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Behind the Lines:

Examining Proportional Representation in Redistricting

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Executive Summary

When a state is divided into legislative districts, critics will often accuse the map-drawers of drawing the maps for unfair advantage, or "gerrymandering." Sometimes, recently in Wisconsin for example, this accusation will be taken before a court to try to prove unfairness and get the maps thrown out. One of the standards used to try to define or assess gerrymandering is "proportional representation."

Proportional representation assumes that the percentage of aggregate, statewide vote won by one party should be the same as the percentage of legislative seats that that party wins. For example, if Democrats win 52% on average in statewide races, they should win 52% of seats in the legislature as well. But this standard has several problems.

- Depending on the geographic distribution of partisans, proportional representation might be literally impossible.
- It is notoriously hard for third-party candidates to win any races, even if they win a substantial minority of the vote.
- The Founders and our constitution could have enshrined proportional representation as a standard, but they chose not to. Instead, they recognized the importance taking into account the varying interests among communities within the nation and states.

This is especially important in Wisconsin, where one party's voters are disproportionately concentrated in two cities and where their aggregate percentage of the vote will generally be higher than the percentage of their winning candidates when districts are impartially drawn.

Introduction

In a lawsuit that recently came before the Supreme Court of Wisconsin, the judiciary struck down existing legislative maps and began exploring the question of what constitutes fairness or neutrality in this arena.[1] The idea of "fairness" is embraced by virtually everyone, including Wisconsin's Governor Tony Evers, who commented upon signing new maps into law, "When I promised I wanted fair maps — not maps that are better for one party or another, including my own — I damn well meant it."[2] What that means as far as maps go has been harder to nail down.

Since the beginning of the American republic, people have been accusing politicians of the unfair practice of "gerrymandering": the term was coined after Elbridge Gerry (1744-1814), then-Governor of Massachusetts, signed maps into law in early 1812 that were lampooned by political cartoonists.[i, 3] This isn't surprising: why wouldn't people, if they could, draw boundaries that benefit them and their political in-group?

But while it is easy to point to maps with squiggly and snaking boundaries and call them gerrymandered, actually defining the concept has proven far more elusive. It's been difficult for people to construct a standard definition that a map can be compared against to tell, objectively, whether it counts as being gerrymandered or not.

Most attempts have resulted in descriptive statistics. These measure some aspect of a map, but cannot fairly be generally applied: sometimes clearly non-gerrymandered maps are condemned by the statistics, and other times prominent flaws in their foundational design disqualify them.

Previous WILL research has zeroed in on one popular measure of gerrymandering, the "Efficiency Gap."[4] This report addresses a different measure, "proportional representation." We intend to explain what this statistic measures, why it is inadequate to define or indicate gerrymandering, and consider the broader questions it suggests.

Specifically, if proportional representation is trying to diagnose an abuse of map-drawers' power, then what does a *just* use of that power look like? What is the purpose of a legislative map?

Proportional Representation

"Proportional representation" compares the percentage of votes received by one party across the entire jurisdiction (typically a whole state) to the percentage of seats in the legislature that they won and, therefore, the proportion of legislative power they receive. It has been one way of trying to put a measurable number to gerrymandering since the very beginning. Governor Gerry's original map resulted in 29 members of his own party (the

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[i] It's been pointed out that a form of the practice even predates the eponymous Gerry, showing up in England.

Democratic-Republicans[ii]) elected to Massachusetts' state senate compared to merely 11 Federalists[5]—despite the Federalists winning more state senate votes statewide.[iii] In the Gerry example, the Democratic-Republicans won 72.5% of the races despite winning less than 50% of the aggregate vote.

Figure 1 Political Cartoon of the Original "Gerry-mander"

This statistic, however, comes packaged with the idea that the two numbers should be equal or as equal as practicable. The normative assumption behind proportional representation is that if a party achieves about 50% of the votes from a population, then it should receive about 50% of the legislative representation.

This is, popularly, one of the most-cited statistics to accuse a map of being gerrymandered. In September of 2022, the New Yorker ran a political cartoon that showed a personified gerrymandered district telling himself in the mirror, "Proportional representation is overrated—you are amazing!"[6]

There's something intuitive about this standard, but it has numerous problems that crop up right away.

[ii] At the time they just called themselves Republicans; however, to distinguish them from the modern-day Republican Party, which was founded in Ripon, WI, in 1854 and had no lineage to that party of Gerry, Jefferson, and Madison, the Founding-era party has been retroactively dubbed the "Democratic-Republican" party.

[iii] It's not clear, however, how many of the races were uncontested.

Proportional Impossibility

The biggest issue is that geographic distribution can make proportional representation literally impossible. Suppose that there is a state comprised uniformly of households with two Republican-voting parents and one college-aged, Democrat-voting child. No geographic subdivision will ever give that one-third of the population a third of the legislative representation.[iv]

The demographics of that hypothetical may sound unrealistic, but having a homogenous state is not. It's what Massachusetts actually looks like to a large extent. Here's how municipalities voted in Massachusetts for president in 2012, when former Governor Mitt Romney posted a relatively strong statewide Republican performance in the Bay State.[7]
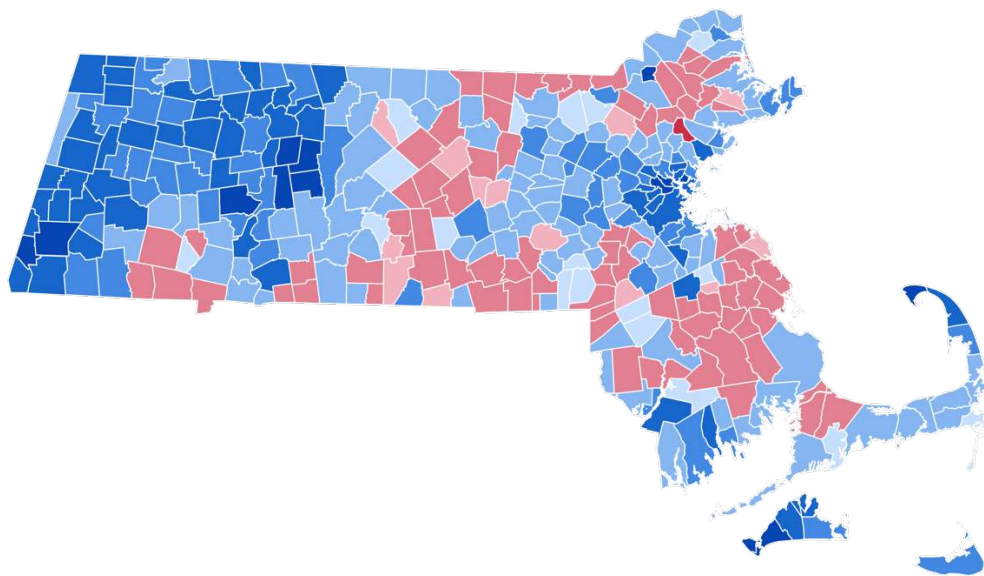

Figure 2 2012 Presidential Election Results in Massachusetts by Municipality

Romney's support was widely dispersed, even though it ultimately accounted for a sizeable 37.51% of the vote. Consider, though, Massachusetts' nine congressional districts. Proportional representation would dictate that with 37.51% of the statewide vote,[v] Republicans "should" have won 3 of the 9. Instead, they won zero, and considering the map that isn't really surprising. Democrats won all 9 races,[8] and it would be difficult to draw a map that made even one of those seats safely Republicans if you tried.[9]

[iv] You could make the hypothetical worse: households of two conservative parents and three liberal children would relegate 40% of the population to 0% representation.

[v] Republicans only contested six of the races, so we rely on their contemporaneous statewide Presidential vote share of 37.51%.

This is even echoed in the state legislature: Massachusetts' state senate, the birthplace of the "Gerrymander," is composed of thirty-six Democrats and four Republicans.[10]

Third-Party Difficulties

One of the other major critiques of proportional representation is that it takes for granted a two-party system and presumes which two parties those are.

Third-party candidates, although they reliably capture a meaningful percentage of American votes, have almost no electoral success to show for it. The most prominent Libertarians who have held office, such as Congressman Ron Paul,[11] Governor Gary Johnson,[12] and Congressman Justin Amash,[13] won their elections as Republicans.

Proportional representation would dictate that if a third party receives 2% of the vote, then it should win 2% of the races. In the Wisconsin State Assembly, with its 99 seats, that would translate to 2 seats. (In the 2018 gubernatorial election, slightly more than 2% of votes were cast for a third party, although they were split between several candidates.)

Again, the problem is that no district could be sliced off to be safe for a Libertarian, Green, or other third-party candidate. The single-digit percentage of third-party votes is nowhere so concentrated as to permit that.

Instead, a small fraction of voters throughout a jurisdiction—not forming a located interest group or correlating strongly with geography—deem it worthwhile to vote for neither of the two major-party candidates.[vi]

Proportional Representation's Usurper Existence

The biggest problem with proportional representation is that it upholds a standard (aggregate proportionality) that our political system never enshrined. The Wisconsin Constitution never required that the statewide percent of vote received by one party equal the percent of races that they win.

This is a crucial shortcoming, and one that also applies to the special case of proportional representation sometimes (i.e. on the rare occasion that it is invoked[vii]) called the "majoritarian criterion." This is the standard leaned upon heavily by the experts retained

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[vi] The story can look slightly different in Presidential elections, e.g. with Evan McMullin's Utah performance in 2016 or George Wallace's third-party showing in the Deep South in 1968. Intra-state, though, third-party votes are typically dispersed.

[vii] Grofman and Cervas (2024) speak of this standard as one that "is not yet as well known, "and then cite one of their own publications from 1981 as evidence for its longevity. Realistically, the majoritarian criterion's presence in the literature is small, but current events dictate that we address it here.

by Wisconsin's Supreme Court in the recent case *Clarke v. WEC*.[14] The majoritarian criterion does not require proportionality between statewide vote share and legislative seat share for any level of statewide vote share, but only at the 50% mark; that is, whichever of the two parties obtains a plurality of votes statewide must also receive a majority of legislative seats. Crucially, although this special case avoids the aforementioned difficulties, its grounding is nothing more than the same gauzy notion of fairness that supports proportional representation in general and that is addressed here.

It is true that the Founding generation believed that just political power derived from the consent of the governed—so much so that Thomas Jefferson privately speculated about the justice of putting the constitution to a vote every 19 or 20 years, i.e. for each new generation.[15] Nevertheless, the general idea that public opinion should translate immediately into political power was not embraced.

The Founders had a high respect for just how dangerous power was. This motivated their subdividing it: between different legislative, executive, and judicial branches of government; between the national government and the states; between different chambers of the legislature.

The Founders understood the danger of a majority tyrannizing a minority, and implemented a structure of government that required broad consensus for political power to be wielded. This is why, for example, a bill must pass the House of Representatives (who are elected in one manner) and then also the US Senate (elected in a different, expressly non-majoritarian manner) before being signed into law by the President (elected in yet a third way).

Many state constitutions explicitly call for single member geographic districts that must be contiguous and compact and follow, to the extent possible, the boundaries of political subdivisions. These might be seen as "non-majoritarian," although it is more accurate to say that it is a check on majorities since majorities should not be absolute.

Under this system, parties and coalitions need to obtain breadth as well as depth of support. It is not impossible to control a legislature by overwhelming support in densely populated areas, but geographic districts make it harder for densely populated areas to control larger but less densely inhabited regions. Parties are incentivized to cultivate a broader appeal.

The role of geography, unlike raw majoritarianism, was enshrined in our political system: states were guaranteed equal representation in the US Senate, while every state except for Nevada requires that districts be drawn to be contiguous.[16] In spite of the objection of some people that "land doesn't vote; people do,"[17] the specification of single-member geographic districts necessarily implies that where people live on that land matters.

Communities are defined geographically, i.e., by the proximity of constituents to each other. The geography of natural resources impacts communities of interest, the distribution of people affects their ability to politically organize, etc.

Geography not only influences what priorities people have, but impacts their relationship with higher office-holders. There's a ready analogy in how, with US Presidential elections, 48 of the 50 states[viii] have voluntarily determined by law that their votes in the Electoral College will all go to the candidate who wins a plurality of statewide votes. The fact that all of Michigan or all of Arizona is at stake makes candidates more likely to pay attention than if they could only ever try to move the needle from, say, winning 45% of a state's electoral votes to winning 55% of them.

From the other perspective, whole political subdivisions make organizing easier. If you were the county executive of Green or Calumet County, you would rather have one representative in the state assembly to coordinate with rather than two or three—whose interest, in addition, is pulled in more other directions.

Put simply, localism matters. Because geographic communities have an important and constitutionally guaranteed role, fracturing these communities or manipulating them to achieve statewide control with a proverbial 50.1% majority is not only frowned upon, it is frustrated by the contours of the law. Proportional representation ignores the geography on the ground. The experts' report in *Clarke v. WEC* is wrong to identify "fairness" with any special instance of proportional representation, even just the "majoritarian" one, because it promotes a standard that can only be reached by fighting the considerations required by our laws.[ix] Namely, only by breaking more county and municipal boundaries than is necessary could legislative districts be drawn that approach proportional representation.

Proportional representation, in spite of its unworkability (shown above), tries to take one democratic ideal and enshrine it. The problem is that proportional representation does not have that kind of status. In a lot of important ways, it was expressly rejected.

[viii] The exceptions, Maine and Nebraska, only have 4 and 6 electoral votes respectively. It's probably not an accident that the two that are open to splitting their Electoral College clout have relatively little to begin with, even if Maine is a reasonably competitive state.

[ix] Grofman and Cervas (2024) single out the redistricting plan that, by their own tabulations, splits the fewest counties and municipalities as a "stealth gerrymander" on the grounds that it does not conform to this metric—despite this being the natural result of geography. They further fight the strawman that "geography is destiny," which no one had advanced. Assuredly maps could be drawn with partisanship in mind to compensate for voters who have geographically concentrated themselves—at the expense of the geographic considerations actually given validity by the constitution.

The Proportional Representation Counterfactual

If proportional representation had been the target for a round of redistricting, then our system of government could have simply guaranteed that.

Take the example of a state subdivided into 100 state assembly districts. Each party could present a roster of 100 candidates of theirs, ranked by priority. Then, every voter in the state could vote for their party of choice, and each party would promote a number of candidates from the top of their list based on what percentage of the vote they received. A party that received, say, 44.8% of the vote statewide would see candidates #1 through #45 from their roster sworn into the state assembly.

This system would avoid the earlier problems of geography and third parties posed to proportional representation as a standard of a districted map. A third party that secured 1% of the vote would in fact win one of the 100 seats. If every family included one Democrat-voting child, then that 33% of the electorate would be represented in their 33 seats. If geography were not important, then it did not need to be included in the system of drawing contiguous districts on a map in the first place.

Instead, proportional representation was never enshrined in America's system of government. Indeed, the bicameral nature of the US Congress and almost every state's legislature installs an obstacle by design against that kind of raw majoritarian power—the kind of political system that the Founders would have been wary of due to its similarity to rule by a "mob."[18]

It's important to note that this system of government is not "anti-democratic." It is not opposed to the idea that majorities should be able to govern; it is designed to obstruct a majority's ability to abuse its power and tyrannize over a minority. It prevents a system where the voters in Milwaukee and Madison impose their will on the entire state, including the parts of the state that disagree with them.

That is why the system of government designed by the Founders, that is given shape by our national and state constitutions, does not simply empower some minority (which would be anti-democratic). It splits power so that for the government to act, there must be some alignment across different majorities: what the legislature has been able to effect across its two differently elected chambers, and how the executive and his appointees have gone about executing the laws passed by the legislature. That's not oligarchical, monarchical, or a different form of anti-democratic government; it's simply a republican one.

And, finally, it is worth noting that people exaggerate how insurmountable districts' partisan advantages are, even in scholarly work. In 2003, after the historically favorable 2002 midterms for the incumbent President's party, Election Law Journal published an article criticizing "The United States House of Unrepresentatives."[19] The article contended,

"In combination, these two features—extreme protection of incumbents and a powerful pro-Republican bias—might prevent Democrats from regaining control of Congress in this decade even if public opinion shifts heavily in their favor." It also favorably cites more research (from *Political Science Quarterly*) arguing the same case, viz. "Professor Gary Jacobson has written a superb paper arguing that, despite the continued close partisan balance in the electorate, structural features of the electoral system will make it difficult for Democrats to regain a majority in either house of Congress."

As the reader is doubtless aware, just four years later the Democrats took majorities in both houses of Congress, and increased their majorities even further two years after that. The apocalyptic predictions were valid for precisely one election cycle.

Proportional Representation and Wisconsin

Nevertheless, proportional representation casts a long shadow over the discussion of gerrymandering. This also applies to recent court cases concerning Wisconsin's maps.

Returning to the issue of geographic distribution: Massachusetts is a unique state. In general, Democratic voters tend to be much more concentrated than Republicans. In Wisconsin, for example, Table 1 shows the share of the vote received in the 2022 gubernatorial election by Democratic Governor Tony Evers and Republican challenger Tim Michels in wards that they won statewide.

Table 1 Average Vote Share by Winning Candidate, 2022 Election

Candidate	Number of Wards Won	Average Vote Share
Tony Evers	2,476	65.48%
Tim Michels	4,312	62.16%

First, it is interesting to note that Michels won nearly 2,000 more wards than Evers in his losing effort. This is indicative of the better performance of Republicans in less populous areas and the better performance of Democrats in more populous areas. More critically, in wards that Evers won, he had a margin 3.32% higher than in areas that Michels won.

Another way of looking at how concentrated Democrat voters are is to look at the percentage of Democrat votes provided just by Wisconsin's two most populous counties (and the home of the two most populous cities), Milwaukee and Dane. During the 2022 election, the same statewide ballot resulted in a Democrat winning the governor's race and a Republican winning the US Senate race. In Table 2, we look at the number of votes each got from Milwaukee County, from Dane County, statewide, and the percent of their statewide votes that those two counties contributed.

Table 2 Vote Totals from 2022 Wisconsin Elections

	US Senate Race		Wisconsin Governor Race	
	Mandela Barnes (D)	Ron Johnson (R)	Tony Evers (D)	Tim Michels (R)
MKE County	243,638	103,666	246,073	97,471
Dane County	231,818	68,228	236,577	62,300
Statewide Total	1,310,467	1,337,185	1,358,774	1,268,535
% from these 2 counties	36.3%	12.9%	35.5%	12.6%

Democrats in Wisconsin are heavily concentrated in Milwaukee and Dane Counties. Proportional representation might be possible, but it would effectively require maps drawn specifically with that one goal in mind—and even assuming that's possible, it's clear that that's not what the function of a map is. It is neither required by representative government as a matter of political philosophy, and it is not even one of the multiple requirements that the Wisconsin Constitution does impose on its maps.

In Article IV of the state constitution, it is required that "districts [are] to be bounded by county, precinct, town or ward lines, to consist of contiguous territory and be in as compact form as practicable."[20] Trying to align maps instead with an idea of proportional representation isn't merely a made-up goal; it requires ignoring municipal boundaries and drawing districts that are noticeably not compact. In other words, it involves replacing actual legal requirements with a usurping standard.

Some of the maps presented before the Wisconsin Supreme Court in the recent redistricting litigation show this. In a quest to increase the likely number of Democrats elected per map, petitioners submitted maps that scored worse on divvying up local governments compared to more fairly and compactly drawn maps that complied with the Wisconsin Constitution's requirements.

Namely, the Johnson intervenors' maps, both for the assembly and the state senate, split the fewest counties and also contained the smallest number of county splits.[21] (The difference between those statistics is that the latter number tallies every single time a county is partitioned by a district, whereas the other simply counts how many of Wisconsin's 72 counties are partitioned at all.) The Johnson intervenors' maps also split the fewest municipalities and contained the fewest municipality splits.

Again, because of Wisconsin's pre-existing political geography, some of the maps drawn to help Democrats need to disregard the local government borders to do so. The Wright petitioners' assembly map, for instance, includes one district (#80) that begins in Dane County, stretches across Columbia and Sauk, and ends in Juneau.[22] In the Johnson map, no

assembly district that contains part of Dane County winds up also reaching into a county that isn't even adjacent to Dane. Similarly, in the suburbs of Green Bay, one Wright district (#3) reaches outside of Brown County into Outagamie, Calumet, and Manitowoc. In all, the Wright map splits 47, compared to the 37 split by the Johnson assembly map.
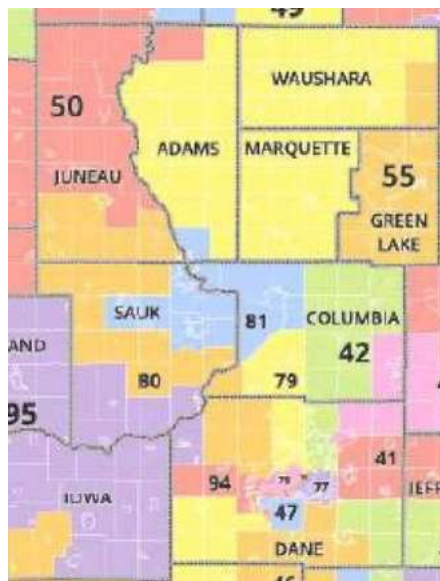

Figure 3 Wright Petitioners' District 80, in Orange

Conclusion

Proportional representation is a made-up goal. It is not how legislative districts were designed to function and American law does not try to judge maps as legal or fair on the basis of proportional representation. The proportional representation statistic calculates gross aggregate vote totals without any reference to geography, which is an essential component of how maps divide into districts. Despite its constant and enduring use in the redistricting discourse, proportional representation is a poor way of determining whether a map is fair, legal, or good.

Endnotes

[1] https://www.wpr.org/justice/wisconsin-supreme-court-overturns-republican-drawn-legislative-maps

[2] https://apnews.com/article/wisconsin-redistricting-republican-democrat-9c2677a09e48152df323fbf5c55611ef

[3] Jordan Ellenberg, *Shape*, 350.

[4] https://will-law.org/the-lefts-biggest-redistricting-crutch-examined/

[5] https://www.google.com/books/edition/The_Rise_and_Development_of_the_Gerryman/6o2HAAAAMAAJ?hl=en&gbpv=1&pg=PA73&printsec=frontcover

[6] https://www.newyorker.com/humor/daily-shouts/america-a-day-in-the-life-of-a-gerrymander

[7] https://en.wikipedia.org/wiki/2012_United_States_presidential_election_in_Massachusetts

[8] https://www.congress.gov/members?pageSize=250&q=%7B%22member-state%22%3A%22Massachusetts%22%2C%22congress%22%3A%22118%22%2C%22chamber%22%3A%22House%22%7D

[9] See also: https://projects.fivethirtyeight.com/redistricting-maps/massachusetts/#GOP

[10] https://malegislature.gov/Legislators/Members/Senate/PartyTypeId/asc

[11] https://en.wikipedia.org/wiki/Texas%27s_14th_congressional_district#1996

[12] https://edition.cnn.com/ELECTION/1998/states/NM/G/index.html

[13] https://reason.com/2019/07/04/justin-amash-declares-independence-from-republican-party/

[14] Grofman and Cervas 2024. https://acefiling.wicourts.gov/document/uploaded/2023AP001399/760087

[15] https://founders.archives.gov/documents/Jefferson/03-10-02-0128-0002

[16] Jordan Ellenberg, *Shape*, p. 387 n.

[17] E.g. https://www.msnbc.com/rachel-maddow-show/maddowblog/dean-phillips-presents-flawed-evidence-red-america-rcna135851

[18] E.g. Federalist 55, in which James Madison writes, "Had every Athenian citizen been a Socrates, every Athenian assembly would still have been a mob."

[19] Sam Hirsch, "The United States House of Unrepresentatives." *Election Law Journal*, II.2, 2003.

[20] Wisc. Const., IV.iv.

[21] https://acefiling.wicourts.gov/document/uploaded/2023AP001399/760087

[22] https://acefiling.wicourts.gov/document/eFiled/2023AP001399/751981