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Why partisan bias is fair.
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Abstract

Legislatures that are apportioned according to systems of single-member districts can produce seemingly unfair electoral results. A party that wins a majority of votes across districts may win only a minority of seats, if its supporters are highly concentrated into only a few districts. This problem of "political geography" is often taken to be a reason to favor Proportional Representation (PR). I will argue that this focus on partisan proportionality is mistaken. Firstly, metrics of partisan proportionality typically conflate the sort of political parties present in single-member district systems (majority coalitions) with the parties found in systems of PR (minority interest groups). Secondly, I use this model of parties (as coalitions) to show that disproportionate partisan legislative seat wins are not obviously unfair. Political parties that do not adequately formulate and characterize their platforms such that they have widespread appeal will do poorly in systems of single-member districts. Such systems provide parties with incentives to create platforms that are not dominated by local interests. This is a merit rather than a problem. Alternatively, sometimes particular localized interest groups do have genuine and intractable differences with the rest of the political society. I argue that such cases call for a form of "home rule," in order to permit groups to make choices in those domains for themselves. In those cases, a system of PR would wrongly subject the rest of the political society to the purely local interests of majorities.

One reason why partisan gerrymandering is thought to undermine democratic fairness is that it permits electoral minorities to direct policy over the objections of electoral majorities. A majority of individuals vote for candidates affiliated with some political party A, but the delegation of another political party B obtains control of the legislature. That, it would seem, flies in the face of the "one person, one vote" standard that is central to our modern conceptions of democratic fairness. This problem is popularly seen as stemming from the difficulty in designing stable institutions that provide incentives to draw "fair" district maps. However, it runs much deeper, and arises from the clearly *non-technical* decision to have districts at all. In fact, lines drawn by non-partisan or bipartisan commissions exhibit some of the same problems as those drawn legislatures with political intent.[1] Even if district lines are drawn in a neutral fashion, if the supporters of some party A are

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[1] In particular, it is unclear whether such commissions manage to make districts any more competitive (imperiling incumbents), which is one of the primary benefits of taking the job out of the hands of legislatures. For a discussion see Forgette et al. (2009) and Winburn (2011). Additionally, the sorts of partisan biases that I will discuss in this

more highly concentrated than supporters of some other party B, then A can win a minority of seats even if its supporters constitute a majority of voters. This can be taken to indicate that no system of single-member districts is fair. In fact, this and similar biases are often given as a reason to favor a variant of Proportional Representation (PR).[2]

In this paper, I will evaluate partisan proportionality as a metric of fairness in systems of legislative apportionment. This issue is of particular importance today, because partisan proportionality standards, including the partisan *efficiency gap* and related *partisan bias*, have been used as standards of fairness in a number of succesful lawsuits against (alleged) partisan gerrymanders.[3] These are set to be heard before U.S. Supreme Court during its 2017-2018 term.[4] Both metrics track the tendency of a districting system to produce partisan proportionality in election results. Consider the *efficiency gap*. A districting system has a larger *efficiency gap* in favor of some party B when the number of votes supporters of another party A expends per legislative seat won is greater than the number of votes supporters of B expend per seat. The districting system is more efficient at turning votes for B into seats than it is for A. This difference is the *gap*. Decreasing the efficiency gap of a single-member districting system will tend to increase its partisan proportionality. Generally, districts in which partisans are highly concentrated into a few districts, and win elections by a great deal, will result in a larger efficiency gap for that party. This then is another way to understand general criticisms against systems of single-member districts. They allow seemingly arbitrary differences in voter partisan concentrations to produce very different degrees of partisan efficiency in winning legislative seats.

I will argue that this focus on partisan proportionality rests on two mistakes, and this undermines the arguments against systems of single-member districts that rely upon it. Firstly, metrics of partisan proportionality conflate the sort of political parties present in first-past-the-post single-member districts with the parties found in systems of PR (often favored by opponents of single-member districts). However, these are extremely different. In a system of single-member districts, any political party that hopes to govern must generally form a majority coalition from a set of constituent interest groups *before* the election takes place. The difficulty of smaller parties winning a plurality in any district (using first-past-the-post elections) results in smaller parties playing almost no role in politics, except as spoilers to candidates from the large parties. However, in PR systems a party can win legislative seats with a relatively small portion of the total vote; these

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paper typically still exist, though are diminished, in states with non-partisan or bi-partisan election commissions. For instance, the *efficiency gaps* (Roughly speaking, the amount of partisan bias – see note 3) of such states range from close to zero (Arizona, California, and Washington) to substantial (New Jersey congressional districts and Idaho state legislative districts).

[2]For instance, see Christiano (1996, pp.224–231) for arguments along these lines.

[3]*Partisan bias* has long been advanced as a measurement of partisan fairness (see King and Browning (1987)), but the *efficiency gap* is relatively new. Stephanopoulos and McGhee (2015) argue that it has the merit of being possibly acceptable to the Supreme Court as a measurement of partisan gerrymandering. That is something that no measure up to this point has been able to accomplish. For a more technical discussion of the *efficiency gap* see McGhee (2014).

[4]One such case is an appeal of a successful 2016 lawsuit against the Wisconsin Assembly district maps (*Whitford v. Nichol*, 180 F. Supp. 3d 583). By statute, appeals of District Court cases involving legislative apportionment go directly to the Supreme Court.

seats give them the chance to play a role in a majority coalition. Therefore, whereas some parties (especially small ones) in PR systems may essentially be homogeneous interest groups, parties in single-member district systems are almost always coalitions of interest groups. Although parties in this case are still typically characterized by some dominant set of interest groups, minority interest groups can affect party platforms by joining the coalition before the election.

Secondly, I use this model of parties (as coalitions) to show that disproportionate partisan legislative seat wins (at least those that are not the result of partisan gerrymandering) are neither an obvious problem for fairness, nor a systemic feature of the political system. Rather disproportionality indicates one of two failures of the political system. Political parties may not adequately choose and characterize dominant interests such that they have widespread appeal. I argue that in many cases when it appears that a group can only be benefited by some interest that is supported by a very concentrated majority, some other formulation of that interest could in fact gain more widespread support. Alternatively, sometimes particular localized interest groups do have genuine and intractable differences with the rest of the political society. I argue that such cases call for a form of "home rule," in order to permit the group to make choices in that domain for themselves. In that case, a system of PR would wrongly subject the rest of the political society to the local views and interests of a very different group, whereas a system of single-member districts (without rights of home rule) leaves the government insensitive to the specific and legitimate needs of that group. Removing those local concerns from the purview of state or federal government avoids both of these problems.

1 Proportional Representation and Single-member Districts

If the only purpose of a legislative electoral system were to track the *partisan* preferences of the electorate, then the state-wide PR system would likely be the best method. However, there are also some obvious reasons to favor the use of geographically defined districts in a system of representation. One strength of single-member districts it seems is the relationship that is possible between a representative and her constituents. This likely less true for representatives at the federal level, who have hundreds of thousands of constituents (and millions in the case of the Senate). However, at the state level, it is typically quite easy to know one's political representative personally. When a representative only has a few thousand constituents, it is quite likely that only a few hundred people may routinely interact with the representative and those who work in her office. A regionally defined single-member district facilitates and motivates the provision of services, and also provides an easy means by which constituents can make their unique policy preferences and interests known.[5] I will not argue for this in detail here, but will assume that if problems representing partisan proportionality did not exist there would be some good reasons to recommend a system of single-member districts.

However, the problems with proportional representation are substantial for single-member dis-

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[5]In the U.S. at least, constituent services are a central part of a representative's job, and take up many of the resources of their office. See Mayhew (1974) for a discussion.

tricts. The first type of problem is more straightforward. The number of seat wins for a party in a system of single-member districts is a *sigmoidal* rather than linear function of vote-share.[6] Because of this non-linear relationship, a party that wins a small majority of votes can end up winning a substantial majority of seats. However, this does not constitute a *partisan* bias, nor will it produce an efficiency gap (it affects both parties equally) and so I will ignore it.[7] However, two other conditions must be met in order to prevent a truly *partisan* asymmetry or bias. Firstly, the differences in partisan *concentrations* between geographic areas must be balanced between the parties. However, some differences in partisan *compositions* must exist between districts.[8] This condition might also be met if individuals generally lack partisan voting tendencies, but not if those voting tendencies are geographically homogeneous. Secondly, any process that changes the composition of districts, whether through the movement of people (and birth, death, etc.) or the changing of district boundaries, cannot be correlated with partisan voting tendencies. That process must be wholly *independent* from partisanship. This maintains the partisan symmetry described in the first condition. It is possible that in some societies both of these conditions are (more or less) met, but they clearly are not met in the modern U.S.: there exist the natural occurrence of asymmetric partisan concentrations, and these asymmetries are magnified artificially through the use of redistricting methods that are themselves not neutral between parties (they are to some extent *partisan gerrymanders*).

When the concentrations of individuals voting for candidates within districts differs across parties, then some parties will enjoy disproportional representation in the legislature. Note that in a system of districts with equal populations, it is partisan *concentration* and not population *density* that produces a bias. A rural area can have greater partisan concentration, meaning a higher percentage of the party supporters per district, even though all residents live at much lower densities. There is nothing about the density of cities that lead them to have higher partisan concentrations; it is just a contingent fact about the political society. The effects of differing partisan concentrations are well known, and in fact forms the basis of a common argument against the use of partisan bias as evidence of gerrymandering.[9] Such partisan asymmetries can become particularly potent when one party caters to a greater degree to *geographically* defined groups than other parties. That party will be at a clear disadvantage. For instance, the Democratic party since at least the late 1960s has fostered a core constituency of urban voters, and today there are very high concentrations of Democratic voters in those urban areas. The centrality of this geographically defined part of the Democratic coalition (the "political geography") may make it more difficult for

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[6]See Engstrom (2013, pg.25).

[7]Sometimes there appears to be a partisan bias when, for instance, a majority party wins legislative seats out of proportion with their vote share. However, if this is the result of the non-linear relationship between vote share and legislative seats win, then both parties are treated equally when they get a particular vote share.

[8]If all districts have identical partisan compositions, such that the same partisan vote is achieved in every district, then the majority party will obtain complete control of the legislature as they win each district by the same margin. The district system reduces to a "General Ticket" system.

[9]For instance, see the recent dissent by District Judge Griesbach in Whitford v. Gill, 180 F. Supp. 3d 583 (2016). For a more systematic discussion see Chen and Rodden (2013).

the party to win legislative majorities, even before any added effect of partisan gerrymandering.[10]

It is not in dispute that significant efficiency gaps (and partisan bias) exist in many systems of single-member districts. However, do such gaps constitute a *malapportionment* to certain political parties? If the likelihood of such malapportionment did exist for any system of single-member districts then it would seem to imply that no such system of representation could be reasonably fair to all groups and individuals. This is not the case. To see why, it will be helpful to consider in more depth a case of malapportionment.

The malapportionment in many U.S. states before the judicial mandates of the 1960s were quite shocking, and their effects substantial. Before the *Rynolds v. Sims* decision mandated that apportionment in state legislatures be based upon equal populations, many states apportioned legislative seats in their upper houses based upon fixed geographic areas or other fixed political boundaries.[11] For instance, in the California Senate the 6 million residents of Los Angeles County were represented by a single senator, as were the roughly 14,000 residents of Inyo, Alpine, and Mono Counties.[12] This was not at all unique. Such malapportionment in upper houses was explicitly written into many state constitutions and was also indirectly the result of the political difficulty of undertaking decennial population-based redistricting.

A lack of proportionality may be thought of as a *deficiency* in a political system that is intended to make political decisions track public opinion in a particular way, but such a deficiency need not constitute a violation of democratic fairness as malapportionment does. Although my argument here is a moral one rather than a legal one, the legal reasoning surrounding the *Rynolds v. Sims* decision provides insight into why population-based malapportionment is unfair. In his majority opinion, Justice Warren argues that the *dilution* of an individual's vote can harm individuals in much the same way as the denial of the franchise. He quotes the 1950 Supreme Court opinion, *South v. Peters* by Justice Douglas:

> There is more to the right to vote than the right to mark a piece of paper and drop it in a box, or the right to pull a lever in a voting booth. The right to vote includes the right to have the ballot counted....It also includes the right to have the vote counted at full value without dilution or discount... That federally protected right suffers substantial dilution in this case. The favored group has full voting strength. The groups not in favor have their votes discounted.[13]

This notion of vote "dilution" can be made more precise in a number of ways. Perhaps the most common way in which dilution has been understood is in terms of a decrease in the likelihood that one's vote will be decisive in an election. The decisiveness standard utilizes the view that one only makes a difference in the results of an election when one casts the deciding vote for the

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[10]Interestingly, the dominance of the Democratic party in the House of Representatives from the 1954 until 1994 may have in part been due to district maps naturally *favorable* to Democrats.(Campbell, 1996)

[11]377 U.S. 533 (1964).

[12]Smith (2014, p.47). Florida, Illinois, Georgia, and several other states had similarly large differences in district sizes. See Ansolabehere and Snyder Jr. (2008, pg. 26-7).

[13]Cited in *Rynolds v. Sims* 377 U.S. 533, 555 (1964). From *South v. Peters*, 339 U.S. 276, 279 (1950).

candidate one supports.[14] The chance to do this is what has value. When one is placed into a district with large population, one has a lower likelihood of being the decisive vote. This reasoning can be extended to (equally populated) districts of differing partisan concentrations. When an apportionment "cracks" a community into many different districts with quite different policy interests or "packs" the members of that community into a single district, all of the individuals are harmed because their likelihood of being decisive in changing the election outcome has dramatically decreased.

Although the decisiveness standard seems like a natural place to find the harm in dilution, it does not explain this well, and so it cannot be used to explain harm in cases of partisan disproportionality either.[15] The primary fault of the decisiveness standard is that it limits the effects of voting to relatively immediate effects of a voters action (the election outcome). However, the harm of vote dilution is best understood as arising from long-term, systematic, and multifaceted harm to communities upon which individuals depend. And this harm can come before the election, when parties are forming majority coalitions, just as easily as it can come during an election. This is the sort of harm that, in section 2, I will argue is *not* necessarily present in systems of single-member districts that depart from partisan proportionality.

Dilution of the sort condemned in *Rynolds* causes a special harm. To see this it is helpful to look at the real effects of electoral institutions that systematically diluted the votes of individuals. Just before the "apportionment revolution" of the 1960s, after which equal district populations were required by the Supreme Court, the most substantial (non-racial) dilution of votes was experienced by urban and suburban voters. The votes of people in these districts were so diluted that representatives of a very small percentage of the population, typically those in rural districts, could secure majority control in the state legislature. For instance, theoretically the representatives of only 10% of (mostly rural) Californians could have secured a majority in the California Senate; this is a pattern that was replicated to a lesser degree in most U.S. states by 1960.[16] This led to an underfunding of urban infrastructure, schools and other services by state governments. Such funding shortfalls were substantially improved after the Supreme Court mandated apportionment in state legislatures according to population. In fact, although the partisan effects of the reapportionment were mixed (Republicans gained in some states and Democrats in others), the effects on

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[14]This concept of divisiveness is also shared by the influential Shapley-Shubik(Shapley and Shubik, 1954) power index (likelihood of being decisive in a coalition), the Penrose-Banzhaf index (Penrose, 1946; Banzhaf, 1965) (liklihood of a voter being desisive in a system of weighted votes), and other measurements of political power and influence.

[15]There are actually many problems with the decisiveness standard. Perhaps the most well known is the "voting paradox." If we vote simply in the hopes of being the decisive vote, then because this extraordinarily unlikely to happen (and voting has real costs) it is generally irrational to vote. See the classic presentation of this by Downs (1957). Most responses to this re-conceptualize what the act of voting consists in. For instance, Brennan and Lomasky (1997) argue that our votes are meant to express our political preferences rather than primarily wield power. Alternatively, the results of mass elections may provide useful information about what it is best to do; the judgments of entire public are better than the judgments of a few experts. (Landemore, 2013, chap. 6). Finally, Christiano (1996, chap. 5) reconceptualizes the motivations of voters. Instead of (Downsian) self-interested maximizers, they act in order to direct their society toward the most advantageous goals for *everyone*. Under such a view, voting is rational, because the possible the stakes are so high; the voter is concerned about the wellbeing of society rather than just herself.

[16](Smith, 2014, pp.287-290).

geographically based interest groups were profound. Cities and suburbs gained substantial benefits even though the *partisan* realignment was rather modest.[17] Reapportionment required that the existing partisan coalitions change, and they changed in favor of interest groups that had previously been marginalized (cities and suburbs). Such partisan realignments are relatively common in the U.S., and so are differences between state parties. Parties (in first-past-the-post single-member district systems) are really best thought of as dynamic coalitions of interest groups.[18] This will be key to my approach here. Population-based malapportionment allows for some local interest groups to be totally ignored by disrupting the incentives for parties to adopt platforms that cater to them. This is the case, even when those interests are shared rather widely across the state. And it allows other local interest groups – often electoral minorities – to dominate parties, even when their interests are not widely shared across the state. Neither of these dynamics are present in a system of single-member districts of *equal* populations, and so neither is the unfairness.

2   Interests and Parties

When partisan proportionality is the goal, a system of apportionment for single-member districts must be in the business of picking winners and losers. In a sense, it must be a partisan gerrymander, even if that gerrymander reduces partisan bias. This conception of gerrymandering, however, puts the typical view on its head. When Dixon (1968) famously claimed that "All Districting is 'Gerrymandering' " he wanted to make clear that gerrymandering must be defined in terms of partisan effect, rather than the peculiar district shapes that often bring it about (pg. 462). This has become the standard view that motivates result-based measures like the efficiency gap and partisan bias.[19] I think this effect-based view is not as attractive as it may at first seem. Various types of partisan bias can be the result of the neutral functioning of single-member districts that I will argue do not necessarily result in an unfair system. And although strangely shaped districts *can* respect communities of shared interests and concerns (see the "earmuff" 4th congressional district in Chicago that combines two Hispanic neighborhoods), they are often a symptom of a districting system that does not. Of course, "normally" shaped districts do not exclude the possibility of intentional gerrymandering, but in that case intent does. Gerrymandering occurs when those redistricting attempt to use the districting system to obtain partisan advantage, rather than use it to give representation to cohesive communities. It harms voters (rather than party members) primarily in how it diminishes the importance of certain types of interests (those that are supported by a particular party) in favor of others. Therefore both the wrongness of gerrymandering and the

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[17]For a discussion of both the effects on state policy of malapportionment before the 1960s and the changes that occurred after population-based reapportionment occurred, see Smith (2014, chap. 4) and Brunell and Grofman (2008).

[18]Although voter Party ID is one of the most stable types of attitudes over the medium term – see Converse and Markus (1979, pg. 46) for a nice summary of the relative stabilities of opinions about parties, leaders, and issues – we often see coalition transformations that take place at the time-scale of a decade or so. For instance, the realignment of Democratic and Republican parties just after the Civil Rights Act, during the "Reagan Revolution," and during 2016 Presidential election all constitute dramatic changes in party coalitions.

[19]For instance, see Stephanopoulos and McGhee (2015).

permissibility of partisan bias that is the result of neutral district maps stem from how interests are treated.

Systems of single-member districts factor in geography at several levels, and this is an inseparable feature of those systems. When individuals with particular interests are arranged in certain ways – for instance, more geographically concentrated than those with other interests – individuals can be put at a disadvantage in getting policies passed by the government *with respect to those interests*. However, unlike in a case of (population-based) malapportionment, a system of single-member districts does not disadvantage any individuals or groups with respect to their complete set of interests (or even *most* of them). Additionally, whether a disadvantaged interest is a factor in election outcomes is dependent upon contingent facts about the political system. All individuals have many interests, and some of those interests are more geographically concentrated than others; electoral disadvantage from these concentrations is primarily the result of malleable features of the existent political system. Therefore the partisan bias we see in elections, at least that not due to gerrymandering, can be thought of as resulting from choices by political parties rather than overall disadvantage of individuals. In this section, I will provide a model of this system and its normative implications. This will also explain why partisan gerrymandering is so harmful; it has the effect of forcing a political system into a certain form, distorting the normal promotion of community interests of widespread concern, thus creating permanent inequalities of political influence.

In the following example, I will consider three situations of political geography. First, I will consider a condition of symmetrical political geography; in this case all supporters of all politically salient interests have the opportunity to dominate the platform of a political party. Next, I will consider a case in which two of the salient interests are correlated with one another in the population. This places one of those interests at a clear disadvantage at being the dominant interest of a party, but it will be clear that this does not treat any *individuals or groups* unfairly. The adoption of the interest is disadvantaged, largely because another interest is capable of satisfying a substantial part of the community equally well. Finally, I will consider a case in which support for one interest is more highly concentrated than other politically salient interests. This can create partisan bias. I will argue that there is reason to expect that another (similar) correlated interest can be found that is of greater overall interest to the public. When such an interest cannot be found, then this provides reason for that interest to be the subject of local control ("home rule"). Therefore, we should come to the same normative conclusion in the last case as we did in the second case; there is nothing unfair about the disadvantage of a particular interest.

Up until this point, I have used a rather rough conception of equality. Although I have excluded partisan proportionality and equality of voting "power" (as the probability of being decisive), it will also be helpful to give a positive formulation of equality. One might think that any reasonable standard of democratic equality requires (for example) that an individual has an equal influence on influencing the platform of a *competitive* political party as any other individual. It appears that this is just the sort of political equality that PR systems permit. Every individual's vote contributes equally to the proportion of total votes a party wins, and thus influences the dynamics

of coalition building. Of course, no one can expect to be part of a governing coalition, but one can have expectations that one's vote has equal influence within the coalitions that are in contention to govern. Call this form of equality, *equal platform influence.* Insofar as party platforms are crucial to the eventual actions of governments, this form of equality is likely of great value to democratic citizens.

In the following examples, I will show that *equal platform influence* is not tenable. Particulars of a person's political views – their preferences for various possible political platforms – can leave them marginalized within a political system. There are many ways in which this marginalization can take place. Perhaps most important is the marginalization of individuals with political views that run contrary to the dominant political spectrum. In such a case, a competitive political coalition is unlikely to closely match their policy preferences. This occurs because given any current set of individual policy preferences, political parties and coalitions, only particular coalitions are competitive. I will argue that there is no significant *moral* difference between political marginalization due to the particular political context and that due to the political *geographic* context.

This I think should lead us to an alternative notion of equality from *equal platform influence.* Rather we can understand political equality in this context best in terms of a formal *neutrality* requirement. The political system must treat every alternative equally in the system's sensitivity to the political context; swapping the relational properties of two alternatives should also swap their relative influences on the dominant political platforms. This notion of equality fully admits the "inequalities" of influence that develop in systems of single-member districts, and explains why such a system still promotes political equality. I do not provide a direct argument for this here, but rather an indirect demonstration of sorts: starting with examples that do not seem to produce any unfairness and then showing that there are no morally significant differences between the obviously fair cases and the intuitively (at first past) unfair cases.

2.1   A Model

A simple formal model will provide some insight into the problems I will discuss here. Any winning *party* in the legislature must be one that can win a majority of seats. One specification of this is that parties seek to cater to various interest groups by way of a widely acceptable platform in hopes of obtaining a coalition that wins that majority. Individuals in the public (and by extension the aggregate of individuals in a district) have a vast set of interests. Those interests that are are part of party platforms are political salient, but it is important to remember that there are countless other interests that *could* be a part of such platforms. This framework, of individuals characterized by their politically salient interests and parties forming coalitions of (interest) groups, will form the basis of my example here.

There are a few basic components of the model (see Figure 1, pg. 11, for a visual representation):

Interests A set of *politically salient interests* $\{x, y, z\} \subset X$. X is the complete set of possible interests (whether politically salient or not). Given that individuals have many interests, X

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is bound to be very large. However, for simplicity I will constrain consideration to three interests. [20]

Interest Groups Define the political space as a (2-D) plane with each point identified by a mixture of individuals, and each individual with a particular top interest.[21] Each interest has a line of greatest concentration, beginning at a common origin; the *concentration* of individuals ranking that interest first is determined by distance from that line. The *relative* distances between lines define the (weak) ordering of those interests for each point on the plane. This ordering is the dominant *interest group* at that point. [22]

Districts The plane is partitioned according to a districting system with a finite number of districts of equal populations. Each district can be described by the *average* concentration of interests within the district, and consequently a single dominant *interest group*. I will say an *interest* dominates a district, when it is the first-ranked interest in the dominant interest group. [23]

Parties Each party is a composition ("coalition") of *interest groups.*

Party Platforms Each party is associated with a (weak) ordering of interests. For simplicity, I will assume that the platform is determined by the (weighted) aggregation of interests groups in the coalition using the standard Condorcet Majoritarian Method.[24] I will say that an interest dominates *a party*, when it is the first-ranked interest in the party platform.

Coalition Building Interest groups decide whether to join a coalition according to a process exogenous to the model.[25] However, so that I can say something about when a coalition can and cannot possibly form, I will assume that no interest group will join a party with a platform that (after the interest group has joined the party) ranks the interest group's (uniquely) most preferred interest last or its (uniquely) least preferred interest first.[26]

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[20]By 'interest' I simply mean something that is of value to individuals. This may be an objective interest or attitudes (or any other similar entities), and may be more or less abstract (for instance, interests in education funding or greater individual liberty).

[21]Individuals may also be characterized by orderings of interests, but this complicates the model.

[22]For instance a point that is furthest from the y-line, and closest to the x-line will have a greatest concentration of individuals concerned with x, second greatest concentration of individuals concerned with z, and least concentration of individuals concerned with y. Therefore, it will have the dominant interest group: $x \succ z \succ y$.

[23]Note that we are naturally disposed to view districts as always geographically defined, but they need not be. For instance, districts might be based upon other characteristics besides place of residence. In an "assembly of workers," for instance, the different income levels or professions may be placed in separate districts. What I say here about local or idiosyncratic interests will apply in those cases as well. There will be certain interests highly correlated with professions just as there are some highly correlated with geographic area.

[24]Note that a game theoretic or explicit bargaining model is likely more appropriate, though much more complex.

[25]For instance decisions of interests groups to join coalitions may depend upon the relative strengths of the interest groups (in terms of elected members) and the relative competitiveness of other coalitions. A minority group that is required for a coalition to have a majority will likely wield substantial influence over the platform. Such a minority group will have a high Shapley-Shubik power index. See note 14. Of course, decisions about the party platform are often a part of the negotiation process for the inclusion of interest groups.

[26]An interest group does not have a *uniquely* first-placed (or last-placed) interest when there is a tie between two interests at that position. This condition also applies Sen's Value Restriction to the domain of possible platform entrants, thus ensuring that every set of (admissible) interest groups will form a rational (non-cyclic) ordering. See
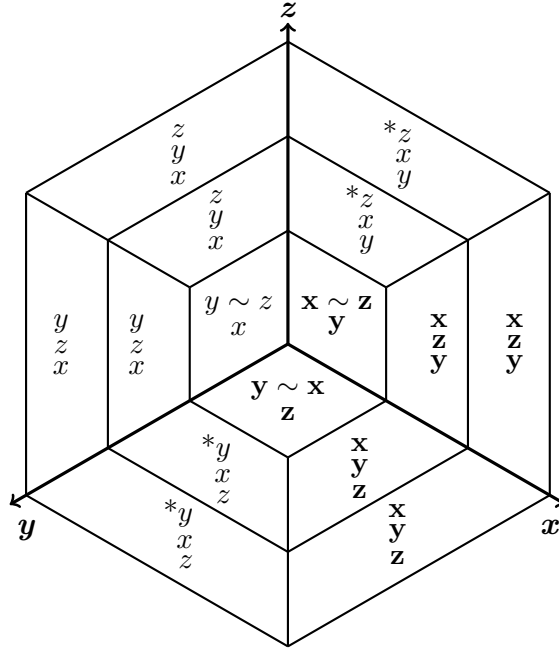
2.2 An Example

Figure 1: Symmetrical political culture

Figure 1 shows an electorate with symmetrical distributions of interests across the plane. The dominant interest group in each district is represented by a vertical order, such that:

$$x \succ y \succ z = \begin{matrix} x \\ y \\ z \end{matrix} \qquad\qquad x \sim y \succ z = \begin{matrix} x \sim y \\ z \end{matrix}$$

If we assume equal population distributions throughout the plane, then each interest group is perfectly balanced against each other. In this case, a simple districting system that partitions the plane into 15 single-member districts (of equal populations) maintains the perfect balancing of the interest rankings. Each type of interest is ranked first in $1/3$ (+1) of districts, second in $1/3$, and last in $1/3$. The members of each district are equally well positioned, with respect to all of their interests, for their interests to influence the formation of coalitions. However, this is only true *before* political dynamics start, and coalitions form. In this state of symmetry, something external to the model must perturb it for some coalition to obtain a majority. For instance, one set of interest groups may (for whatever reason) take the initiative to form the first coalition. Consider a case in which the interest groups ranking x first, are the first to form a coalition. As they only dominate 6 out of 15 districts (in bold), in order for them to form a majority party they must convince an interest group (or groups) dominant in two more districts to join. Which interest groups they capture will

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Sen and Pattanaik (1969). And indeed there is some evidence that actual electorates will satisfy a variant of this condition Regenwetter et al. (2006).

then determine whether a z dominated or y dominated party can be an effective opposition party (can threaten to gain a majority itself without having to take districts already capture by x). Only interest groups that do not rank x last are viable entrants to the coalition, and so there are 2 candidate interest groups, each dominating two districts: $z \succ x \succ y$ and $y \succ x \succ z$ (marked with '*'). Either are open to joining the coalition, because upon joining, they will change the party platform to rank their most preferred interest second, instead of last. Whichever interest group joins, its first ranked alternative (either z or y) can no longer become the dominant interest in a coalition; this fixes the dominant political spectrum. For instance, if the two districts dominated by $z \succ x \succ y$ join the x dominate coalition, then a coalition dominated by z can at most capture five districts. And this results in a platform with both z and y ranked first. The only coalition that can capture more districts (without taking interest groups from the x dominate coalition – changing the political spectrum again) is one dominated by y. An entirely fair political process seems to have resulted in the "marginalization" of those who prefer z. Although z can still have an effect on party platforms (improving the rank of z from last to second) by joining the majority party, they cannot dominate a party. This is inevitable once political coalitions begin forming. However, this is not in itself unfair, at least not if *any* political system is fair. The choices and relative success of other interest groups (and parties) will affect the governing prospects of my favored party, even when support for it is held constant. This is even the case for a PR system. Some of these effects can be quite arbitrary. For instance, if I am a supporter of the Greens and they obtain 10% of the vote, a (plurality) center-left party can actually decrease the chances of my representatives involved in (majority) governance if they release a platform more economically leftist than usual. Such an action may slightly worsen their plurality, but improve the chances of a smaller centrist party, giving them enough votes to form a coalition with the center-left party instead of the Greens. On the surface such dynamics seem quite arbitrary, but we can only declare such outcomes unfair at the risk of declaring essentially all possible political systems (including PR) unfair.

Of course, the *distribution* of the salient set of interests can affect the prospects of parties dominated by them. And this is the original source of our concerns about unfairness. One way in which the distribution can tend away from symmetry is if the support for two interests is more correlated than support for other interests. Parties dominated by those interests can, in a sense, "interfere" with one another. This can be represented by the relative orientations of the interests' lines of concentration. Consider Figure 2, in which z has become correlated with x. This is a change in z, and not in x, but supporters of x seem harmed by it, because it eliminates the ability of x to be the dominant interest in a party. At most, supporters of x can assemble a majority coalition in which both it and z are the dominant interests.[27] A similar loss is experienced by supporters of z On the other hand, supporters of y do not suffer a symmetrical loss of competitiveness.[28] This advantage has come about because of the new indifference between z and x in the districts between

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[27] At most a party dominated by x can capture districts dominated by $x \succ y \sim z$ (2), $y \sim x \succ z$ (1), $z \sim x \succ y$ (2), and $z \succ x \succ y$ (3); this is a majority of districts (8), but results in a platform of $x \sim z \succ y$.

[28] They can assemble the coalition: $y \sim z \succ x$ (2) $y \succ x \sim z$ (2) $y \succ x \succ z$ (2) $y \succ z \succ x$ (1) $y \sim x \succ z$ (1), to result in the platform $y \succ x \sim z$.

their lines of concentration, and the better position that z now has with respect to y. Any party dominated by x with these salient interests is a loser, though those dominated by y or indifferent between x and z are competitive.
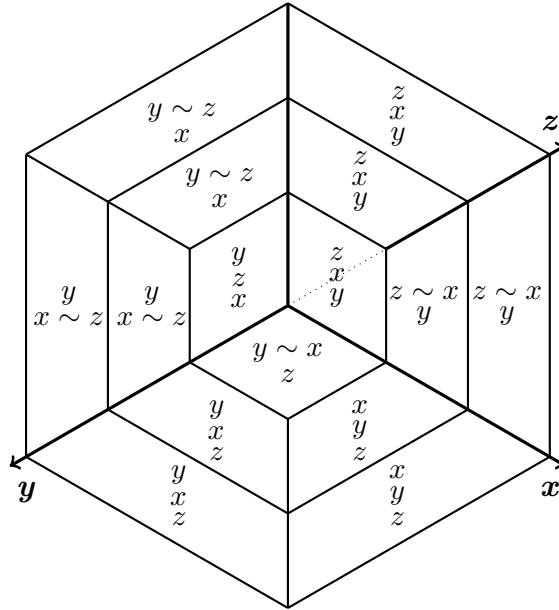

Figure 2: Correlation between z and x

Does the situation in Figure 2 violate a requirement of democratic fairness to supporters of x (and z)? I do not think so. One would be right to wonder whether this result is simply a formal artifact without any relevant interpretation. However, I think the situation in Figure 2 has a natural interpretation that will be insightful for the issue of partisan concentrations. In a political system that attempts to capture any geographic element of interests – and this is the point of a system of single member districts – correlations between interests, and between geographic locations and interests are relevant to the functioning of the political system. We need only look at the distribution of interests to know that there is some relationship between x and z that does not hold between either of those and y. The political importance of x suffers primarily because a key group of x supporters also support z. There are many possible reasons for the increase in correlation moving from Figure 1 and Figure 2. Undoubtedly they depend upon the content of those interests and the background social dynamics of the society. For instance, these might pick out interests in different types of funding sources for transportation: x an increase in income taxes that will provide more funds but tax the rich more, y a low gasoline tax rate that is expected to obtain fewer funds but tax the rich less, and z a higher gasoline tax rate (linked to use rather than income). The correlation between z and x may be primarily related to the ability of the funding source to pay for the various transportation needs. And although this is certainly an issue of state-wide concern, it is likely to be affected by local interests; some districts may be more urban, and so would expect to both use roads less and pay less in gas tax (supporting x). Other areas may be wealthier but suburban, and thus want to avoid higher income taxes (supporting z) but support funding for roads. We should

expect local differences in interests, and their relative concentrations, to have a significant effect on the political dynamics of the society. There is nothing particularly unfair about this, it is inherent in any political society in which the set of salient interests and how those interests interact with one another are free to vary.

However, the disadvantage of x in Figure 2 is not the result of a greater *overall* concentration of x supporters, but rather the fact that the concentrations of x supporters and z supporters overlap. A more troubling case occurs when some interest is highly concentrated in a particular geographic location, such that it is supported in a (seemingly) disproportionately few number of districts. This is the situation for supporters of z in Figure 3. In this example, z is ranked first in a total of 6 districts, (the greater concentration is represented by a thicker line of concentration) but is ranked last in all other districts. It cannot be the dominant interest in a majority coalition, because no district beyond the initial 6 is willing to join it. If it is assumed that all districts are of equal size, and there are some z supporters very sparsely spread over the other districts, then a party dominated by z can garner a majority of votes, but nonetheless win a minority of seats.[29] In other words, a party dominated by z is a near certain loser, because of where its supporters reside.

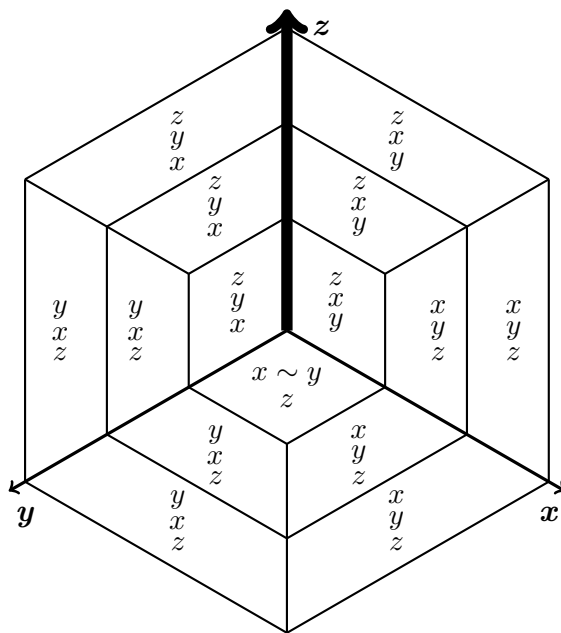

Figure 3: High concentration of z

From a majoritarian standpoint, the situation in Figure 3 is objectionable, because the minority who do not rank z first are able to direct policy at the behest of the majority who do rank it first. However, I think this ignores the inherent importance of geography to a system of single-member districts: representatives certainly do not represent trees, as Chief Justice Warren emphasized

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[29]Note that this does not mean that a majority of individuals rank z first. This model assumes that a party will get votes from some individuals who do not rank its dominate interest first. They rank the non-dominant interest first, but vote for one of the parties.

in *Rynolds v. Sims*, but they do represent *people situated within communities*.[30] One natural justification of any geographically based system of representation is that many of our interests are shared with others in our communities, simply because we must live with them. However when a highly concentrated interest like z is permitted to dictate the policies of government, a single community or region is able to dictate terms to all others. In that case, the results of PR are objectionable.

Our moral appraisal of this situation should depend upon the reasons why z's support is so concentrated. There are a few possibilities:

1. local interest in z

2. local ideology that brings about belief in z

3. local knowledge (or ignorance) that supports belief in z

4. gerrymandering

Evidence of gerrymandering, or other intentional manipulation of partisan district concentrations, provides an obvious reason to give *equal* weight to z as a basic condition of fairness. This supports PR. The others, I think, provide justification for z being given less weight in legislative decisions, though certainly some weight. Let us assume that intentional partisan gerrymandering is not at play in the creation of the districts in Figure 3. For instance, if z is funding for a massive mass transit system, and supporters of z are the only urban dwellers (z is of local interest), then it seems reasonable to question the focus of a majority party on interests that (arguably) have little impact on most of the state. This is the case even when z has some minimal support throughout the state (necessary for an overall majority). Of course, there may be a compromise scheme (for instance, allowing local control over some state transportation funds), but it is important that supporters of such idiosyncratic interests be forced to formulate such interests (I consider this below). The concentrated majority should not be able to hold the rest of the state hostage in order to obtain a compromise highly tilted in their favor, when their interests are idiosyncratic for the reasons 1-3. In those cases, z simply cannot be said to be in the public interest.

This argument is in many ways the compliment of arguments for federalism, which often highlight the superiority of local governments in pursuing their unique local interests. Likewise, primarily *local* interests should not be a dominant force in the public policy of the larger state. The disadvantage of locally concentrated interests and opinions insulates other communities from public policies that are of primarily in the local interest, rather than the provincial or national interest. In the debate about partisan symmetry and bias (and the related partisan efficiency gap I describe above) this point is largely ignored; it is not at all obvious that natural asymmetries in partisan composition are a deficit of district systems. Furthermore, this provides an explanation for why differences in partisan concentrations due to gerrymandering are so problematic from an *epistemic*

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[30]377 U.S. 533 (1964)

perspective as well as from the standpoint of justice. Gerrymandering produces deception evidence of idiosyncratic interests or preferences, when in fact genuine state-wide interests exist.

Ultimately this discussion leads to the consideration of whether a remedy should be used to aid the supporters of z in Figure 3. Certainly the *efficiency gap* of this map will be substantial, assuming that z is one of the dominant parties. There will be no such efficiency gap if x and y are the dominant parties (and there was none in Figure 1). Assume, for instance, that z and x dominate the two major coalitions (this defines a political spectrum). Supporters of y will primarily play an ancillary role, and in fact the boundaries of party control can be expressed without reference to y at all; that interest exists under the surface of the political system, affecting the ultimate form of party platforms but not able to dominate a party. This is the case even though just as many individuals rank it first as do either of the other interests. However, although such an arrangement would likely be stable in Figure 1, it is not in Figure 3, because the party supporting z is now structurally a disadvantaged. If that political system formed in Figure 1, it is natural to think that we should undertake a redistricting to bring the system back to its original balanced state. But in concentrating on the interests of these who support a *status quo* party (dominated by z or x), this ignores the interests of those (supporters of y) who would do better with new coalitions. In redistricting the map to maintain the $z - x$ *status quo*, we entrench that current issue dimension to the detriment of other interests that are more widely shared across the state (they are not idiosyncratic in the way that z now is). If this redistricting is done to reverse intentional partisan gerrymandering, then it seems justifiable; it is merely reversing past wrongs, and eliminating deceptive partisan concentrations. However, if it is done merely to maintain the *status quo* party system, then it seems to unjustly harm those who might be better served by some other system. It treats them unfairly. Given that any redistricting that favors z will constitute a choice of which interest to benefit, we need to have very good reasons for that choice. In the remaining of this section, I will argue that no such reason appears to exist.

Although any remedy that seeks to change district boundaries (so as to decrease the concentration of z) will likely unfairly entrench party control in z's favor, the formal framework I have presented here provides some insight about what might be done instead. There may still be a complaint to be had if concentrations create a permanent disadvantage for supporters of z. Simply because the disadvantage is over a subset of possible interests, instead of all of them, does not seem to eliminate the unfairness that is analogous to that seen in malapportioned districts. Districts of unequal populations (or representation) create unfairness in the satisfaction of entire sets of interests, but here the unfairness still applies to some (highly concentrated) subset. It still seems unfair to a particular group of individuals. However, there is reason to think that this apparent unfairness is neither permanent nor actually affecting only a particular group of individuals. The same disadvantage exists for supporters of other highly concentrated interests – and this will include *most individuals* – as it does for z, but the political salience of z makes it appear that its supporters have some sort of special disadvantage.

The solution to the concentration of z rests in the possibility of reformulating interests and
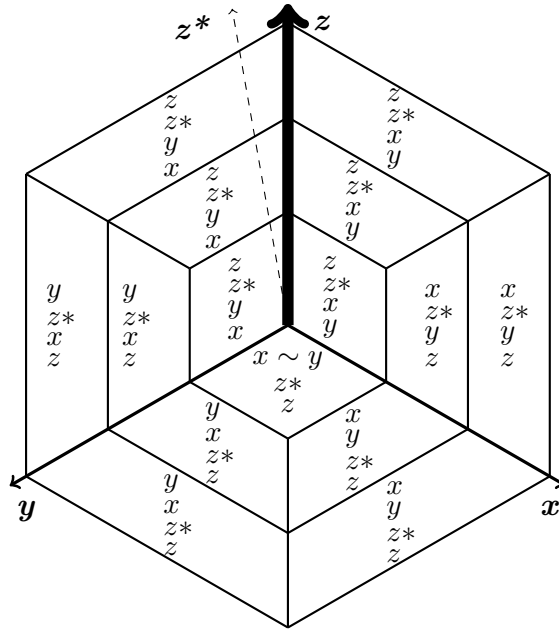
Figure 4: z and $z*$

finding common ground. If the community supporting z has enough in common with the wider state – and I will consider below what should be done when they do not – then it should be possible to formulate some interest $z*$ that is highly correlated with z but garners enough widespread support to be the proper basis of coalition support (see Figure 4). Because there is a large set of possible interests, and precise specifications of those interests, such commonly shared interests should generally be available. Returning to my example of transportation funding, z might be an interest in having the entire state pay the costs of major mass-transit systems within urban areas (just as it pays the cost of state highways all over the state). It is reasonable to see how support for this would be highly concentrated in urban areas. In this case, the set of possible correlated interests is vast. One option may be a policy that permits local jurisdictions to withhold a substantial portion of locally raised taxes to pay for local transportation infrastructure improvements. This would still benefit urban areas – it both has the most substantial need and funds from taxes – but it may also benefit suburban areas across the state that have significant tax proceeds and many local roads not normally funded by the state. This interest by no means brings about consensus – rural areas still object – but it generally supports interests that are not *simply* local in nature. It is at least better in this respect than z.

One key feature of this framework is the flexible nature of interests and parties; there are many possible formulations of interests that can dominate coalitions, and it is generally possible to bring about widespread approval without abandoning the original constituency of interest (in this case, supporters of z). It assumes that society generally supports cooperation between communities, and that there exists a set of interests that can be the subject of agreement. As a result, significant partisan bias that is *not* caused by gerrymandering can often be thought of as a failure of one party

to pursue interests of widespread importance to as great a degree as the other party does. Even the set of salient interests is highly contingent upon the current political context. It is typically possible to formulate new local interests that, if they were in the set of salient interests, would be given more or less weight by a system of single-member districts. For instance, consider an interest $y*$ (superimposed over y) that has a mirrored preference profile as z. Just as z may be a local urban interest (that state funds be devoted to mass transit), $y*$ may be a local *rural* interest (that a more generous system of farm insurance subsidies be implemented). it is conceivable that such subsidies could gain substantial support in rural areas, as well as some limited support in other districts, such that a party advocating them could conceivably gain majority of votes in an election. But a party *dominated* such a local interest would (I think rightly) be prevented from getting a majority of seats in a system of single-member districts. And it would be unwise for a party to feature such an interest prominently in its platform.[31]

An alternative view of interests takes their constituencies to be coarsely defined, such that even significant changes to their descriptions either lead to few changes in support or abandonment by the original constituency. If this is true then it inhibits the ability of any party to formulate interests that both satisfy the original supporters of z and the larger set of districts. The risk of permanent disadvantage creeps in once more. This is a special case in the model I have been describing here, in which there is intractable disagreement between two (or more) distinct populations on entire range of salient political interests. Whereas the standard model I have used specifies that concentrations of interests fade gradually (approximately linearly) as distance away from the line of highest concentration increases, in certain cases this might approximate a step-function instead. This is the form that interest in z takes; outside of the 6 core districts, interest in z drops off dramatically. As I have said, this constitutes a primarily local interest. However, when such an interest cannot be reasonably reformulated to bring about more agreement (smoothing out the step function), then that interest will have a limited role in governance. If the interest is vital to the well-being of those constituencies, then this will be very damaging to that group.

Genuinely vital and unique local interests (those that cannot be reformulated into interests with broader support) are good candidates for local *autonomy*. This is a justification for "home rule" rights, which permit a community to decide matters about which it likely differs significantly from other communities. This is in part why cities, in particular, have often been granted substantial home rule powers. They frequently face problems that are not shared by their suburban and rural neighbors. The distribution of such powers in cases of sharp differences in interests, dramatically reduces the risk that there is some interest z in the set of salient *state-wide* political issues. As I state above, differences in views and knowledge about policy also provide reason to give local control over those issues. Political experiments attempted by relatively homogeneous local groups have the merit of providing a demonstration of a policy solution without forcing others to go "along for the ride." The geographic basis of a system of single-member districts exposes the riffs in

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[31]Note that this framework by no means prevents logrolling and other district-specific side-deals used to gain and keep coalition members. This will undoubtedly will be part of the exogenous process that determines which coalitions districts end up joining; the model only determines which coalitions they *cannot* join.

society, and the appropriate areas for the distribution of local authority, in ways that PR systems typically fail to do. If in U.S. states a great deal of diversity exists *between* communities, rather than between interest groups distributed geographically evenly, geographically defined districts can act as appropriate cleavages of the political society. The substantial effects of redistricting after *Sims* on suburban and urban communities (even without significant changes to partisan compositions) indicate that many interests are geographically based. Furthermore, the use of geographically defined districts itself rests on this. It is a separate issue as to whether this form of representation is valuable, but the existence of partisan bias does not create any additional reason to reject such a system.

3   Conclusion

A basic assumption of partisan proportionality standards (like the efficiency gap) is that political parties generally reflect the appropriate social cleavages that should be represented within legislatures. I have doubts about this, at least when parties are primarily coalitions rather than interest groups. Remedies to partisan biases and efficiency gaps, without clear evidence that they are correcting intentional gerrymandering, risk margionalizing some groups as they retrench the dominance of others. This does not obviously improve the fairness of the system, and certainly not in the obvious way that a requirement of equally populated districts does. However, when one party is able to repeatedly obtain a majority of legislative seats with a minority of votes for its candidates, this is a real problem. I do not intend my discussion here to deny that. Rather, I deny that failures of partisan proportionality *themselves* are obviously unfair to voters, nor a straightforward metric of gerrymandering.

There is an open question as to what values should guide the design of legislatures. More complex institutional designs are capable of integrating a more diverse set of values, though will satisfy any particular one less well. The introduction of this complexity is itself a choice about institutional design; it prevents a singular type of value from being given precedence over others. Perhaps legislative bodies should satisfy a unitary value. A common view in political theory states that the unique role of a legislative body is to transform the expressed policy preferences (or interests) of the public into legislation.[32] According to this view, less democratic elements of the government (such as the judiciary or executive) may be given some veto power over the legislative powers of the people, but within the *legislature* itself there should be no long-term departure from majoritarianism.[33] If this is the case, then a unicameral legislature that practices something like a proportional election method would undoubtedly be the best choice. The composition of the legislature would closely match the partisan composition of votes, at least before a majority

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[32]This view is pervasive in political theory. It is what Hannah Pitkin calls the "mandate" view of political representation. See her *The Concept of Representation*, especially chapter 7. It is also a background assumption of social choice theoretic analyses of electoral systems, at least when the intention is to see how chosen policies are ultimately linked to the preferences or interests of the public. It is this sort of view that Riker (1982) labels "populism," and which he argues is untenable.

[33]Even non-majoritarian legislative procedures (like the committee system and supermajority rules) are intended only to slow down a majority. The idea is that eventual a majority should have its way.

coalition is formed. However, what I have argued in this paper is that legislatures are not merely in the business of forming policy that is a particular function of the public's collective *partisan* preferences, *as they are currently organized by the dominant partisan political system.* Rather they should also be in the business of satisfying an entire range of interests. Because the political dynamics of a society can greatly affect the sorts of voting preferences that are expressed by the public, political systems should facilitate the interests of the people to affecting the shape of the political system (parties and their platforms) itself.[34] There is value in satisfying both expressed voter preferences for parties as well as latent interests.

A bicameral legislature may serve the role of promoting both expressed partisan preferences as well as latent interests. Consider a bicameral state legislature, in which representation in the upper house is determined much as it is today in the U.S. (through a series of single-member district elections), though the membership of the lower house is determined by some variant of a proportional representation system. Several different mixed legislative systems may also function in this way, satisfying a mixture of types of interests.[35] In other words, proportionality does not constitute the sort of overriding or core value that necessitates a legislative-wide remedy when it is not satisfied. However, a bicameral legislature is able to accommodate it as one important legislative value among several.

I think my discussion here also provides some insights into the appropriate reaction of losing parties and democratic systems in the face of significant partisan biases. When bias is due to partisan gerrymandering, meaning districts violate the neutral standards for forming districts, then there should be legal recourse. An electoral system that is *intentionally* constructed to significantly disadvantage a group, because of the specific beliefs or interests it has, fails basic standards of democratic fairness. People are not treated equally by the government on account of their past political activity. In this respect I agree with the relatively mainstream view of partisan gerrymandering in American law, that extreme intentional gerrymandering violates requirements of democratic fairness.[36] However, election results (such as those used by the efficiency gap) are not sufficient as a means of measuring it. This, I think, leaves its measurement as a significant difficulty.

However, when a party's disadvantage is primarily due to the concentration of their supporters into a few districts, and this is not due to intentional gerrymandering, then a different strategy must be taken. The most obvious solution is for the party to propose a platform that is desirable to people residing across many different communities. As I've argued here, this may only require

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[34]The ideas of political leaders, and how those ideas are combined into party platforms, have substantial impact on the views of the public (Zaller, 1992). However, public sentiment also plays a vital influence on the construction of party platforms and policies (Page and Shapiro, 1992).

[35]For instance, the method used to elect members of the German Bundestag awards about half of the seats according to a ballot between party lists, and about half of the seats awarded by separate ballots within geographically defined districts. Any candidate winning in a district is assured a seat in the legislature (extra "overhang" seats are added to the legislature if needed), and the party list ballot is used to maintain a rough partisan proportionality within the legislature.

[36]For instance, in 2006 a majority of the U.S. Supreme Court in *Latin American Citizens v. Perry* (548 US 399) found that partisan (like racial) gerrymandering could constitute a violation of the 14th or 1st amendment rights (though only a plurality determined that it could be reasonably measured). Additionally, since *Mobile v. Bolden* (446 U.S. 55, 1980) intent has generally been seen as a key ingredient of challenges to partisan gerrymanders.

a reformulation of the highly concentrated (local) interests. One malady of party politics is that party platforms are often relatively insensitive to local (or state-wide) political dynamics. Consider the society presented in Figure 4. If in most of the country one of the two major parties places emphasis on fulfilling z (and even rejects $z*$), then it will do poorly against a party that emphasizes either x, y, or $z*$ in that state. Rather, it has a choice of two strategies. It could focus on either x and y and seek to include z, though not as the highest ranked interest (on aggregate). Although supporters of z may not be able to force the entire state to pursue it, they have other ways to influence the political process. Through coalition building, they can force parties that focus on x to rank z at least second. They might also find interests highly correlated with z that have widespread approval across communities. This is another way of think about political and social change. If the boosters of z are able to convince others that similar pro-$z*$ policies actually satisfy a wide array of popular interests, then they may fundamentally transform the political system by changing the set of salient issues. People do not only wield power through their votes. They also wield power by finding new common ground with their fellow citizens and transforming the set of options between which they can choose.

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