10 Democrats and 15 Republicans. Under this, the EG is equal to -.25, inviting court scrutiny under plaintiffs' standard.



16. At the same time, if you flipped the lines around a vertical line in the middle of the state, creating a mirror image of the above map, you would have a map with an identical Democratic advantage. In other words, in this scenario the Republicans and Democrats have equal abilities to draw lines to their advantage.

17. If this were how partisans were actually dispersed, there might be merit to plaintiffs' approach, as we would have a baseline for what efficiency gaps should be under neutral principles. But the world is not so tidy. Imagine a slightly different scenario, where a state's Democratic voters are moderately clustered toward the southern edge of the state. The remaining voters are evenly dispersed throughout the state.

State 'X' with Moderate Clustering

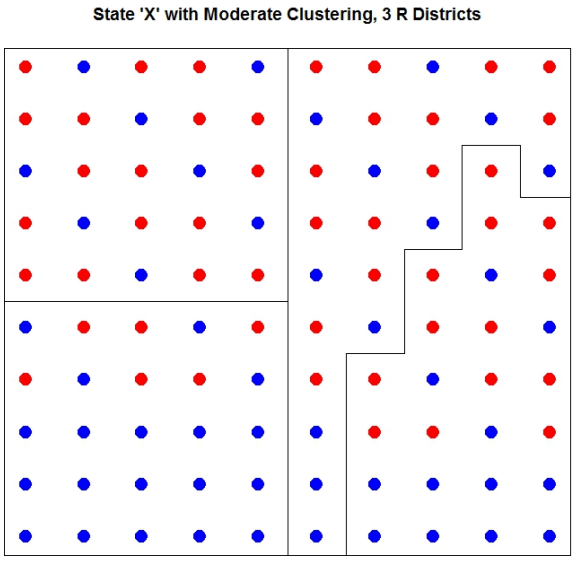


18. In this scenario, our even division of the state into quadrants results in two Republican and two Democratic districts, but it is a closer call. Beginning in the top left quadrant, and proceeding clockwise, the districts have: 17 Republicans and 8 Democrats, 17 Republicans and 8 Democrats, 10 Republicans and 15 Democrats, and 6 Republicans and 19 Democrats. Under this scenario, the EG is zero.

19. But note how sensitive this scenario is to slight shifts in partisanship. If three Democrats in the southeastern portion of the state vote differently, we have three Republican districts in a state that would still be evenly split. An even efficiency gap would be transformed

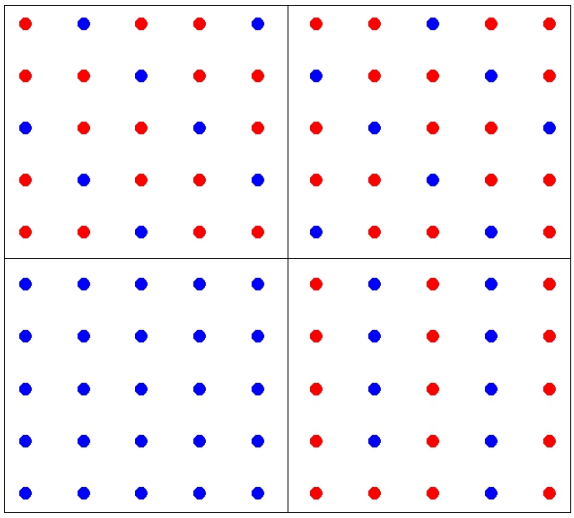
into an efficiency gap of -.25 under the Jackman approach, and of -.19 under the Mayer approach. Court scrutiny would be invited as a result of just three percent of voters changing their underlying voting pattern.

20. The northeastern and southeastern districts can be tweaked to draw three Republican districts with relative ease, while maintaining true compactness in the western portion of the state; drawing three Democratic maps is difficult:



21. Let's imagine one final scenario to bring the point home. In this scenario the voters in the state are heavily clustered in the southwestern corner of the state, while the remaining partisans are more evenly dispersed. We again draw our familiar "grid" districts:

State 'X' with Heavy Clustering



22. Under this scenario, utilizing our original "neutral" map drawing techniques actually results in three reliably Republican districts. Beginning in the northwestern corner and proceeding clockwise, the districts contain: 17 Republicans and 8 Democrats, 17 Republicans and 8 Democrats, 16 Republicans and 9 Democrats, and 25 Democrats. Under this scenario, the efficiency gap is -.25. Court scrutiny is invited as a result of applying neutral principles.

23. Of course, you can still draw two, or even three Democratic districts under our "clustered" scenario using relatively compact districts. But this misses the point. The point is that if significant partisan clustering occurs in a state, application of undeniably neutral redistricting principles would nevertheless result in a disproportionate number of wasted Democratic votes, and could invite court scrutiny. Moreover, it is *easy* to draw Republican-leaning districts – it takes a few minutes of effort – while drawing Democratic leaning districts requires some ingenuity.

24. In short, under a scenario where significant clustering occurs, you actually have to engage in what would traditionally be called gerrymandering in order to draw a neutral map.

25. As the report shows, this is exactly what occurred in Wisconsin. This is obvious from a simple visual inspection of maps of Wisconsin precincts and counties over time. The Democratic vote begins dispersed across the state, but becomes increasingly clustered geographically over time. The gradual consolidation of the Democratic vote into a few key Wisconsin counties coincides with the growth of wasted Democratic votes.

26. This report also measures the consolidation of the Democratic vote quantitatively, finding that heavily Democratic precincts tend to be clustered closer to other heavily Democratic precincts in Wisconsin than Republican precincts are to other Republican precincts, and that this trend has accelerated over the course of the past decade.

27. A failure to account for this and the "natural" wasted votes that occur as a result of clustering calls into question the usefulness of the wasted votes metric as a measurement of gerrymandering – at least as gerrymandering is commonly understood. When significant clustering occurs, a party can "gerrymander" while drawing lines without partisan intent.

28. This leads to the third problem with plaintiffs' approach: It is both underinclusive and overinclusive. The report examines those states that would invite court scrutiny under the metric, and finds an odd mixture of maps that were drawn with obvious partisan intent, as well as maps that could not reasonably qualify as partisan gerrymanders.

29. For example, the EG metric finds that New York and Wisconsin in the 2000s would qualify as partisan Republican gerrymanders. But Democrats drew Assembly districts in New York, while Wisconsin's map in the 2000s was drawn by a Court. Both are examples of states where there is a high degree of partisan clustering: in New York City and in Dane/Milwaukee/Rock counties respectively.

30. At the same time, almost all observers agree that Democrats gerrymandered aggressively in Illinois, at least as commonly understood, in a bid to shore up their majorities in the state. Yet those maps would not invite scrutiny under the proffered standard.

31. Because the standard does not account for the naturally occurring clustering of partisans that has grown in Wisconsin recently, and because the metric brings under its ambit maps that are clearly not partisan gerrymanders, as commonly understood, while excluding maps that were clearly drawn with heavy partisan intent, it is not a solution to the problem of identifying unconstitutional partisan gerrymanders that has flummoxed federal courts for decades.

32. Fourth, the imputation strategy employed to solve the problem of uncontested districts results in a skewing of efficiency gaps in Wisconsin.

33. Fifth, the EG metric fails to account for important effects, such as incumbency and campaign spending.

34. Sixth, the EG metric is overly sensitive to slight changes in votes.

35. Seventh, EGs do not mean that parties are effectively locked out of the political process.

EXPERT CREDENTIALS

36. I have studied and followed United States elections on both a part-time and full-time basis for almost two decades.

37. I received a B.A. from Yale University in 1995, with a double major in history and political science.

38. I received a J.D. from Duke University in 2001.

39. I also received an M.A. from Duke University in 2001, in political science.

40. I joined RealClearPolitics in January of 2009 as their Senior Elections Analyst. I assumed a fulltime position with RealClearPolitics in March of 2010.

41. RealClearPolitics is one of the most heavily trafficked political websites in the world. It serves as a one-stop shop for political analysis from all sides of the political spectrum and is recognized as a pioneer in the field of poll aggregation. It is routinely cited by the most influential voices in politics, including David Brooks of *The New York Times*, Brit Hume of *Fox News*, Michael Barone of *The Almanac of American Politics*, Paul Gigot of *The Wall Street Journal*, and Peter Beinart of *The Atlantic*.

42. My main responsibilities with RealClearPolitics consist of tracking, analyzing, and writing about elections. I also am in charge of rating the competitiveness of House of Representatives races, and collaborate in rating the competitiveness of Presidential, Senate and gubernatorial races. As a part of carrying out these responsibilities, I have studied and written extensively about demographic trends in the country, as well as the approaches that parties use to draw lines.

43. As part of familiarizing myself with how parties have drawn lines over the decades, as well as learning the political geography of the United States, I drew, using Adobe Illustrator, complete maps of every congressional district ever drawn, dating back to 1789. Examples of these maps are attached as Exhibits 3-12.

44. I am also a Senior Columnist for Dr. Larry Sabato's "Crystal Ball." I began writing for the Crystal Ball in January of 2014.

45. The overarching purpose of my writings, both at RealClearPolitics and the Crystal Ball, is to try to convey more rigorous statistical understandings of elections than are typically found in journalistic coverage of elections to a lay audience.

46. I am the author of *The Lost Majority: Why the Future of Government is up For Grabs and Who Will Take It.* The book offers a revisionist take on realignment theory. It argues that realignments are a poor concept that should be abandoned. As part of this analysis, it conducts a thorough analysis of demographic and political trends beginning around 1920 and continuing through the modern times. It was one of the first examples of the dangers the Democratic Party faced from the increased geographic concentration of its coalition.

47. I also authored a chapter in Dr. Larry Sabato's *Barack Obama and the New America: The 2012 Election and the Changing Face of Politics,* which discussed the demographic shifts accompanying the 2012 elections. I also authored a chapter in Sabato's *The Surge: 2014's Big GOP Win and What It Means for the Next Presidential Election*, which discusses demographics and Electoral College shifts.

48. I co-authored the 2014 *Almanac of American Politics*. The Almanac is considered the foundational text for understanding congressional districts and the representatives of those districts, as well as the dynamics in play behind those elections. PBS's Judy Woodruff described the book as "the oxygen of the political world," while NBC's Chuck Todd noted that "[r]eal political junkies get two *Almanacs*: one for the home and one for the office." My focus was researching the history of and writing descriptions for many of the newly-drawn districts.

49. I have spoken on these subjects before audiences from across the political spectrum, including at the Heritage Foundation, the American Enterprise Institute, the CATO Institute, the Bipartisan Policy Center, and the Brookings Institution. In 2012, I was invited to Brussels to speak about American elections to the European External Action Service, which is the European Union's diplomatic corps.

50. It is my policy to appear on any news outlet that invites me, barring scheduling conflicts, and I have appeared on both Fox News and MSNBC to discuss electoral and demographic trends. I have spoken on a diverse array of radio shows such as First Edition with Sean Yoes, the Diane Rehm Show, the Brian Lehrer Show, the John Batchelor Show, the Bill Bennett Show, and Fox News Radio. I have been cited in major news publications, including *The New York Times*, *The Washington Post*, *The Los Angeles Times*, *The Wall Street Journal*, and *USA Today*.

51. I sit on the advisory panel for the "States of Change: Demographics and Democracy" project. This three-year project is sponsored by the Hewlett Foundation and involves three premier think tanks: The Brookings Institution, the American Enterprise Institute, and the Center for American Progress. The group takes a detailed look at trends among eligible voters and the overall population, both nationally and in key states, in an attempt to explain the impact of these changes on American politics, and to create population projections, which the Census Bureau abandoned in 1995.

52. I previously authored an expert report in *Dickson v. Rucho*, No. 11-CVS-16896 (N.C. Super Ct., Wake County), in which I was asked to identify the partisanship of various districts and opine as to whether they were drawn with partisan intent. It is my understanding that my report was accepted without objection. I have also authored an expert report in a nearly identical version of this litigation, brought in federal court.

53. I also previously authored two expert reports in *NAACP v. McCrory*, No. 1:13CV658 (M.D.N.C.), which involves challenges to multiple changes to North Carolina's voter laws, including a reduction in early voting days and elimination of same-day registration. I testified at the trial phase of that litigation.

54. I also previously authored an expert report in *NAACP v. Husted*, No. 2:14-cv-404 (S.D. Ohio). There was no live testimony at the preliminary injunction phase of that litigation, but it is my understanding that my expert report was accepted by and cited to by the Court without objection. I have also authored an expert report in a later iteration of that litigation, *Ohio Democratic Party v. Husted*, No. 2:15-CV-1802 (S.D. Ohio), and testified at trial.

OPINIONS

I. Plaintiffs' Experts Do Not Offer A Unified Definition of the Efficiency Gap

55. It is at times difficult to critique plaintiffs' conception of the efficiency gap, because their experts offer two different formulas for measuring that gap. This difference can be consequential.

56. Dr. Jackman calculates the EG with respect to the votes-to-seats curve. For him, the EG is generated from the equation "EG=S-.5-2(V-.5)," where "S" is the share of seats a party wins in a given jurisdiction and "V" is the share of votes that a party wins. Jackman at 16.

57. Dr. Mayer, by contrast, defines the efficiency gap as "the difference between the sum of wasted votes for the two parties, divided by the total number of votes cast in the election." Mayer at 43. Dr. Mayer also expresses his metric in terms of percentages, while Dr. Jackman expresses his metric in decimal form, although in mathematical terms the scale is identical. For purposes of this report, I will express both in decimal form.

58. To see how these values can vary, consider two examples provided in Dr. Mayer's report. On page 50, Dr. Mayer estimates the results Act 43 would have produced had all seats been open. On page 48, he estimates the results from his sample plan.

59. According to Dr. Mayer's calculations, the EG for Act 43 is -.1169. But employing Dr. Jackman's formula, the EG is -.0985.

60. Similarly, according to Dr. Mayer's calculations, the EG for his demonstration plan is -.219. Under Dr. Jackman's formula, the EG is -.0077.

61. The difference in measurement with respect to Dr. Mayer's estimated Act 43 result is .0141 points. The difference in measurement with respect to Dr. Mayer's estimated demonstration plan is .0184 points. When one considers that Dr. Jackman's measurements of historic efficiency gaps stretch only from -.18 to .2, this is a substantial, meaningful amount of uncertainty. If a court adopts Dr. Jackman's approach to the efficiency gap, it will likely result in a somewhat different universe of states found presumptively unconstitutional than if it adopts Dr. Mayer's approach.

II. The Clustering of the Democratic Coalition creates "natural" packing, which the Efficiency Gap metric does not account for.

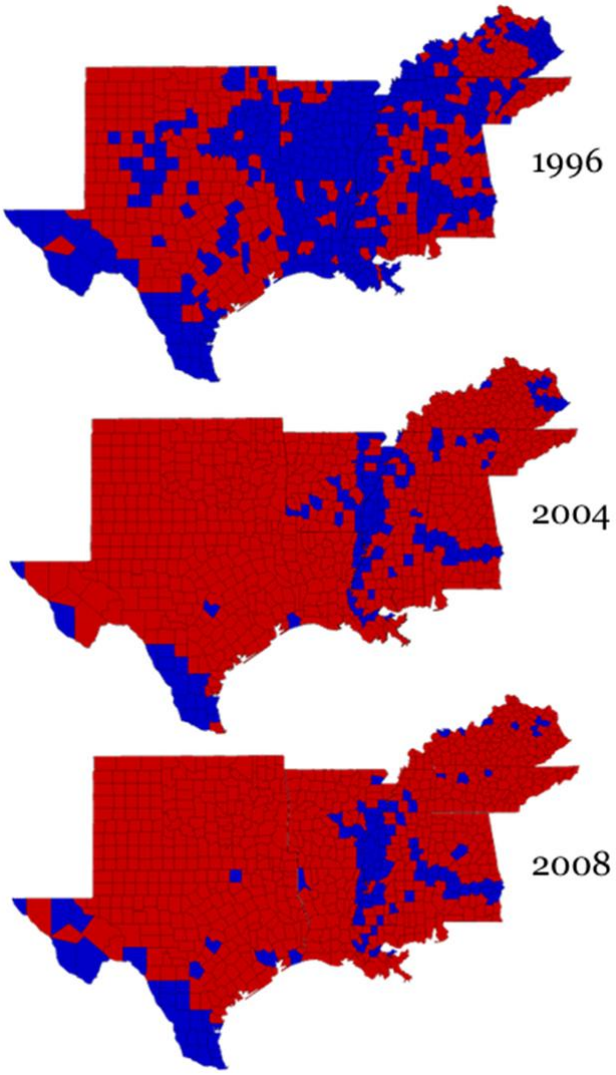
62. In 2002, John Judis and Ruy Teixeira wrote a book entitled "The Emerging Democratic Majority." In their telling, the Democratic Party of the 1990s was undergoing a transformation, and would emerge as a dominant party as a result of its coalition of minorities, women, creative class professionals and working class voters. This, they surmised, would enable Democrats to control the House, Senate and presidency into the future.

63. In 2011, I wrote a book called "The Lost Majority: Why The Future of Government is Up for Grabs, and Who Will Take It." It observed that Judis and Teixeira had been correct about a great many things, but had also overlooked the degree to which the new coalition would alienate older members of the Democratic coalition (as well as relying upon a faulty political science concept known as realignment theory). In particular, the increasingly liberal Democratic coalition alienated more conservative working class and rural voters, which Judis and Teixeira assumed would form the fourth portion of the Democrats' coalition.

64. My book argued that this trend among white working class voters and rural voters would help keep Republicans competitive at the presidential level for the foreseeable future. It also concluded that this should not have been surprising, as the story of American politics is one of ever changing coalitions, as the growth of one group pushes a group without countervailing interests into the arms of the other party.

65. But I noted that the Democrats' new coalition was uniquely problematic at the state legislative and congressional level. Because liberals, young voters, minorities, and other members of the Democrats' coalition tend to be concentrated in cities and/or placed into minority majority districts, this damaged their ability to win congressional districts, which reward parties with a wide geographic reaches (as illustrated in the introduction to this report).

66. Consider the West South Central region of the country. The following maps show the counties won by Republican and Democratic presidential candidates, utilizing the familiar red/blue color scheme.



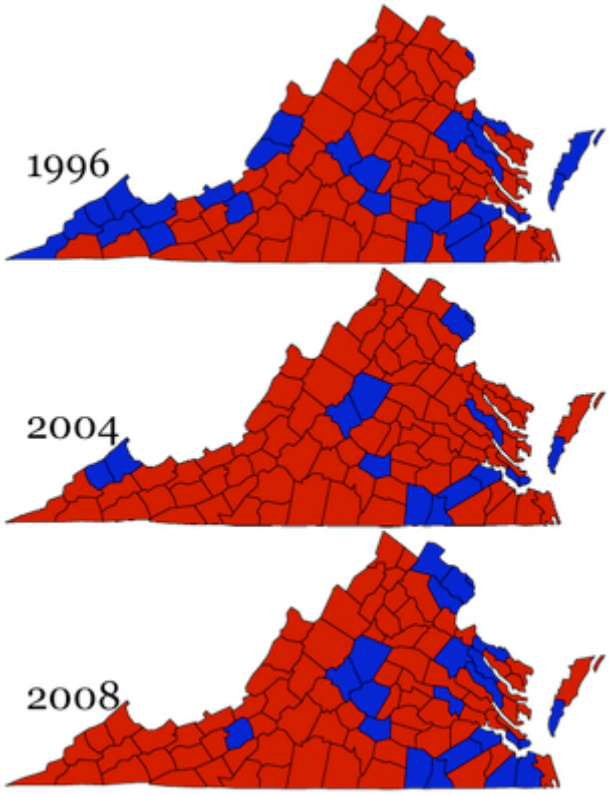
67. When Bill Clinton ran for re-election in 1996, he won nationally by about eight points. As we can see, his support in the region was geographically dispersed, which allowed him to carry around 54 percent of the Congressional districts in the region. This, in turn, helped Democrats win around 50 percent of these districts.

68. Barack Obama won nationally in 2008 by about seven points, yet this did not translate into success in the region. He ran about eight points behind Clinton's 1996 showing here. Interestingly, he actually ran about three points ahead of John Kerry in this region, yet carried fewer counties. The difference is that he carried several urban counties that neither Kerry

nor Clinton carried, such as Harris County, Texas (Houston), Jefferson County, Alabama (Birmingham) and Dallas County, Texas. But because his coalition shrank geographically, the net result was disadvantageous to Congressional Democrats; then-Senator Obama carried only 23 percent of the Congressional Districts in the region, with Democrats winning 39 percent of the seats. The latter number fell to 26 percent in 2010.

69. You can see the effects of geographic clustering in sharpest relief in a state like Virginia. Here, Barack Obama won by six points in 2008, while Bill Clinton had lost by two (despite the fact that they had won by similar margins nationally). Yet, from a geographic perspective, Obama's coalition was quite a bit narrower.

70. Obama shed voters, even from Kerry's losing coalition, in the western portion of the state, carrying only Montgomery County (Virginia Tech). He and Kerry added Albemarle County outside fast-growing Charlottesville (University of Virginia), and he performed well in the African American rural counties. He also added suburban Henrico County near Richmond, and carried some counties in the Hampton Roads area that Kerry and Clinton failed to carry. But the biggest gains are obvious, coming in northern Virginia. Obama became the first Democrat since LBJ to carry Loudoun and Prince William counties, and the second to carry Fairfax (Kerry was the first).



71. There is little doubt that the Democratic vote in Wisconsin is also increasingly concentrated in fewer counties. To understand the following analysis, we must first understand the concept of a state's Partisan Index.

72. A state's Partisan Index is computed by subtracting the share of the state that voted for the Republican presidential candidate from the share of the nation that voted for the Republican presidential candidate. For purposes of these calculations, third parties and independent candidates are excluded (i.e., we use what political scientists call the "two-party vote").

73. To illustrate the utility of the Partisan Index, consider the following example. In 1984, Ronald Reagan won 51.4 percent of the two-party vote in Massachusetts. In absolute terms, one could consider Massachusetts a swing state. But no one would have considered Massachusetts a swing state, because it had two Democratic senators, a Democratic governor,

and an overwhelmingly Democratic legislature. Ten of the state's eleven congressional districts elected Democrats, and the one Republican, Silvio Conte, was very liberal Republican.

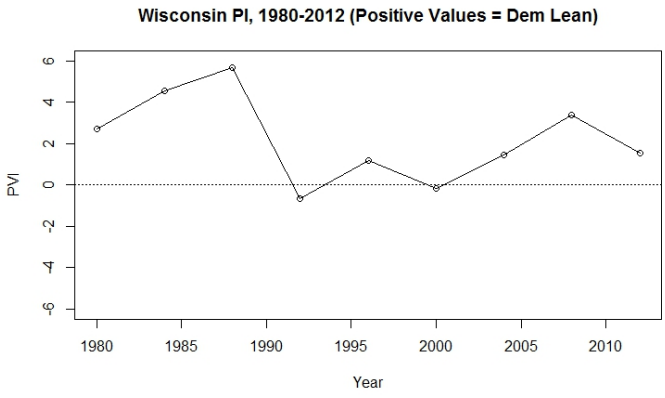
74. Moreover, one would conclude that, using absolute terms, the state has swung wildly toward Democrats in the interim, since Barack Obama won 61.8 percent of the two-party vote in the state in 2012.

75. But Reagan's 51.4 percent win in Massachusetts has to be viewed in the context of his winning 59.2 percent of the two-party vote nationally. Compared to the country as a whole, Massachusetts actually had a Democratic lean of 7.8 points in 1984.

76. Likewise, Obama's 61.7 percent win in Massachusetts has to be viewed in the context of his winning 52 percent of the two-party vote nationally. Compared to the country as a whole, Massachusetts actually had a Democratic lean of 9.8 points in 2012. Viewed in this light, Massachusetts has actually had relatively stable politics since 1984, with only a slight shift toward Democrats.

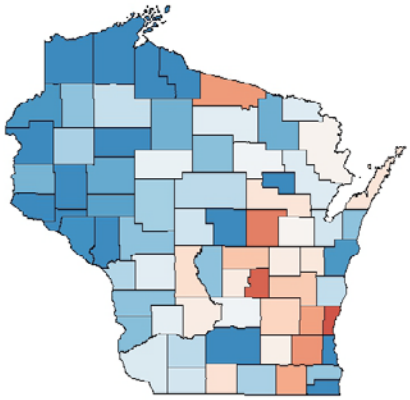
77. In short, Partisan Index allows us to control for national effects, and compare results across elections.

78. Wisconsin's PI has been mostly stable since the 1980s. After dipping to near-neutrality, during the 1990s, it shifted modestly leftward in the 00's.

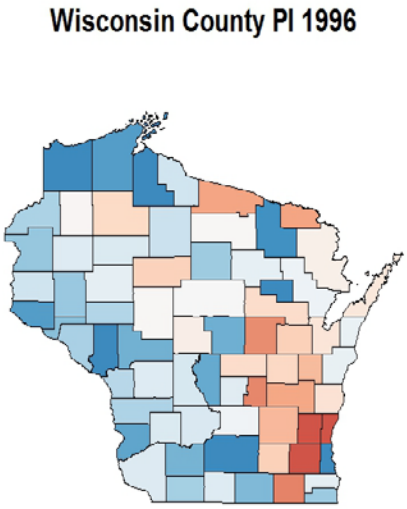


79. In this report, we begin by looking at Partisan Index on the county level across Wisconsin in a series of maps, with particular attention paid to 1996, 2004 and 2012, which represent years where the PIs of the state were similar (1.19, 1.43, and 1.54, respectively).

Wisconsin County PI 1988

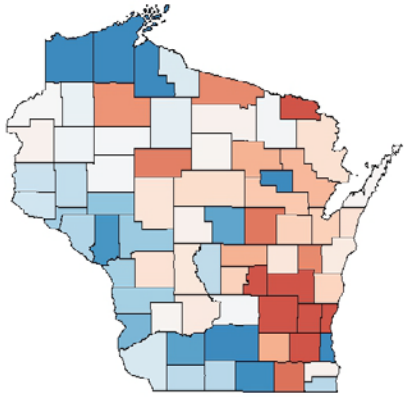


80. In 1988, the Democratic Party in Wisconsin had a broad geographic reach. It was strongest on the Menominee Indian Reservation (PI=26.86), as is the case today. The other four most Democratic counties include Douglas (22.47), Milwaukee (15.34), Ashland (14.63) and Dane (14.3). Seventy-one percent of counties had Democratic leans, and the Democratic Party covered the entire western portion of the state, particularly in the northwest. Republicans were relegated to the German-settled counties in the southeast and east-central portions of the state (note: The map caps the color-coding at PIs of -.1 and .1, in order to minimize the effect of outliers on the overall color-coding scheme).



81. By 1996, the state as a whole had become modestly more Republican compared to the country as a whole, so it is unsurprising that the number of Republican counties increased; 45 counties (62.5 percent) had Democratic leans. But the shift was uneven. Democratic performance fell by just 4.5 points and 4.2 points in Milwaukee and Dane Counties, respectively. It fell by nine points in Douglas County, however, as the northwest became noticeably less Democratic.

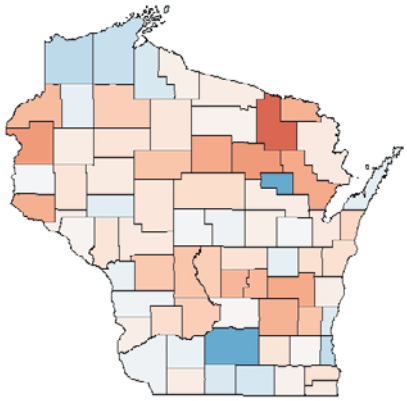
Wisconsin County PI 2004



82. In 2004, Wisconsin was once again marginally more Democratic than the country as a whole, but the political divisions looked quite different than they had in 1996. Democrats maintained their strength in the three industrial counties on the Lake Superior shoreline, as well as in the southwestern portion of the state. Milwaukee and Menominee Counties were Democratic as well. Ashland, Bayfield, and Douglas counties were 2.5 percent, 3.5 percent, and 4.2 percent more Republican than the country as a whole, respectively, than they had been in 1996. Milwaukee was 3.8 percent more Democratic. Menominee and Dane counties were both 7.9 percent more Democratic than they had been in 1996.

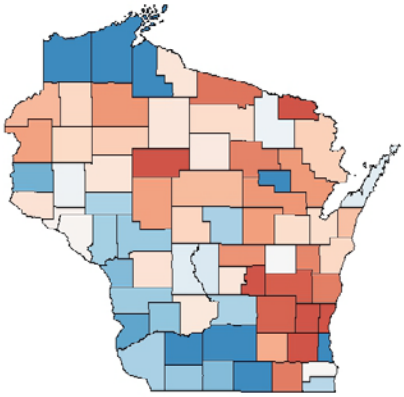
83. It was a different story in less populated counties. Forest County swung 9.2 points toward Republicans, Crawford County swung 1.2 points toward Republicans, and Adams County swung four points toward Republicans. The total number of Democratic-leaning counties dropped to 33, or just 46 percent of the counties in the state. Overall, the bluest counties tended to become bluer, while the rest of the state shifted rightward.

Wisconsin County PVI Change, 1996-2004

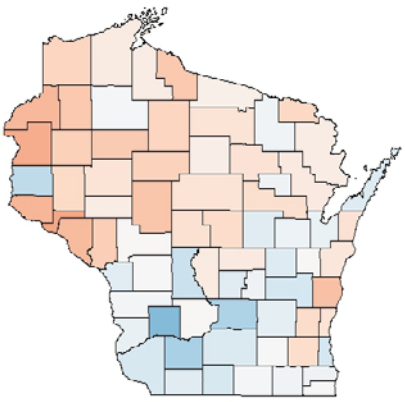


84. In 2012, the state was in roughly the same position relative to the country as a whole as it had been in 2004. But the stable orientation of the state overall masked significant internal movement. Dane and Milwaukee Counties swung a couple of points toward Democrats, along with some of the southwestern counties. Douglas and Ashland counties, along with most of the northwestern portion of the state, actually moved a touch toward Republicans. Overall, although the state was almost identically as Democratic in 2012 as it was in 1996, only 27 counties retained a Democratic lean in the latter year, or just 37.5 percent of the state. Moreover, these counties were geographically concentrated, in the southwestern portion of the state, in the far northwest, and in Milwaukee.

Wisconsin County PI 2012



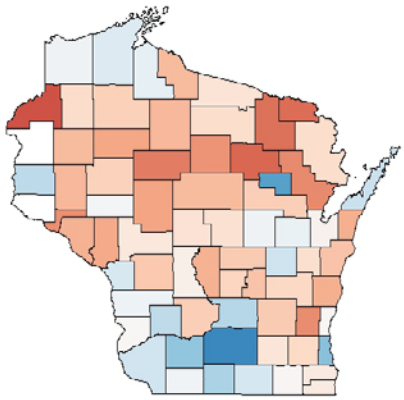
Wisconsin County PVI Change, 2004-2012



85. Overall, from 1996 to 2012, the Democratic Party became substantially less competitive in the northwestern portion of the state, as well as in the rural portions of the state outside of the southwestern corner. Its reach was limited to fewer counties, and those counties were clustered in geographically compact regions. You can see this in the map of changes

occurring across the entire time period; Democrats gained primarily in counties that already leaned Democratic at the beginning of the time period, while Republicans gained in places where they had been weak. The state didn't budge politically, but the internal movement was unmistakable. As was the case with the country as a whole, the Democrats' coalition became deeper, but narrower.

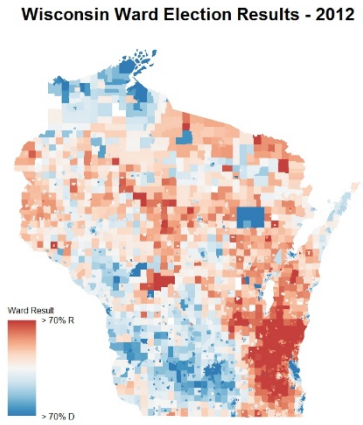
Wisconsin County PVI Change, 1996-2012



86. To put this into further perspective, Dane, Milwaukee, and Rock counties have provided Democrats with their three largest vote margins in every election since 1992 (inclusive). In 1996, Bill Clinton carried these three counties with 64 percent of the two-party vote. He also, however, carried the rest of the state with 52 percent of the vote, for a difference of twelve percent. In 2012, by contrast, even though Barack Obama was winning with a lower vote share (both in Wisconsin and nationally) than Clinton had in 1996, he carried Dane, Milwaukee and Rock counties with 69 percent of the vote. He lost the rest of the state, however, to Mitt Romney, 47 percent to 53 percent. The gap between those three counties and the rest of the state was 22 points. If we look in terms of Partisan Index, we see a similar trend; the gap

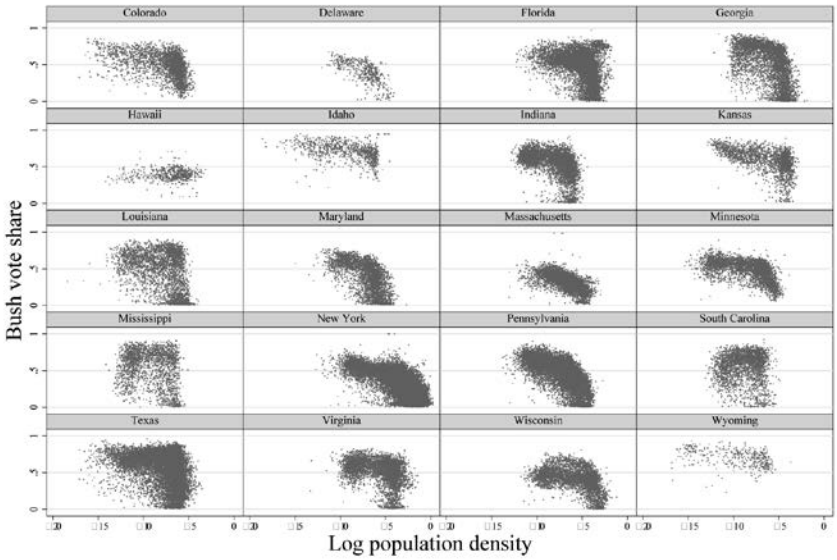
between the three counties above and the rest of the state was 12 points in 1996, 18 points in 2004, and 22 points in 2012.

87. We can also take a more rigorous approach to this. Consider the following map of Wisconsin wards in 2012, using Dr. Mayer's modified ward values.



88. This allows us to see that the clustering that is apparent at the county level filters down to the ward level, with Democrats concentrated in the northwest, southwest, and in Milwaukee County.

89. We can see this further in the following chart, reproduced from Jowei Chen and Jonathan Rodden, "Unintentional Gerrymandering: Political Geography and Electoral Bias in Legislatures," 57 Quarterly Journal of Poli. Sci. 200 (2013):

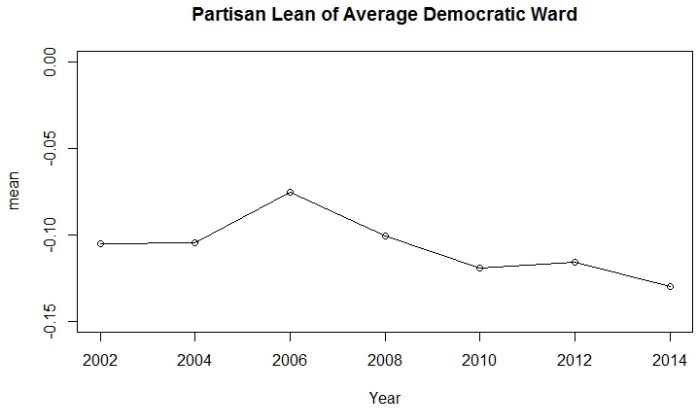


90. Each of these dots represents an estimate for voting units in each state, generated from vote files and the U.S. census. The figure charts them by partisanship (e.g., how heavily each unit voted for the Republican presidential ticket in 2000) on the vertical axis, and by population density on the horizontal axis. As you can see, in Wisconsin (as in many other states), as the units become more heavily Democratic, they also become more densely populated. This suggests that the Democratic vote is heavily concentrated in cities. Even as of 2000, as population density increased in Wisconsin, the Republican share of the vote dropped.

91. We can validate our assumption numerically through a two-step process. First, we want to see whether Wisconsin's wards have become increasingly polarized. That is, are there *more* heavily Democratic wards today than there were a decade ago? Second, we want to know whether the heavily Democratic wards are located more closely together than heavily Republican wards.

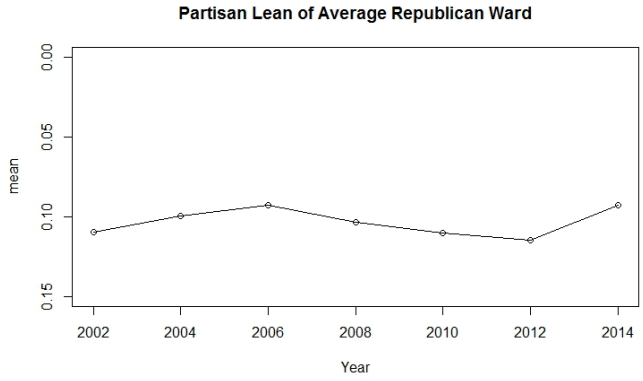
92. From 2002 to 2014, I looked at the top of the ticket race in the state (note: I tested both the "raw" LTSB data and the data recalculated under Dr. Mayer's metric for 2004, 2008 and 2012, and determined that, in this context, utilizing the raw data did not alter any conclusions).

93. To accomplish the first goal, I calculated the average Democratic lean of wards that leaned toward Democrats over the course of the past decade:



94. As you can see, the mean Democratic ward in Wisconsin has moved leftward over the course of the past decade. That is to say, the average Democratic ward in 2014 was 2.5 percent more Democratic than in 2002.

95. At the same time, we do not see any similar effect for Republican wards:

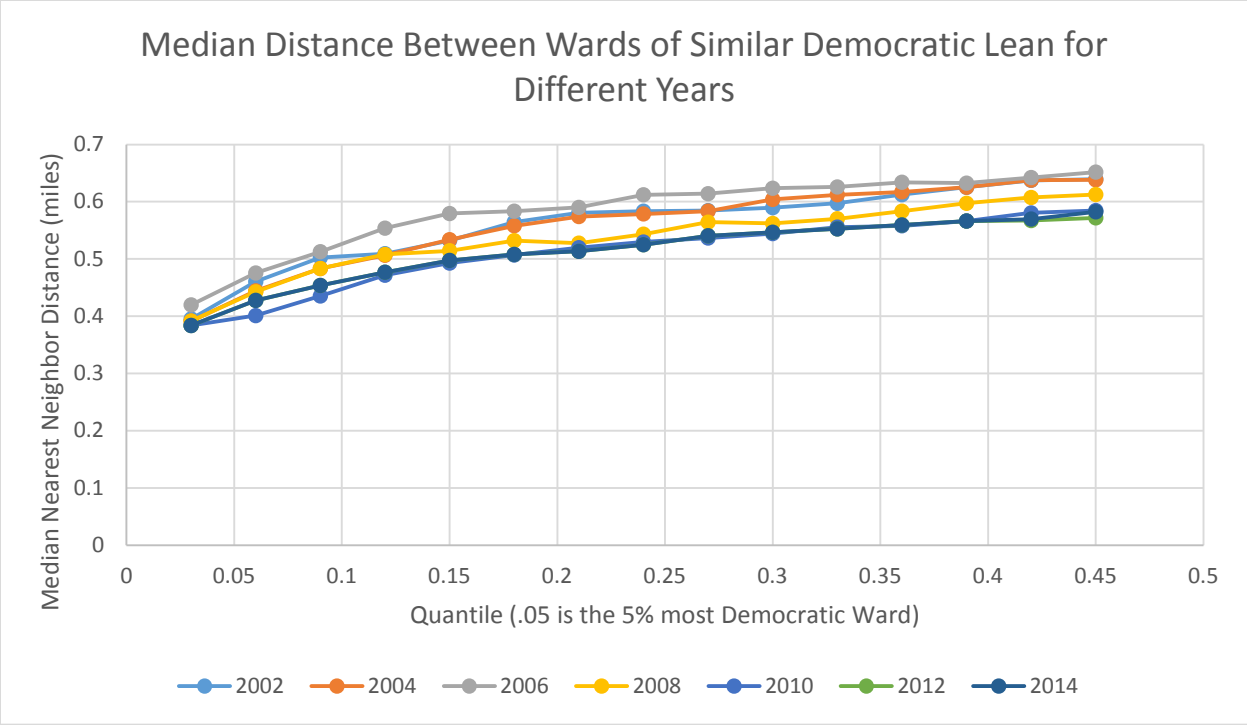


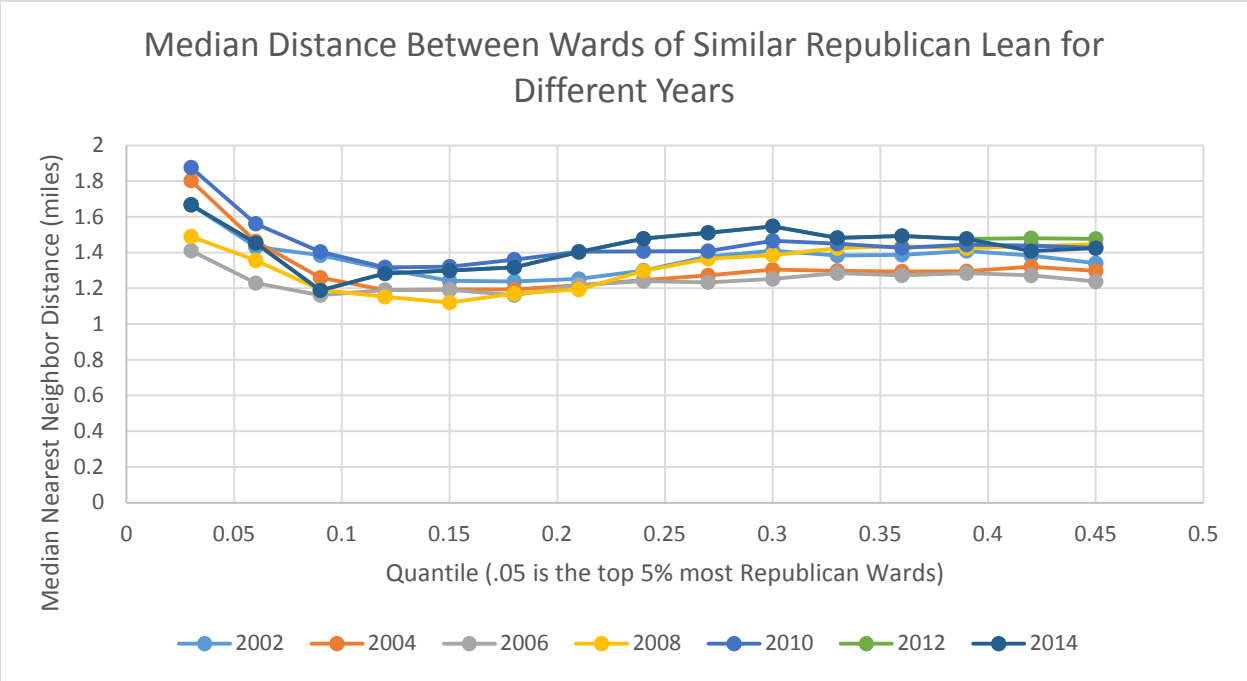
96. This answers the question of whether the Democratic-leaning wards in Wisconsin have become more heavily Democratic over time. To answer our second question, we first need

to sort the wards for each cycle into partisan-filtered maps, using the partisan index as a guide to the state's overall partisanship. That is a complicated way of saying that I took the D+1 wards as a group, the D+2 wards as a group, and so forth.

97. Next, the distance to the nearest neighbor for each ward was calculated, for each subset of partisan indices. To visualize this, imagine creating a grid with all of the D+1 wards listed both horizontally and vertically (if you prefer, an i x j matrix where both dimensions are defined as including the number of wards). The distance from the first ward to every other ward is calculated, filling in the first row of our grid. The smallest value is noted, which represents the distance from ward 1 to the nearest other ward of similar partisan index. The process then repeats for ward 2, ward 3, and so forth. At the end, the median of the smallest distances is calculated, which gives us an idea how close the D+1 wards are to each other (I utilized the median rather than the mean here because outlying wards, such as Menominee County, exert an undue amount of leverage on averages). The process is then repeated for D+2, D+3 and so forth. If Wisconsin has, in fact, become more clustered over time, then we should see the median distance decline as the partisanship of wards increases.

98. In fact, this is exactly what we see. The following charts show the wards grouped and labeled from most Democratic to least Democratic, and most Republican to least Republican. It shows the median distance for each grouping from every ward to its closest neighbor of similar partisanship. The quantiles from .45 to .55 are excluded, since they are effectively neutral.





99. As the wards become more Democratic, the distances between them shrinks. By contrast, the Republican ward distances tend to be fairly stable, until we get to the most heavily Republican wards, which are actually more spread out than the more neutral wards.

100. Taken together, these analyses demonstrate that, over the course of the past two decades, Wisconsin's Democratic vote has increasingly found itself relegated to Milwaukee County, the southwestern portion of the state, and a few counties in the northwestern portion of the state. This, in turn, shifts Wisconsin the baseline of Wisconsin maps rightward.

101. We see an example of how this plays out in Dr. Mayer's analysis. He proceeded with a mandate to "draw[] a legislative plan that has an efficiency gap as close to zero as possible while complying with federal and state requirements at least as well as the plan enacted by the Wisconsin legislature in Act 43." Mayer Report at 2. Yet after several days of mapmaking, Dr. Mayer ultimately failed to draw a map with a zero efficiency gap; the efficiency gap was actually -.022. That is almost 1/3 of the way to being a gerrymander under the standard that plaintiffs urge.

102. Plus we must remember what it means that Dr. Mayer sought to "comply[] with federal and state requirements at least as well as the plan enacted by the Wisconsin legislature." First, it is not clear that he succeeded; his districts have larger population deviations and split more localities (though they split fewer counties) than the Act 43 districts. *Id.* at 37.

103. But second, and more importantly, plaintiffs' theory is that Act 43 represents an egregious, unconstitutional gerrymander. There is something of a Hobson's choice at work here. Either Act 43 complies with traditional redistricting criteria well, which would divorce plaintiffs' metric from most understandings of gerrymandering even further, or it does not comply with traditional criteria well, in which case it is unclear that even a gerrymander (under most understandings of the term) pointing the other direction would be able to eliminate the efficiency gap entirely.

104. This is important because the efficiency gap metric assumes there is a baseline of zero – that is, if maps were drawn under neutral criteria with neutral intent, there would be no efficiency gap. But as the drawings in our introduction demonstrate, this is not necessarily the case. When natural clustering of Democrats occurs, the efficiency gap created by neutral processes drifts rightward; efficiency gaps increasingly present as a result of factors other than action by the state. This is likely one reason why, as plaintiffs' experts observe, the national trend has been toward increasingly Republican-leaning efficiency gaps, while the larger pro-Democratic efficiency gaps tend to occur in earlier decades.

105. What plaintiffs' standard does, at least in part, is force legislatures to enact "make up calls" for natural clustering of Democrats and for the clustering of Democratic-leaning groups required by the Voting Rights Act. In an odd way, by failing to account for the natural distribution of partisans, plaintiffs force legislatures to draw lines with partisan intent.

III. Plaintiffs' Standard is Both Underinclusive and Overinclusive.

106. This "natural gerrymandering" leads to an additional problem: The efficiency gap invites court scrutiny of maps that are clearly not partisan gerrymanders, while absolving maps where legislators clearly acted overwhelmingly with partisan intent.

107. While the Supreme Court has dismissed partisan intent or proportionality as a workable standard for gerrymandering, it has never intimated that gerrymanders could exist *without* partisan intent or disproportionate outcomes. The problem lies in creating workable limits determining how much partisan intent is too much partisan intent, or in constructing the counterfactual to predict disproportionate outcomes. At the same time, almost everyone's conception of gerrymandering involves intent to disadvantage a party, and to create disproportionate outcomes. If a proposed standard ignores a large number of maps drawn with

clear, overwhelming partisan intent, or includes a large number of maps that could not reasonably be argued to be gerrymanders, there is a good chance that the metric so radically alters the understanding of gerrymandering that it, in fact, is capturing something entirely different than gerrymandering.

108. Dr. Jackman identifies 17 maps with an "unambiguous history" of having a consistent efficiency gap sign over the lifespan of the plan. Jackman at 55.

109. But many of the states that would be included in the definition of a gerrymander here are poor candidates for the label, at least as most people would understand it. Table 1 shows the states on the list, as well as the party that controlled the governorship, state senate, and state house in the year prior to reapportionment.

Table 1: Partisan Control of Redistricting, Maps Id'd With "Unambiguous EGs"

State	Year	Gov	House	Sen
FL	2002	R	R	R
CA	1992	R	D	D
CO	1982	D	R	R
CO	1972	R	R	R
IL	1992	R	D	D
MI	2002	R	R	R
MI	1992	R	R	D
MO	2002	D	D	R
NY	2002	R	R	D
NY	1992	D	R	D
NY	1972	R	R	R
NY	1982	D	R	D
OH	2002	R	R	R
OH	1994	R	R	D
PA	1982	R	R	R
WI	2002	R	D	R
FL	1972	D	D	D

110. Only seven of the seventeen states included in the list of gerrymandered states feature unified partisan control of redistricting in the year where reapportionment was conducted (Ohio in 1992 drew its district lines through a Republican-controlled apportionment board). In five of those seven instances (the two Florida maps being the exception), control of at least one of the maps that produced unambiguous histories of consistent efficiency gaps switched partisan

hands at least once. The results of New York's 1972 map were particularly dramatic; by the end of the decade an 83-66 Republican lead in the state Assembly had transformed to an 85-64 Democratic lead; the 1972 elections actually marked the last election where Republicans would control the Assembly. This suggests that even enduring efficiency gaps do not necessarily translate into one side or the other being locked out of the legislative process (see below).

111. The remaining maps are poor candidates for gerrymanders, at least as the term is commonly understood. The Almanac of American Politics 1994 described the 1992 California plan (to simplify things, I refer to the year the plan was implemented, rather than the year it was actually adopted): "The key decisions for the 1990s California maps were made by the voters in 1990 and 1986. In 1990 they elected Republican Governor Pete Wilson, thus depriving Democrats of the untrammeled control they had over redistricting in 1982 and 1962 . . . Wilson held solid to his plan to appoint a redistricting commission to draw up plans for Congress and the legislature, and then handed them over to the state Supreme Court, which in January 1992 adopted them. In fact, the plan is more evenhanded than a Republican redistricter of, say, Phil Burton's abilities would have concocted. The lines are far more regular than in the ultrapartisan plan passed in Texas by the Democrats (this decade's winner of the Burton award)." Almanac of American Politics 1994 at 86.

112. In 1992, the Michigan state legislature failed to pass a reapportionment plan. The state Supreme Court appointed a panel of three special masters, which rejected the plans submitted by the state parties as excessively political. It instead implemented its own plan, which the state Supreme Court approved. *See NAACP v. Austin*, 857 F. Supp. 560 (E.D. Mich. 1994).

113. In 2002, the Missouri legislature deadlocked, and failed to pass any redistricting plan. The map was drawn by a committee of court of appeals judges.

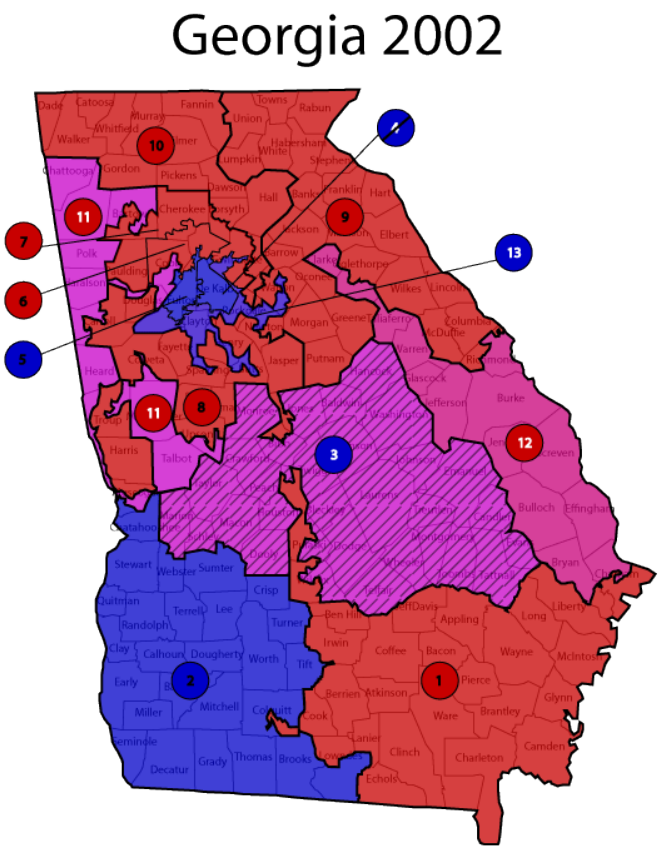
114. The inclusion of New York's maps as potential gerrymanders is particularly perplexing. Control of redistricting has been split since the 1970 maps were drawn, and the tradition that has emerged is that the Republican-controlled senate draws the 63-member senate map, while the Democratic-controlled assembly draws the 150-member assembly map. The reason New York consistently presents as a Republican gerrymander has little to do with the lines drawn, but rather derives from the concentration of the Democratic vote. In 2012, Barack Obama carried New York state by two million votes, but carried the area outside of New York City by just 441,000 votes. These votes are also concentrated (in places like Hempstead and Islip on Long Island), which means that, even with Democrats drawing the Assembly lines and a 441,000 presidential vote advantage to work with, they are able only to split the Long Island and upstate districts evenly with Republicans.

115. The standard also overlooks some of the more obvious examples of redistricting with partisan intention. For example, at the congressional level, the 2004 Almanac of American Politics describes the 2002 redistricting process in Alabama as follows: "[t]he Democrats in control of redistricting in Alabama in 2002 did a pretty good job of helping their party in drawing the boundaries of the state's seven congressional districts, but not quite good enough of a job to add to the two seats they have held since 1994." *Id.* at 54. The map the Democrats produced in a bid to shore up their majorities produces an efficiency gap of -.125, which would invite court scrutiny as a Republican gerrymander.

116. In Colorado in 2002, a court selected a Democratic-drawn map for Congress and state House; Republicans were so infuriated by this that they attempted a mid-decade

redistricting when they next controlled the legislature. *Id.* at 303-04. But the Democratic plan actually produces an efficiency gap of -.09, which would invite court scrutiny as a Republican gerrymander.

117. On the other hand, Georgia in 2002 was considered a strongly Democratic gerrymander. The Almanac describes the process: "[a]fter the 1990 and 2000 Censuses, Georgia Democrats, led by Speaker Thomas Murphy, pushed through convoluted redistricting plans – arguably the most convoluted in the nation each time – to guarantee majorities for their party in the state's House delegation." *Id.* at 454. To do saw, the Georgia legislature drew highly convoluted lines, including the new 13th, which has been liked to a "sick chicken." But the map actually had a slight Republican efficiency gap of -.01.

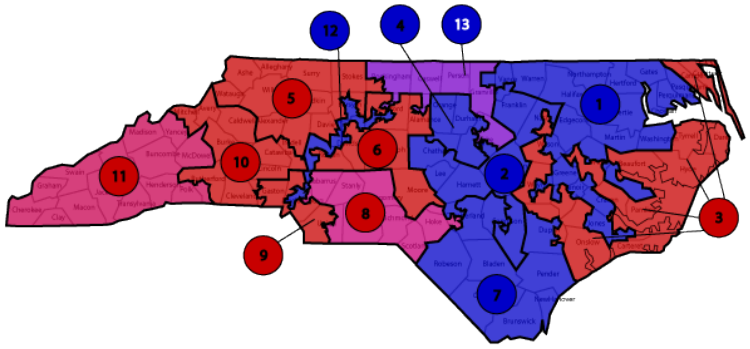


118. Illinois's congressional districts in 2002 represented a negotiated, bipartisan plan that was broadly acceptable to members of both parties. *Id.* at 528-29. Yet it presents with an efficiency gap of -.09, which would invite Court scrutiny as a Republican gerrymander.

119. Iowa's Legislative Services Bureau is often held up as an exemplar of how nonpartisan redistricting ought to work. Yet in 2002, it presents with an efficiency gap of -.2, which would invite court scrutiny as a Republican gerrymander.

120. North Carolina's 2002 redistricting was likewise controlled by Democrats, who sought to weaken Republican Robin Hayes in the 8th District while shoring up Democrat Mike McIntyre in the 7th District. It was successful in doing just that later in the decade. But in 2002, it presented a marginal Republican lean, with an EG of -.026. It is not a gerrymander under the efficiency gap metric, despite plain partisan intent and convoluted districts, including the second district, which resembles a dragon in flight:

North Carolina 2002



121. In 2012, the Arizona congressional lines were drawn by an independent redistricting commission. In 2012, it nevertheless presented with a .16 EG, which would invite court scrutiny as a Democratic gerrymander.

122. In 2012, a Colorado district court judge selected a Democratic redistricting plan for Congress. *See* Almanac of American Politics 2014 at 290-91. In 2012, it nevertheless presented with a -.099 EG, which would invite court scrutiny as a Republican gerrymander.

123. In 2011, Illinois instituted some of the most aggressive redistricting in the country. As the Almanac reported "[u]nder heavy pressure from party leaders desperate to offset Republican gains in other states, Democrats in May 2011 released a map designed to eliminate up to six Republican seats. . . . The state's Republican delegation immediately put out a joint

statement calling it 'little more than an attempt to undo the results of the elections held just six months ago' and they were largely right." *Id.* at 541. Yet the map only presented with an efficiency gap of .058, which would not trigger court scrutiny.

124. Perhaps most strikingly, the Supreme Court conceded in *Veith v. Jubelirer* that the Pennsylvania map for the 2000s was a "partisan redistricting plan;" the case failed because of the lack of a manageable standard. While it presented as a partisan redistricting plan in 2002, in 2006 the efficiency gap was only -.04, while in 2008 it was actually a *positive* .033. In other words, had the national environment been worse for Republicans in 2002, the efficiency gap might conclude that the *Veith* map was actually a modest Democratic gerrymander.

125. In Figure 36, which examines the current legislative maps, Dr. Jackman finds actionable EGs for Rhode Island and Vermont on the Democratic side, and for Florida, Michigan, Virginia, North Carolina, Kansas, Indiana, New York, and Wyoming. A majority of states overall appear to have at least one year of 2012 or 2014 outside of the actionable .07 threshold identified by Dr. Jackman.

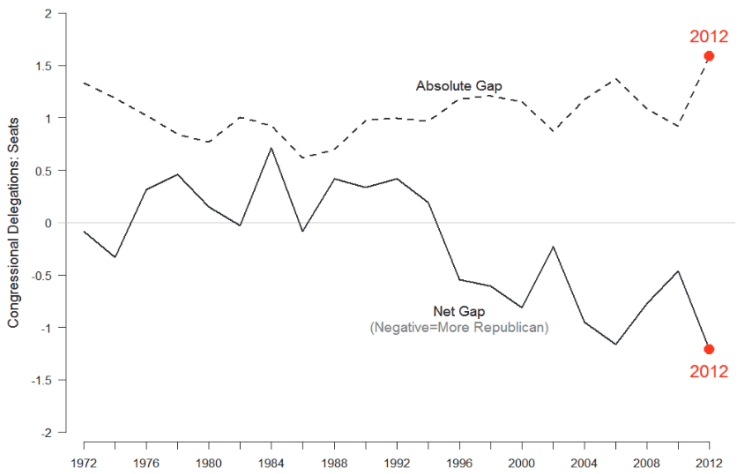
126. But as seen in the chart reproduced from Chen & Rodden above, there simply are not many precincts in Wyoming that lean Democratic; the same is likely true in Vermont and Rhode Island (oddly, efficiency gaps can present when the opposite of clustering occurs: When one party is politically dominant and partisans for the other party are so spread out that it is impossible to cluster them into districts). Democrats drew the Assembly in New York, while Kansas is a judge-drawn map. At the same time, maps that are generally thought to represent aggressive partisan maps, such as Arkansas and Illinois, appear as neutral maps under plaintiffs' standard.

127. Finally, the EG narrative is problematic for Wisconsin in particular. If the EG were a good measure of gerrymandering, we'd expect some sort of measurable difference between gaps to occur in redistricting years. In other words, we would expect that there would be natural variations over time, but overall we should see a "stepped" pattern to the chart of efficiency gaps over time, with the steps corresponding to redistricting years.

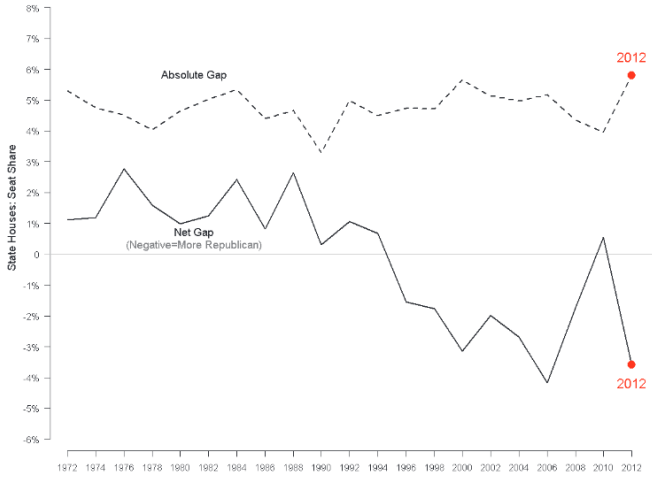
128. But this is not what we see in Wisconsin. As Dr. Jackman notes in Fig. 35, the time period from 1970 to 1996 shows relatively stable EGs in Wisconsin, regardless of who controls redistricting. But 1996 is the last year for which we see such balance. A substantial, fairly steady dropoff begins in 1998. Six of the nine post-1996 EGs appear to be large enough to be actionable under plaintiffs' theory. Worse, three of those six cases occurred under the 2001 redistricting, which resulted in a court-drawn legislative map. Indeed, it is not at all clear that the current map is appreciably different in terms of gaps from the map that was drawn by the court for the 2000s.

129. Instead, what we observe appears to ape national trends. The following two charts are taken from page 873 of the article from Drs. Eric McGhee and Nicholas Stephanopolous (which underlies this litigation). They show the average net and absolute efficiency gaps from 1972 to 2012 for Congressional and state legislative seats:

AVERAGE NET AND ABSOLUTE EFFICIENCY GAPS FOR CONGRESSIONAL PLANS, 1972–2012



AVERAGE NET AND ABSOLUTE EFFICIENCY GAPS FOR STATE HOUSE PLANS, 1972–2012



130. In both instances, we see the same thing: A clear pro-Republican trend in the overall net efficiency gap, but one that is not keyed off of redistricting years. Instead, the congressional chart begins a steady downward trajectory beginning with the 1994 elections (with the largest drop occurring in 1996), while the state house chart shows a dropoff beginning in 1990 (with a similar acceleration occurring in 1996). The EGs demonstrated in 2012 in both maps are similar to EGs that manifested in 2006, and the large drop-offs tend not to occur in

redistricting years. This suggests that the efficiency gaps we see are in large part due to exogenous forces, such as natural partisan clustering, rather than gerrymandering.

131. Efficiency gaps are growing in ways that gerrymandering has difficulty explaining, and are present in maps drawn by courts, by independent commissions, and by members of the opposing party. Given this, it is unclear why the existence of an efficiency gap would provide prima facie evidence that members of a party have had their right to vote diminished by state action.

IV. **Dr. Jackman's Imputation Strategy is Problematic**.

132. One of the great challenges of utilizing the efficiency gap is dealing with the problem of uncontested districts. Unopposed candidates will artificially inflate a party's popular vote total, and can skew the efficiency gap if they are disproportionally allocated to one party or the other.

133. Dr. Jackman's solution, when the data are available, is to use presidential vote share in the district (he has a different solution when presidential votes are not available). He notes that there is a tight correlation between the presidential vote share and state house vote share. Therefore, when state house vote shares are missing because of an uncontested election, Dr. Jackman substitutes presidential vote share from a similar district.

134. But there are two interrelated problems with this. First, we are not simply concerned with the r-square here (which, in lay terms, tells us how well knowing the value of variable A helps us to predict the value of variable B). We are also concerned with the coefficient, or the slope of the best fit line. If every percent increase in presidential vote share yielded a .5 percent increase in state house vote share, we would have a very high r-square, but we would not want to use this as a substitute.

135. Second, plaintiffs' own experts provide some good evidence suggesting that there may, in fact, be a systemic bias involved in imputing presidential results to state House results. Dr. Mayer demonstrates that there were many fewer unconstested Republican districts in 2012 than uncontested Democratic districts. Mayer at 40. Therefore, Dr. Jackman is imputing votes for far more Democratic districts than Republican districts.

136. In and of itself, this is not a problem if the imputation strategy is correct. But on page 15, Dr. Mayer plots a line that represents a 1:1 ratio between presidential and assembly votes for Republicans and Democrats. That is, if every ward showed the same number of votes for president and assembly, every dot would fall on the line.

137. Figure 2 demonstrates that imputation is acceptable for Republican wards in Wisconsin, since the dots appear to fall more-or-less on the line.

138. For Democrats, however, the dots systematically fall below the line, often creating differences on the order of 10 percent.

139. The net effect of this will be to skew the imputation. It suggests that too many votes are being imputed in wards reporting a high number of Democratic votes, which will skew popular vote totals. In other words, a ward with 100 votes for Romney and 900 votes for Obama probably should not be reported as a 90 percent Democratic ward with 1,000 votes cast. It should probably be reported as an 89 percent Democratic ward with 900 votes cast. The impact of this will be particularly pronounced, given that there are more imputations being performed for Democratic districts than Republican districts.

V. The Efficiency Gap Metric Ignores Important Factors, Such as Incumbency, Candidate Quality, Campaign Spending, and Recruiting Advantages.

140. When Dr. Mayer models his efficiency gaps, he notes that incumbency has a statistically significant impact on vote totals (this is one reason why he ultimately models results

without any incumbents). Other factors, such as candidate quality, campaign spending, and recruiting advantages are acknowledged as having positive effects on turnout. *E.g.*, Eric McGhee & John Sides, "Do Campaigns Drive Partisan Turnout?" 33 Polit. Behav. 313-333 (2010).

141. In other words, if one party has a disproportionately strong get-out-the-vote effort in place, or better candidates, or fewer incumbents, it can alter the popular vote totals and alter the efficiency gap.

142. In other words, there are important factors in addition to clustering that can alter the efficiency gap, and which the presented EG metric does not account for.

VI. Efficiency Gaps Are Sensitive To Slight Changes.

143. This might not be a problem if the Efficiency Gap was not sensitive to slight changes in turnout or voting behavior. But it is. Consider the following scenario: A Republican legislature redistricts a Democratic-leaning state. It creates five 90% Democratic districts, a 60% Democratic district, four 90% Republican districts, six 55% Republican districts, a 53% Republican district, and three 49% Democratic districts.

Table 2: Redistricting in Hypothetical State

District	D %	R %
1	10	90
2	10	90
3	10	90
4	10	90
5	45	55
6	45	55
7	45	55
8	45	55
9	45	55
10	45	55
11	47	53
12	51	49
13	51	49
14	51	49
15	60	40
16	90	10
17	90	10
18	90	10
19	90	10
20	90	10

144. In the first year after redistricting, if everyone votes as expected, we would see a -.06 efficiency gap, suggesting that the map was not a Republican gerrymander, under the plaintiffs' proposed standard.

145. But assume that we saw a national Republican wave in the first year, and Republicans fared two points better across-the-board. The map would result in a -.19 efficiency gap, which would constitute a gross "gerrymander."

146. The result would not have to be that dramatic, however. Assume instead that Republicans ran a slightly stronger candidate in district 12, and carried it. The efficiency gap would be -.109, and the map would be presumed unconstitutional.

147. This is not a wholly hypothetical concern. As discussed above, Dr. Mayer measures Act 43, sans incumbents, of having an EG of 11.69. But assume that through a modestly better GOTV effort, Democrats win 400 more votes in District 1, and 200 more votes in District 94 in the 2012 election. The EG falls by more than two points off these modest shifts, to 9.466.

148. In other word, the EG metric is sensitive enough that relatively small differences in the electoral outcome can make a difference between whether a map is presumptively unconstitutional or not. While this shift would not make a difference in terms of whether the Wisconsin map invited Court scrutiny, as a national standard, it almost certainly would in other states.

VI. Efficiency gaps do not mean that stability is created or that parties are locked out of the process.

149. Finally, it is worth noting that EGs do not correlate to partisan outcomes. That is to say, to the extent an equal protection violation derives from foreclosing a party from adequately participating in the political process, the EG does not reveal such a pattern.

150. For example, as noted above, even though New York has consistently had a pro-Republican efficiency gap, Republicans have never claimed control of the Assembly. The most severe Republican gerrymander, under the EG standard, came in 2002. Yet despite the fact that the EG never rises above -.078 under that map –every election results in an actionable Republican gerrymander—Democrats always controlled the Assembly by a large margin.

151. The Michigan 2002 map is counted as a Republican gerrymander, yet Democrats won the state House in 2006 and 2008. Likewise, the Michigan 1992 map is counted as a Republican gerrymander, yet Democrats controlled the state House throughout the decade.

152. The Colorado 1972 map is counted as a Republican gerrymander, yet Democrats won the state House twice under the map (in what was then considered a Republican state).

153. Likewise, even though California's 1992 map is counted as a Republican gerrymander, Democrats managed to win unified control of the legislature in 1996, 1998 and 2000.

154. This is not to say that partisan outcome provides a workable legal standard for analyzing gerrymanders. If anything, the foregoing merely proves the point that *forecasting* actual partisan outcomes over the course of a decade can be difficult. But when a standard for gerrymandering does not align with outcomes in a backward-looking analysis, it calls into question the utility of the metric as a standard overall.

CONCLUSION

155. The EG is a clever metric, propounded by some of the political scientists I hold in the highest regard. But as a legal standard, it is highly problematic. For a variety of reasons described above, it casts its net both too widely and not widely enough. Moreover, it effectively forces mapmakers to gerrymander to "fix" things that do not result from state action.

This the 2nd day of December, 2015.

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