University Honors Theses   University Honors College

5-25-2018

Gerrymandering and the Courts: Evaluating Judicially Manageable Standards

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Chapter One: Introduction

Elections are the cornerstone of democracy in that they help to cultivate legitimacy, act as an accountability mechanism, and allow constituents to communicate with elected officials. However, if an election is not seen as fair it seriously threatens all of those key features. It has caused many people in the past two decades to question how fair US elections are. One criticism is the effectiveness of the Electoral College. This occurred following the 2001 election that culminated in the case of Bush *v. Gore* and once again with the 2016 election of Donald Trump where he lost the popular vote. The Electoral College is seen as problematic but one systemic issue that has recently been garnering more attention is the lead up to the election with how electoral districts are drawn.

An article that sought to measure 54 countries' level of gerrymandering, found that "the United States and Malaysia, using majoritarian electoral system, are, by far, the countries with the least impartial district boundaries" (Coma and Lago, 2016, p. 100). The focus of the article was analyzing the neutrality of a country's electoral boundaries. If the electoral districts of a country are not impartial it is possible that they were gerrymandered, manipulating boundaries with the intent of creating a desired result that typically favors a political party or a certain class of people. The article does not detail how these boundaries are created but there are many factors that can contribute to a map seeming impartial such as a politically motivated party drawing lines, unclear map criteria, or even the political geography of a specific region. Regardless, it can be harmful as it can weaken a minority population's vote, altering potential outcomes, or ensuring the reelection of incumbents.

2017, however, can be seen as a potential turning point for electoral maps in the United States with the Supreme Court case *Gill v. Whitford.* In 2016, the United States District Court

ruled in *Whitford v. Gill* that the map in Wisconsin "constitutes an unconstitutional partisan gerrymander" (2016, 843). The plaintiffs assert that it "treats voters unequally, diluting their voting power based on their political beliefs, in violation of the Fourteenth Amendment's guarantee of equal protection," and "unreasonably burdens their First Amendment rights of association and free speech" (*Whitford v. Gill*, 2016, 855). There are many questions raised in the case, but the one I argue should be focused on is if judicially manageable standards exist for the Supreme Court to evaluate this case under, and which standards will be the most effective.

The Supreme Court has tried gerrymandering cases in the past, but most of those have addressed racial rather than partisan gerrymandering[1]. Partisan gerrymandering can be harder to show because of a multitude of reasons. One of those is that racial gerrymandering is held to the highest level of scrutiny (*Shaw v. Reno,* 1993, 643). Though an argument may be made that voting is a fundamental right, people in biased districts are not being prevented from voting. Additionally, party affiliation is not an immutable characteristic and in "swing states" it may be possible for results to shift each year.

Gill v. Whitford's importance lies in the fact that it asks several questions of the court. One of those is how to determine if bias exists. It is one thing to say that elections appear biased or unfairly advantage one side. It is another to have a way to support that argument with facts to show possible outcomes. My research will look at what is the most effective way to determine of there is bias present in a map. To do this I will first focus on the history of partisan gerrymandering cases and the Supreme Court. Next, I will lay out my evaluative framework for assessing different methods. Then I will review each of these in turn before coming to my final

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[1] *City of Mobile v. Bolden,* 446 U.S. 55 (1980); *Shaw v. Reno,* 509 U.S. 630 (1993); *Miller v. Johnson,* 515 U.S. 900 (1995);

conclusion. There I will show that judicially manageable standards exist and advocate for the most appropriate methods to be used.

Baker v. Carr

Baker v. Carr is the case that is precedent for modern redistricting law today. Decided in 1962, it was the case that allowed the courts to consider legislative apportionment on the merits. This case challenged the constitutionality of a Tennessee apportionment law that was created in 1901. The appellants in this case were voters and they argued that the state was "arbitrarily and capriciously apportioning the seats in the General Assembly" because the population had shifted so dramatically from when the law was passed to the time of the court case (*Baker v. Carr,* 1962, 192). It is important to note that the Supreme Court did not decide on the issue of Tennessee using the 1901 law, but rather they decided whether the issue had standing.

Why this case is seen as a landmark is not at all what it says about legislative apportionment, but rather what it says about political question doctrine. The court addresses two main points in this case: first is subject matter jurisdiction and the second is justiciability. On the former point the court finds simply that a federal court has subject matter jurisdiction because the appellants are challenging the constitutionality of a law and the district courts are allowed to rule on these issues (*Baker v. Carr,* 1962, 199-200). Additionally, they do touch on relevant precedent where the court has decided on redistricting cases in the past. The appellees contend that the Court has previously decide that they do not have jurisdiction for redistricting cases. However, the Court does say that the appellants misinterpreted the cases and there is not reasoning to say the Court does not have subject matter jurisdiction.

The latter point in this case is justiciability. This is the crucial point of the case that makes it important today. The appellants in this case claimed that their right to equal protection

of the law was violated. However, the District Court and the appellees claimed that in a cases involving apportionment it can "involve no federal constitutional right except one resting on the guaranty of a republican form of government" (*Baker v. Carr,* 1962, 209). The Supreme Court found this false. Instead they focused on what the political question doctrine was and whether this case fit under any category of the questions they cannot hear. There are six categories of questions that the court listed out, but this case simply asks the Court to decide whether or not the action is discrimination based on an arbitrary action rather than a policy. They found that this question is political in nature, but is not a political question (*Baker v. Carr,* 1962, 227).

The implications of this case are fairly widespread. The most immediate application of this is that the Supreme Court can hear cases on redistricting, but it also set in place clear guidelines for whether a case addressed a political question or not. The purpose it serves in *Gill v. Whitford* is not necessarily the precedent the Court will be relying on in the case, but rather it provides us with historical context. Questions of legislative apportionment can be difficult for the Court to decide upon—it's a realm that hasn't been touched. Given that it took until 1962 to even be able to consider these questions justiciable, it is not surprising that it took so long to hear questions of partisan redistricting.

Reynolds v. Sims

Tried two years later *Reynolds v. Sims* established how the court was to deal with gerrymandering cases and how people should be represented in the legislature. This case was able to be tried after the decision in *Baker v. Carr.* However, unlike *Baker* this case set forth an actual guideline to be used in redistricting cases. This case dealt with how electoral districts were divided in Alabama. The state constitution required at least one representative per county and one state Senator. However, there were major differences between the counties in terms of

population. Voters from Jefferson County, a county with 41 times as many voters as another district, said this kept them from participating in a republican form of government (Reynolds v Sims, 1964, 541).

The Supreme Court upheld the challenge to the law as they found it violated the Equal Protection Clause. This is because the clause demanded equal representation in the legislature for all citizens and that direct representation was "a bedrock of our political system" (*Reynolds v. Sims,* 1964, 564). Importantly, this case also established the one person one vote doctrine that is used in many cases.

One thing to note about these cases is that they specifically address the number of legislators and how they are apportioned. These cases do not deal with how a map is drawn. *Reynolds,* though, presents the standard that the lower courts as well as the Supreme Court uses when deciding if a plan is constitutional or not. This is commonly known as one person, one vote that the court tends to prefer. In many cases this doctrine is the one that is applied whether it deals with racial gerrymandering or partisan gerrymandering.

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Davis v. Bandemer

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Davis v. Bandemer was the first case that looked at claims of political gerrymandering. This case happened more than two decades after *Baker v. Carr* in 1986. It dealt with the 1981 apportionment of the Indiana General Assembly that was created under a Republican majority. The boundaries of the districts, as well as election results, appeared odd to Democrats. There was a mix of single and multi-member districts— with no rule followed to determine the difference—, little relation between Indiana's House and Senate, and the translation of votes to seats did not seem entirely proportional (*Davis v. Bandemer*, 1986, 114-115).

The District Court found the plan unconstitutional, but it was not affirmed in the Supreme Court (*Davis v. Bandemer,* 1986, 113). That is what complicates the precedent for deciding partisan gerrymandering cases moving forward. In the case, they did hold that political gerrymandering was a justiciable question. Their reasoning had two main parts. First was that the Court has "consistently adjudicated equal protection claims in the legislative districting context regarding inequalities in population between districts" (*Davis v. Bandemer*, 1986, 118). This goes back to *Reynolds v. Sims* and looking at the one person, one vote principle (*Davis v. Bandemer*, 1986, 119). Second, the court did say that it would intervene in cases that deals with race. If districting is designed to "minimize or cancel out the voting strength of racial or political elements of the voting population" then it would also be a constitutional issue for the court to address (*Davis v. Bandemer*, 1986, 179). Essentially, the court does find that questions of political gerrymandering are justiciable. They look at the reasoning used in *Baker v. Carr* and find the argument similar in this case. They also revisit *Reynolds v. Sims* to show that the types of claims in Baker were resolved in Reynolds in determining how a court rules on district sizes and proportion. They go on to say in this reasoning that they will not rule that claims of equal representation are nonjusticiable.

Though the court did find the claim justiciable, they did not find the claim to be in violation of the Equal Protection Clause. They do hold that the District Court was right in saying that the apportionment plan was discriminatory in nature, but there needs to be proof beyond misrepresentation (*Davis v. Bandemer*, 1986). The plan may be biased, but no plan is perfect and elections are political in nature. Especially since the focus was on the state as a whole and not one specific district where Democrats were disadvantaged making it much harder to prove. The

Court said that it is hard to show that Democrats were excluded rather than they failed to get members of that party to show up to the polls.

This case complicated matters for determining if partisan gerrymandering exists or is harmful in a state. Though, the Court ruled that political gerrymandering is justiciable, it did make it harder for those bringing forward a case to show harm. This case does say that the way the map was drawn was discriminatory, but it did not have enough of an impact to show that it violated the Equal Protection Clause. The tension exists because the Court does give examples of how a political gerrymandering claim may be proven, but it provides a barrier moving forward to challenging the constitutionality of such claims. The Supreme Court may say that these questions of representation are justiciable, but up to now they have not shown that they are willing to declare these claims unconstitutional.

<div align="center">Vieth v. Jubelirer</div>

Vieth v. Jubelirer is standing precedent for claims of partisan gerrymandering. The case is similar to *Davis* but it raises questions about Congressional apportionment rather than state level apportionment. Following the census in 2000 the Congressional delegation from Pennsylvania was reduced by two members, while the Republicans had control; it was alleged that they manipulated the map to disadvantage Democrats (*Vieth v. Jubelirer,* 2004, 272). Members of the Democratic party sued because they claimed that it violated the one-person, one-vote principle of Article I, Section 2 of the Constitution, the Equal Protection clause, the Privileges and Immunities clause, and freedom of association (*Vieth v. Jubelirer,* 2004, 272).

The case raised more questions than *Davis* did and was also less successful. The lower court found that it only violated the one-person, one-vote principle as the districts were not the same size (*Vieth v. Jubelirer,* 2004, 273). When it reached the Supreme Court it raised additional

questions that Davis did not address. This case dealt with members of a party suing as a block, something that was called into question at the lower court level. Additionally, it brought to question whether a state was in violation of the Constitution if it allowed a districting plan that disadvantaged a minority of voters. In this case the minority was members of the Democratic party. This case, therefore, made the Court answer questions about political gerrymandering that had not been addressed since *Davis v. Bandemer.*

The Court, though, did not answer all these questions. Though, they have the jurisdiction to rule they did not intervene because no appropriate judicial remedy could be found (*Vieth v. Jubelirer,* 2004, 281*).* Even the question of jurisdiction, though, was challenged in this case. One part of determining if a case constitutes a political question is if there are judicially manageable standards present. The Supreme Court in *Davis* essentially claimed that they could find no standards, but that did not mean that ones did not exist. In the years between Bandemer and Vieth there were still no standards found for the Court to truly rely on. The standard they had used was that the plaintiffs had to show that there was discrimination and that discrimination had an effect (*Davis v. Bandemer,* 1986, 141). In this case Vieth proposed that the standard was whether they could prove that voters of a political party were either "packed or cracked" in districts and that it was an attempt to keep voters of that party from turning a majority of votes into a majority of seats (*Vieth v. Jubelirer*, 2004, 289). The Court did not want to use this standard. They said that it is hard to measure as well as unreliable. In constructing these standards it is hard to do because each state has their own standards for fair redistricting and also it is hard to draw a line where judicial intervention is always needed.

The conclusion that the Court reaches is that there are no judicially manageable standards. However, they once again say that just because this case has no judicially manageable

standards, it does not mean that they will not determine ones to be used in the future. The only guidance that the Court gives is that these cases have traditionally been tried under equal protection claims, but that may not be the best way forward. Equal protection focuses on whether a identifying a class of people—specifically race in the context of redistricting—has been used in a discriminatory manner, not what their political affiliation is (*Vieth v. Jubelirer*, 2004, 293).

Veith is the current standard which is to say there is not a standard. The court has still not spoke on this issue since it decided *Veith*. However, it is clear that this case has had a lasting impact since it was decided. Claims to political gerrymandering have only continued to emerge without the courts truly having any way to intervene. A decision in the future is crucial to either say what the standards are or declare if this question is even justiciable.

<div align="center">League of United Latin American Citizens v. Perry</div>

League of United Latin American Citizens v. Perry case was a challenge to the 2003 Texas redistricting plan. It was mid-decade replacing the plan that was instituted following the 2000 census; it is important to note the the plan instituted by Democrats in 1991 was largely considered to be a biased plan that disadvantaged Republicans (*LULAC v. Perry*, 2006, 410). Another relevant fact is that in 2000 the districting was created by a federal judge as Texas did not present a plan that was compliant with constitutional standards (*LULAC v. Perry*, 2006, 415). This case ruled in favor of LULAC, finding it in violation of the Voting Rights Act.

For the opinion, Justice Kennedy rejected the appellant's test that mid-decade plans should always be struck down if it is done with partisan motives (*LULAC v. Perry*, 2006, 417). He said that though the motives of the legislature were clear, "partisan motives did not dictate the plan in its entirety" (LULAC v. Perry, 2006, 417). Essentially, the Justices found it

dangerous to make a clear cut rule for a districting plan without taking the full map into consideration.

Another claim by appellants was that in Texas District 23 the voting power of Latinos was negatively impacted (*LULAC v. Perry*, 2006, 427). The court found that in that district it unfairly disadvantaged Latinos as it was designed to protect an incumbent candidate and in doing that lessened the votes of a politically active community; this was not sustained (LULAC v. Perry, 442).

One reason *LULAC v. Perry* has importance in redistricting literature today is that the Justices engaged in an analysis of certain methods. Justice Kennedy said that, "I would conclude asymmetry alone is not a reliable measure of unconstitutional partisanship" (LULAC v. Perry, 2006, 420). However, Justice Stevens in his dissent agrees with using a partisan symmetry standard as it was not only submitted in a brief, but also used in expert testimony (LULAC v. Perry, 2006, 467). Justice Ginsburg in her dissent also disagrees with Justice Kennedy's rejection of standards such as the sole purpose standard as well as the partisan symmetry standard, indicating that certain members of the court may be open to creating a judicially manageable standard for partisan gerrymandering (LULAC v. Perry, 2006, 492).

Social Science and the Courts

Gill v. Whitford's decision will have an impact on American politics moving forward. The importance in this case is not only because it will determine how political gerrymandering is handled, but also because it will show how the Supreme Court will create judicial standards moving forward. This is because there has been a lack of true guidance for gerrymandering.

The question in this case is largely how the Court will create standards and what evidence it will rely on. This is not the first case where amicus curiae briefs have been submitted and it

will not be the last. To see how the Court handles using—or not using—social science to create standards will have an impact on many cases. The fact of the matter remains that relying on social science techniques may be the only way that *Gill v. Whitford* could create judicially manageable standards. The only reason to infer this is that the Supreme Court has not yet created them absent of using any research. They continuously say that there is not a way *yet* to create a set of standards.

Before evaluating how the Supreme Court could potentially construct standards, it is important to look at how they treat social science in regards to creating standards. One turning point that scholars recognize for social science is in the decision of *Brown v. Board of Education*, they even contend that the wake of Brown brought forward the Law and Society movement (Moran, 2010, p. 516). This is because the Court included a footnote that referenced the social science research brought forward by the plaintiffs (Moran, 2010, p. 518). Though Brown indicated that the Court may be more open to social science, they were still wary of relying on it and are to this day. The main tension is whether social science can be objective like law because many Justices fear the bias that it will bring (Moran, 2010). The other issue is the fact that Supreme Court is supposed to rely on constitutional precedent and the question then becomes does social science have the ability to help answer questions raised about facts of the case to guide the justices on applying precedent (Moran, 2010).

While there has been struggle in using social science evidence we can look to past cases to see how exactly the court approaches the evidence. One example is seen in *McCleskey v. Kemp*. This case, like *Brown*, deals with evidence of racial discrimination. However, this case is in regards to the death penalty and its application. This case revolves around an appeal claiming that the death penalty is in violation of the 8th and 14th amendment as its application is

"administered in a racially discriminatory manner" (*McCleskey v. Kemp,* 1987, 279). The main issue that the Court found in this case is that though the study discussed discrimination as a whole it did not show that the individual application in McCleskey's case was discriminatory. Moving forward it is clear that there needs to be a close relationship between the social science evidence that is presented and the actual case at hand. Due to the adversarial nature of our system that is natural to expect as the law does uphold the same principles as in science.

Another important case to examine is *Daubert v. Merrell Dow Pharmaceuticals, Inc*. This case served as a framework of criteria for how the Court would approach the testimony of expert witnesses. This case involved the parents of children born with birth defects saying that medication the mothers took when they were pregnant caused it. At the trial court level most of the case revolved around proving whether or not the medicine was actually the cause of birth defects. There was tension between looking at the Frye test, which is a common law standard for scientific evidence, and the federal evidence laws. The court set four standards that expert witnesses need to meet but it is the trial court's responsibility to ensure this (*Daubert v Merrell Dow Pharmaceuticals, Inc.*, 1993). The first is that the evidence is reliable in that it has been tested and can be tested, it is not subjective material; second, is whether the theory at hand has been published or subject to peer review.; third, is the margin of error in the research; and fourth, is whether it is generally accepted in the scientific community (*Daubert v Merrell Pharmaceuticals, Inc.* 1993, 592-595). An important point made by Justice Blackmun made in this was that judges have a "gatekeeping role" and that the difference between law and science is that science is "subject to perpetual revision" where law has to "resolve disputes finally and quickly" (*Daubert v. Merrell Dow Pharmaceuticals*, 1993, 597).

In the decision with *Gill v. Whitford,* the justices will have to reconcile some of the tension with social science, exclude its usage for developing standards, or say that judicially manageable standards do not exist. The problem is that there are multiple ways that political scientists have used to determine if there is any partisan bias in redistricting.

As I argue for the development of standards, I will be under the assumption that partisan bias exists in some form in order to look at how it can be evaluated. First, I will create an evaluative structure in order to objectively analyze each method. Each method will be discussed before I come to my final conclusion about what method the Justices should use to create a judicially manageable standard.

Chapter Two: Evaluative Structure

The center of the debate in *Gill v. Whitford* is whether judicially manageable standards can be created in order to rule on the constitutionality of partisan gerrymandering. For the last thirty years the Court has upheld the justiciability of cases dealing with redistricting and legislative apportionment, but this has been done without creating any real standards. In *Vieth v. Jubelirer* the justices stated their concerns that there was a "no judicially discernible and manageable standards for adjudicating political gerrymandering claims have emerged" which would bring challenges of partisan gerrymandering to a territory that would make it non-justiciable by the court (*Vieth v. Jubelirer*, 2004, 281). I will argue, though, that there are standards available and evaluate them.

The Supreme Court had set standards with *Davis v. Bandemer.* In that cases the justices focused on two factors: "plaintiffs were required to prove both intentional discrimination against an identifiable political group and an actual discriminatory effect on that group" (*Davis v.

Bandemer, 1986, 127). In their decision, the Court said that it wasn't enough to prove a "lack of proportional representation" when bringing a case of gerrymandering forward. There needed to be proof that the map would "constantly degrade a voter's influence… over the political process as a whole" (*Davis v. Bandemer,* 1986, 110). The problem with *Davis*, however, is that it was a plurality opinion that did not establish a precedent.

Eighteen years later in *Vieth v. Jubelirer* the court confronted partisan gerrymandering again in a plurality opinion. Justice Scalia wrote that he found that there was a lack of judicially manageable standards thereby rendering partisan claims of gerrymandering nonjusticiable. In doing this he did evaluate the standards that were set forth in *Davis.* While the first part of the test would stand for him, as it would be easy to satisfy, he finds issue with the latter half of the test. Scalia agrees with Justice O'Connor's concurrence in *Davis v. Bandemer* that said the standard "will over time either prove unmanageable and arbitrary or else evolve towards some loose form of proportionality" (1986, 155). This is where the issue in Vieth was found. The court could not reach a majority, found issue with the current standards, and wanted to overturn the precedent. In my own evaluation I will consider the historical precedent as well as looking at the amicus briefs for the standards that experts in the field of redistricting consider a prudent way to evaluate these tests.

To evaluate the different methods, I will use a three prong approach. Each prong will be a requirement that the test should meet. These prongs were decided due to the opinions of the Supreme Court and also by looking at how the federal courts decided these cases as well. Though this will not give a guarantee that this will be how the court will decide *Gill v. Whitford* it does allow us to have a discussion around how the Supreme Court has historically developed standards and how they evolve over time. Partisan gerrymandering cases are ones where the

court is more likely to use social science as a standard due to their inability to develop one on purely legal grounds.

The first standard is if the test can determine partisan bias is present in district lines. This standard is not looking at the intent of the lines, but if the lines themselves are drawn in a way that could potentially disadvantage a group based on their partisanship. This is the most basic function it must serve and also an important one. In order to conform to legal standards a district map may seem odd if it does not meet certain criteria such as compactness, equal population size, and respecting existing political or geographical boundaries. Additionally, a map may look questionable, but in reality was designed in order to adhere to the specific criteria.

The second standard is that it needs to be able to show the extent of the bias that was present in a specific district or state. If a map is found to favor a particular group over another one, is it able to measure the effect that it had? There is a difference between a map that may boost an incumbent's chance of winning in one district and a map to purposely keep Democrats from winning a majority of seats. This, however, is different from the intent prong from *Davis v. Bandemer.* I am not concerned whether the model is able to show that voters were severely disadvantaged. Instead, the method must be able to give some explanation to how the map operated in that district and what effect it had.

The third prong of the test is intent. If a map disadvantages a group with a measurable effect, is that intentional or not? This is perhaps one of the most important prongs. It goes further than showing a map is potentially discriminatory. A map could seem to be potentially discriminatory while still falling within the normal parameters of redistricting as mentioned above. The test should be able to indicate some sort of intent behind the map. Now this could be that there was no intent and due to population distributions it created a map that appeared biased.

It could also be that there were other, better maps that the redistricting authority knew about or the fact that the particular map does not even adhere to the legal standards set forth by the state.

The fourth test will be an evaluation of the quality of the method itself. There will be some evaluations that come from the Daubert test. It will mostly be looking at where this particular method has come from, if there has been peer review, or if it has been mentioned in other cases. This is one that will have less bearing in my final judgement, but it is important that a specific method can stand up in court.

An important note in the structure is that when I draw my conclusions about judicially manageable standards, the method that I see as being the most effective may not have passed all four prongs. These methods may very well be used in conjunction with one another. This is mainly because not all methods are firmly grounded in statistics or equations. Rather some methods can serve an important function in helping to understand intent or provide some context to statistical results.

Chapter Three: The Methods

Gill v. Whitford has had dozens of amicus curiae briefs submitted for both sides. The methods I chose were based off of these briefs. Each one selected laid out standards that the Supreme Court could potentially apply. For this section I did not use the amicus briefs that referenced the justiciability of the question, but instead focused on standards that could be used to determine the constitutionality of Wisconsin's district.

	Partisan Symmetry	Efficiency Gap	Distribution of Outcomes	Political Geography	Legislative Intent
1. Can it make an initial determination of bias?	Yes, it is an equation with the purpose of identifying the difference in the vote to seat ratio for each party in the election.	Yes, it is an equation with the purpose of determining "wasted" votes in the election for each party.	No. It is usually used after a map is suspected to be biased.	No. It is usually used after a map is suspected to be biased.	No.
2. Does it explain the extent of the bias?	Yes, the equation provides a percentage that can be used to see how a particular party was affected.	Yes, the equation provides a percentage that can be used to see how a particular party was effected.	Yes, it is a comparison of maps against each other placed on a curve. An evaluation can be made of how more or less biased a map is based on its position on the curve.	Yes, it is a comparison of maps against each other. An evaluation is made looking at the map decided to place groups of individuals inside district (specifically political parties).	No.
3. Does it help to understand whether the bias was intentional?	No.	No.	No.	No.	Yes, this method looks into why the redistricting authority chose the map. It is done through evaluating statements, and adherence to legal standards.
4. Could this method stand up in court?	Unknown. It was proposed in *LULAC v. Perry*. Some Justices were opposed to it. It is peer reviewed and seen as reliable.	Unknown. It is a newer method and a version of Partisan Symmetry. There is support from political scientists in using.	Unknown. Used more commonly in other disciplines not widely used in redistricting.	Unknown. It has been applied before in courts. Political scientists are receptive.	Unknown, likely yes. This is a method that is similar to traditional court procedures as it is evaluating intent.

Table 1: Summary of the methods using the four prongs of the test.

Partisan Symmetry

Two amicus briefs submitted—one in support of the appellee and one in support of

neither party—argue that the Court should apply the method of partisan symmetry to determine

if there was a partisan gerrymander present. One brief submitted by Bernard Grofman and

Ronald Gaddie suggested using the partisan asymmetry standard as part of a three prong test,

which I will address later. The other brief was submitted by a group of political scientists that identified partisan asymmetry as a workable standard.

Partisan asymmetry is a standard that the court has reviewed before. In *League of United Latin American Citizens v. Perry* this idea was brought to the Court not only in an amicus brief, but also as a part of expert testimony (Grofman and King, 2007, 7). The appeal of the standard of partisan symmetry lies in the fact that it is simple and requires little mathematics. For a district to be symmetrical, the standard "requires that the number of seats one party would receive if it garnered a particular percentage of the vote be identical to the number of seats the other party would receive if it had received the same percentage of the vote" (Grofman and King, 2007, 8). This test shows how many votes needed for a party to gain a seat in a district and looks at the differences between them.

First we must look at whether this standard identifies potential bias in a district. This is the key purpose of the Partisan Symmetry standard. In essence, it allows a judgement to be made about the advantage or disadvantage that a party has in getting their representative elected.

To meet the second standard the method should be able to identify the extent of bias if the map was found to be compromised. One key factor that the test for partisan symmetry aims to accomplish is the responsiveness of a district. Responsiveness is a result of our winner-take-all electoral system, because legislators win a seat with a plurality of a vote, there is a "bonus" given to parties that reach a majority in the state thus causing the vote-seat ratio to seem unproportional (Grofman and King, 2007, 8). In an electoral system that is truly proportional there will be a one to one ratio of vote to seat percentage increase, but it is common for plurality based systems to have varying ratios, but it "does not violate symmetry, so long as whatever party wins a majority of the votes gets the bonus" (Grofman and King, 2007, 9). Data for the responsiveness of the

district can be used to then determine the degree of partisan bias. This does satisfy the first criterion as well as the second. The test for partisan symmetry does help to explain the extent to which bias exists in a map. It does that and with new statistical modeling of the "seats-votes curve" it help to understand the degree of partisan bias as well (Grofman and King, 2007, 10). This measure looks at how the statewide average vote in districts translates into the statewide percentage of seats (Grofman and King, 2007, 10). This statistical set is important because it does identify both the responsiveness of the electoral system while showing the degree of bias as the curve can be followed to look at what percentage of votes a party would have to receive in order to gain a certain number of seats (Grofman and King, 2007, 10).

The third factor is whether it can look at the intent of the map. This test does not accomplish that. It will make you ask why a map is a certain way, but in this test there is no built in answer to that why. Partisan symmetry just looks at past election results and interrupts those to come to a conclusion if there is a bias or not.

The final factor is whether this test can stand up to review in the court of law. One of the main ways is whether or not there is a general consensus that this method is accepted. In the brief from Gerken et. al one of the reasons for supporting the use of this method is because it is so accepted in the community (Gerken et. al, 2017, 13). The brief cites *LULAC v. Perry* that had justices support along with the district court's ruling in *Gill v. Whitford* which also uses this method as part of a three prong approach (Gerken et. al, 2017, 13). Moreover, looking at it within the parameters of *Daubert* this test does pass it. There needs to be acceptance in the community, which was stated earlier, along with peer reviewed work that has been done. There have been many articles that have come out since *LULAC v. Perry.* This was Gerken et. al's argument in support of the court using the standard of partisan symmetry. In the brief they said

that "the [partisan symmetry] standard has now been rigorously vetted and widely applied, and it remains the touchstone for measuring fairness in redistricting" (Gerken et. al, 2017, 17).

Now, this is a generally accepted and peer reviewed standard in the political science community. However, another important function of the Daubert test is whether there is a large margin of error or the evidence can be easily manipulated. Grofman and King—both experts in looking at partisan symmetry—do contend that there can be different approaches to how the measure of partisan symmetry is calculated. There are four different methods to calculate and three of the methods can "produce very different estimates of partisan bias with a different choice of statewide office" (Grofman and King, 2007, 13). This is because the measurement is sensitive to the data that is selected to calculate, but they do say that there is a fourth method to calculate that now uses all available data that makes it less susceptible to the uncertainty caused by the other methods.

In conclusion, this method does offer a workable standard for the court to use to determine if there is bias in how a map is drawn. It does allow the court—or a legislature—see if there is a map that disadvantages one party. Through the other statistical measures it can also determine if there is malintent in how a district was created rather than the normal political consequence of redistricting. Finally, it is seen as being accepted in the field of political science. There is some differentiation in how to calculate the measure, but it is still seen as reliable by political scientists.

Efficiency Gap

Following *Vieth v. Jubelirer*, many methods to determine partisan gerrymandering were found by the court to not be a suitable alternative. Following the decision in *League of United Latin American Citizens v. Perry* scholars did notice that there seemed to be receptiveness to the

idea of partisan symmetry as a means of determining the existence of political gerrymandering (Stephanopoulos and McGhee, 2015, 842). Stephanopoulos and McGhee developed the method of the efficiency gap in response to this.

The efficiency gap comes from the idea of votes being "efficient" or "inefficient" (Stephanopoulos and McGhee, 2015, 850). They look at a vote as being inefficient if it is in favor of a candidate who loses or it is a vote that is in excess of the fifty percent threshold needed in a "plurality-rule, single member district (SMD) election" (Stephanopoulos and McGhee, 2015, 850). The efficiency gap is a percentage that can be compared across elections. The calculations for the efficiency gap is simple: "difference between the parties' respective wasted votes, divided by the total number of votes cast in the election" (Stephanopoulos and McGhee, 2015, 851).

McGhee is the person who submitted the amicus brief to the court. His brief was in support of neither party. There is no advocating for an outcome or a specific standard set forth by the Court. Rather, he explained how it functioned and answered potential arguments and questions for it. For my explanation and evaluation of the efficiency gap I will look at both the submitted brief as well as a journal article that discusses the method.

The first standard that the method should meet is that it must determine if there is partisan bias in how the districts are drawn. One aspect that makes the efficiency gap more accurate in its determination of partisan bias is that it uses "actual election outcomes" (McGhee, 2017, 10). It is because of this that the efficiency gap method will stand under the first part of the test. As stated in the brief, "the EG quantifies the total or aggregate partisan advantage conferred by a map of legislative districts, rather than how much a particular district benefits either party" (McGhee, 2017, 7). In other words, this method can be used as a way to determine partisan bias.

The second factor is where this test does show its strength. It is important for the court's to be able to contextualize the extent of the bias. One of the advantages to this is that it is presented in a percentage form so it can be easily comparable. Stephanopoulos and McGhee do discuss in their paper how Justice Stevens in *LULAC* presented possibilities for how a calculation of symmetry could be used. Stevens said that, "the Court could hold that a sufficiently large deviation from symmetry…create[s] a prima facie case of an unconstitutional gerrymander'" (Stephanopoulos and McGhee, 2015, 843). In that way this method is effective because it does allow a way for the judges be able to see if a map is biased or not.

The third factor is whether or not it can show intentional bias. The efficiency gap seems to be a method that would work in tandem with other evidence or judicial discretion, it would not stand on its own. However, the numbers can provide a basis for the court to act upon so they can create a threshold for when a state needs to justify their districting methods.

The final test for the method is on the quality and reliability of the method in question. The first part of this is whether the method is reliable. The efficiency gap is a reliable method. The efficiency gap method uses actual election results and a simple method to calculate. So when calculating the percentage, "for every 1% increase in a party's vote share above 50%, that party secures an additional 2% of the legislative seats. Thus, an EG of zero means that the election results accord with partisan symmetry" (McGhee, 2017, 11). This is an equation that can be used in every district thus it can be replicated and used.

The method described above has been submitted for peer review. There have been papers on this topic in a wide range of journals from the *Chicago Law Review* to the *Election Law Journal* (Stephanopoulos and McGhee, 2015; Chen, 2017;). Additionally, the method is historically grounded and was developed in response to the Justices' openness to the idea of

partisan symmetry that was expressed in *LULAC v. Perry* (Stephanopoulos and McGhee, 2015, 843).

The third part is looking at the margin of error. The most important part in regards to this is if it could be manipulated easily. The efficiency gap does use a simple equation that is easy to understand, so there's a large margin of error. Additionally, this is a simple metric to look at symmetry. This metric does need to be understood in context of the state politics and the election, though. Additionally, in the brief McGhee does contend that there are times that manipulation could come into play. The first is what version of the efficiency gap the experts use. The simplified version of it requires that the number of voters is the same and there are no third party candidates, but there is usually a small amount of variation across districts along with a lack of third party candidates so the simplified version is "extremely highly correlated" to the full version (McGhee, 2017, 13). The other part that is at discretion of the expert is imputations, which only comes to play when there is no challenger to a seat. Therefore the "imputed, two-party vote for a district represents the expected vote if the seat had been contested" and experts can use different approximations for this figure (McGhee, 2017, 14). These two factors can contribute to there being a higher margin of error or multiple outcomes for the same map.

The final factor is general acceptance. Though there is contention in the discourse community about the "best" method of determining gerrymandering, the efficiency gap is seen as a viable method for determining gerrymandering. This is another way of deciding if a district is symmetrical or not. Additionally, I want to reiterate that the method of partisan symmetry has had acceptance in the legal community as well. Though *LULAC v Perry* dealt with issues of race as well as party affiliations the justices did briefly address partisan symmetry as well. The efficiency gap is a method for determining bias that could be feasibly used by the court.

Political Geography

Political geography has a focus on explaining gerrymandering as opposed to measuring the extent of bias. Research done by Chen and Rodden, experts in the field of political geography, have looked at "unintentional gerrymandering" that is seen as resulting from "Democrats...highly clustered in dense central city areas, while Republicans are scattered more evenly through the suburban, exurban, and rural periphery" (Chen and Rodden, 2013, 241). Two briefs, however, have been submitted that put forth the idea of political geography being used as a measure for gerrymandering. One is from political geography scholars in support of the appellee, claiming that the Wisconsin map is biased making it harder for Democrats to get elected (Political Geography Scholars, 2017, 4). They argue that political geography does not account for this bias and the geography of this state can be used as an explanation for why it is biased (Political Geography Scholars, 2017, 18). Best, Donahue, Krasno, Magleby, and McDonald also presents a brief that contends that there is empirical evidence using the political geography method that the Wisconsin map is biased (2017, 16).

An important difference between political geography and other methods is that political geography can be used in conjunction with other methods. Typically, using this method will be the step after bias is identified. This is because in some states adhering to traditional districting standards could generate an unintentional gerrymandering due to the concentration of Republicans and Democrats in certain districts (Best et al, 2017, 12). One approach for determining if a map is biased due to residential reasons or legislative reasons is generating maps. The first brief details the ways this can be done. First is by comparing the legislative map with a number of maps that are randomly generated (Political Geography Scholars, 2017, 13).

This can allow a judgement to be made on whether the map was designed to best suit a district given limitations or if the lines were drawn with purposeful intentions (Political Geography Scholars, 2017, 14). The next way this can be done is generating millions of small changes to the current map while still keeping it within the traditional districting criteria (Political Geography Scholars, 2017, 14). This is done by changing each district at a time and if it is found that the map is considered an outlier then it is suspect of being intentionally gerrymandered (Political Geography Scholars, 2017, 15).

This test works under the first standard. It is a level of analysis that can be used to see if bias is present. The brief from political science scholars explains how this would operate. In the brief it describes the analysis saying that, the "greater the share of a party's voters living in party-majority "neighborhoods," the better a party will perform in legislative elections relative to its overall vote share" in a scenario such as this natural political geography can explain a map that does look to be biased towards one party (Political Geography Scholars, 2017, 17). So while the actual method is not responsible for the determination it does provide contextualization for potential bias that is found. Moreover, using the maps you may be able to say that a map is biased because there are many more versions of neutral maps that were available.

The second factor to look at is whether it can determine the strength of the bias. This is a strength of using political geography. It allows to see how a specific state or district compared to other maps and if the outcome was expected given the map. This does allow us to look at a map and see if it affects voters in a certain party by either packing them in one district or splitting them across districts.

The fourth factor details the intent of an authority in creating these maps. Now Political Geographers may be able to say that there were all these versions of maps that were better, but if

they cannot prove that the districting authority knew about them, the intent part of the case falls apart quickly. That is the weakness that is present in this method.

The fourth factor is the quality of the method. One thing to note is that there are differentiations in how political geographers can calculate them. This may alter the conclusion that a political geographer may draw. However, in the Political Geography Scholars brief it stated, "that three related techniques described [above] permit courts—in a rigorous, objective, and replicable manner—to assess whether partisan asymmetry in an electoral map results from partisan geography or malicious cartography" (Political Geographers, 2017, 11). This method, though, is fairly accurate as it uses modern computers to draw the districting scheme and do the comparison, the scientists themselves are not drawing their own conclusions from how the maps look.

The other part of this last factor is whether there is general acceptance in the community. There is a wealth of knowledge that has come out recently, especially with advancements in computers. Additionally, it is important to note that in the legal community there is acceptance as well. Political geography was admitted into evidence at the district court level for *Gill v. Whitford.* The court ruled that "the map was not explained by legitimate state prerogatives and neutral factors that are implicated in the districting process" (Political Geographers, 2017, 18). So this method is accepted in the community, and political geography is being used as a standard to evaluate the maps.

Distribution of Outcomes

This method exercises the extreme outlier standard to determine if a map is biased to the point where it is unconstitutional. The test that is proposed by Eric Lander in the amicus brief is

three pronged in the approach: the first prong is a legal analysis of the state's goal in redistricting, the second prong is the quantitative part, and the third part is the decision by the court to see if it constitutes extreme partisanship. The quantitative part is what I will focus on.

Essentially, the distribution of outcomes is similar to the method that was done with political geographers. The process for this involves first generating maps that matches with the state's redistricting goals, then measuring the expected partisan outcome for each plan, showing the distribution of these partisan outcomes, and then placing the current plan along the distribution. The amicus brief contends that this particular method is the answer to the question that the courts have been struggling with. The courts want judicially manageable standards, but they have this standard based in legal language and standards, rather than turning to hard data. This is a method that provides an exact definition for extreme partisan bias.

The first prong of the test is whether or not it can detect bias. Yes, it can detect bias or at least say how the map compares with all the other maps. Essentially, it can tell if the plan is more or less neutral than other options that the state could have gone with. An important feature is that in Lander's brief he details that the maps generated would match with the states redistricting goals.

The second factor is whether or not it can show the extent of the bias. This one is good for showing the extent of how biased the map was. Comparatively was it 90% more biased than possible maps or 10% more biased? From there judges could make the decision about what level constitutes a level of bias that is unconstitutional.

The third factor is about whether or not this addresses whether the map was created to be intentionally biased. Like the Political Geography method this can be difficult in that though there could potentially be much better, much more neutral maps that match the states goals, it

does not matter unless it can be shown that the state knew about those other plans. If the state, for example, said that they used the same software to generate the maps then it would be a different discussion.

The fourth factor is a discussion on the quality of the method. This method is reliable. It can be used in every district and detailed to every district. However, since there are millions of possible maps the distribution of outcomes may look slightly different. However, it is important to note that because they are creating a multitude of maps, the distribution should be roughly the same for each district. The method has been subjected to peer review. However, an important note is that the person that proposed this brief is not a political scientist. Eric Lander is a biologist and mathematician from MIT, Harvard and founded the Broad Institute. He uses a method that is grounded in peer review and a trusted statistical method, Lander has just applied it to the realm of political science.

General acceptance of this method is more difficult. Distribution of outcomes has been used in many fields. However, this method is similar to other methods that are used in both political geography and in partisan asymmetry to compute. In that sense this is a method that has been used in various social science fields, it is just uncertain in the specific sense of redistricting law if it is an accepted standard.

Legislative Intent

Two *amicus* briefs present the method of invidious intent for determining if a district map has been gerrymandered. This is a much different approach from the other quantitative measures that were mentioned above. While both briefs state that quantitative measures can be useful they miss the step of providing intent. This is because those methods do not account for the fact that gerrymandering can exist even with using neutral standards due to the natural distribution of the

population in the state (States of Oregon, 2017, 8). To evaluate this under the structure, it does become more difficult because it not a test that operates with a purpose to detect bias, but rather to interpret bias if present.

The first standard is whether or not it can detect bias. The purpose of this method is similar to the Political Geography method in that it can be used in conjunction with other tests. The first brief focuses on a particular method for an invidious intent: the purpose-and-effects test. This is two pronged as the States of Oregon et al. advocate for looking at both the "effect of entrenching one political party in power" as well as looking at the intent of the redistricting authority in creating the map (States of Oregon et al., 2017, 10). So it does fail the first standard of being able to determine if the lines themselves are biased. However, it is important that in conjunction with another method it could serve as important context to how a map would operate in a single district. This can be important if the entire map is not deemed as being biased, but is contained to a few select districts.

The second factor is whether it can look at the extent of the bias. This is important because it does take a holistic approach. Looking at the first brief, submitted by the States of Oregon et al., it proposes that the Supreme court should use a "purpose-and-effects test" (2017, 2). The importance of invidiousness intent stems from the fact it is a "necessary component of the constitutional standard" because the courts have held that a law's "disproportionate impact, standing alone, is insufficient to show a constitutional violation" (States of Oregon et al., 2017, 10). In the brief, it is explained how invidious intent would be proven. This includes looking at what the mapmakers took into consideration when crafting, and also what standards were to be followed (States of Oregon et al., 2017, 12). Additionally, the map must also have the purpose of creating an "entrenchment" of power for one political party by having a map that would not be

responsive to population shifts (States of Oregon et al., 2017, 14). This method is not tackling looking at the extent of the bias in the same way but it is showing how it was implemented and the effect that that eventually had.

The third is looking at whether it can be used to determine intent behind the bias. This is where the method has a particular strength. The other brief put forth by the Georgia State Conference of the NAACP also advocates for invidious intent. However, this brief advocates for this specific method because it has a flexibility that other quantitative measures do not have as certain methods "are not relevant in a pinpoint gerrymander of one or a handful of districts" (Georgia State Conference, 2017, 5). Once again, this method is looking at the intent of the map makers. Once an effect has been shown, invidious intent will show if that effect was purposeful.

The fourth consideration is looking at the actual quality of the methods. The method lays out a criteria that judges could use in examining a map. . While the objectiveness of legislative intent can be a difficult standard as it does require explanation on behalf of the Supreme Court, it could easily be tailored for each map. Additionally, it is difficult to open a discussion about Daubert standards as it does not use any sort of quantitative evidence. However, this method would be the most generally accepted before the Court due to the fact that intent is something that is associated with almost all cases that go before courts at all levels.

It is important to note that this test has great flexibility which can be both its strength and its weakness. Additionally, it also does adhere to the historical precedent in *Davis v. Bandemer* with the purpose and effects test which does make it a more appealing standard judicially.

Chapter 3: Conclusion

After reviewing the history of the Supreme Court redistricting cases in addition to the different methods used to determine the neutrality of maps, I argue that there are judicially manageable standards that the Supreme Court judges . I do not believe that this question should be considered a political question and therefore nonjusticiable. In order to analyze how I argue a redistricting case should be heard I will first put forth the proposed test that should be used and then advocating for a specific method.

The test that I argue should be used is a purpose and effect test. This specific test was proposed in the amicus curiae brief by States of Oregon et al. Purpose and effect is a test that both looks for a map that not only has the effect of disadvantaging a party or group but also looks for intent on the part of the districting authority. Why this is so important is because in order to invalidate a map it should be proven that the districting authority is being purposefully discriminatory. If there is no purposeful discrimination then there is a chance that the map may not be biased, but be a result of the actual makeup of the district. The purpose and effect test can allow for a wide range of judicial discretion. There can be standards put in place for the judges to determine intent, even using some of the discussed methods above. This also applies to the effect prong. Even if the judges decide to use a test, none of the tests results allow for an explanation that specifically outlines if a map is discriminatory. Rather, most of them serve to measure the effect of discrimination. The judges could then decide at what point a gerrymandering would become unconstitutional.

When the purpose and effect test is broken down "purpose" is looking at whether or not intent is present. It is important to note that invidious intent, the standard proposed in States of Oregon et. al, is in some ways already employed by the justices. In LULAC v. Perry, the entire

map was not struck down because though partisanship guided certain districts it was not a determining factor in the whole map (Citation). Looking further back, even if actions are discriminatory judicial discretion and the implementation of a second check will ensure that districting authorities will not be too constrained. This has roots in *Davis v. Bandemer* which advocated for a similar purpose and effect test.

One other standard that falls under the purpose prong should be how political parties are considered. This cases are brought forward as a violation of the equal protection clause. I do argue that in addition to the purpose and effect standard that the Supreme Court could also use a holistic review standard to help decide this case. The Supreme Court has set the standard of using a holistic review in cases that involve race; I believe that this should help shape the standards for partisan redistricting. An example is in affirmative action. In *Grutter v. Bollinger* the court ruled that "the Equal Protection Clause does not prohibit... narrowly tailored use of race in admissions decisions to further a compelling interest in obtaining the educational benefits that flow from a diverse student body" (2003, 343). I argue that political party in deciding a map should be used in the same way. Like race in admissions, the political makeup of districts should not be decided on the sole basis of keeping together or splitting apart a specific group of people. However, the process is inherently political. Using parties as a consideration should be allowed as long as it is not the only reason that the district lines are created.

One drawback is that using this holistic review standard would be treating party affiliation with strict scrutiny. That is where redistricting policies do differ with affirmative action policies. The only time where this would become relevant without any question is if he map districting policies were designed to target racial groups of people. When discussing levels of scrutiny many would argue that the most appropriate would be a rational basis test which a

law (or in this case redistricting plan) would fail if the government has no legitimate interest in the plan and the policy has no rational link between the plan and the legitimate objective. However, I am not arguing that the Supreme Court should treat political affiliation as a suspect class, but rather in the proposed purpose and effect test, under the purpose prong they should look at the government's intent. If the government is considering political party without looking at other characteristics of the demographics or the geographic location then it should raise a red flag that the plan is potentially unconstitutional if it is coupled with a negative effect.

Finding if a plan has a negative effect is much more difficult than even looking at intent. I do not advocate for one over the other to be used, but I do believe that the judges need to utilize the wealth of resources. Redistricting has become much more complex over the years with all the new technology put in place, and the fact of the matter is that many redistricting authorities has access to technology to create complex gerrymanders (States of Oregon et. al, 2017, 5; Altman, MacDonald, and McDonald, 2005). In order for justices to be able to detect an unconstitutional gerrymander they would need to evaluate a map using these methods. In the specific case of *Gill v. Whitford,* I argue is the Justices should select a combination methods that were submitted in the amicus curiae brief and state how that standard is the most appropriate for this situation. For example, in the case of Wisconsin it deals with the constitutionality of a whole map. The test used for a whole map may be much different than a test that is used for a single district.

I propose that the Supreme Court should use a combination of methods in order to determine if a map is an unconstitutional gerrymandering. Many of the methods that were reviewed above work the best in culmination with other methods. I argue that the Supreme Court, for the effect prong, should use one standard that is in equation such as the Efficiency Gap or Partisan Asymmetry. If that result leads the justices to a conclusion of an unconstitutional

partisan gerrymander then they should consult Political Geography to see if whether or not the goal was truly intentional.

These combined methods will allow for a holistic review that is preferable to other methods. Now, one important reason that I advocate first for a purpose and effect prong, and second for a method that uses different methods is simple. First, intent is key. In order for a plan to most successfully be invalidated there needs to be proven intent and effect. A plan can be proven to have a bad effect and still be struck down, but an intent prong sets a precedence that gerrymandering is a problem that needs to be addressed. Moreover, the argument for the methods of partisan symmetry or the efficiency gap is due to the fact that both use actual election results to judge the level of partisan bias without any hypothetical action. Though political geography can be helpful in evaluating a district through its specific measures of partisan concentration, the trouble that it runs into is that it generates dozens of maps to compare the original against. However, even if the creation of the map adheres to the standards that the redistricting authority used, there can be little to know proof that the possible maps generated were known to the redistricting authority. Perhaps, it may be impractical to use all two methods for one prong, but it can be an important check to use two different methods.

Gerrymandering is a problem in the United States. That is not the argument that my thesis sought to make. Rather, the problem is that there are a lack of judicially manageable standards to judge if a map has been altered to the point where it crosses the threshold into unconstitutional. I argue that there are viable standards for the Supreme Court to use, not only in *Gill v. Whitford,* but in all cases moving forward. The *amicus curiae* briefs provide ample evidence that there are ways to measure bias and provide frameworks in order to judge the maps. I do not advocate for a specific outcome in this case, only that standards exist and should be applied. Questions about

elections and democracy have gone unanswered far too long, especially when there are standards

present that can be used.

References

Altman, M., Macdonald, K., & Mcdonald, M. (2005). From Crayons to Computers. *Social
    Science Computer Review, 23*(3), 334-346. doi:10.1177/0894439305275855

Baker v. Carr, 369 U.S. 186 (1962)

    Brief of Bernard Grofman and Ronald Keith Gaddie as amicus curiae in support of neither
    party, *Gill v. Whitford* No. 16-1161 (2017)

Brief of Heather K. Gerken, Jonathon N. Katz, Gary King, Larry J. Sabato and Samuel S-H
    Wang in support of appellees, *Gill v. Whitford* No. 16-1161 (2017)

Brief of Robin Best, Shawn J. Donahue, Jonathan Kraso, Daniel B. Magleby, and Micheal D.
    McDonald as amici curiae in support of appellees, *Gill v. Whitford* No. 16-1161 (2017)

Brief of Eric Lander as amicus curiae in support appellees, *Gill v. Whitford* No. 16-1161 (2017)

Brief of Political Geography Scholars in support as amicus curiae in support of neither party,
    Gill v. Whitford No. 16-1161 (2017)

Brief for the States of Oregon, Alaska, California, Connecticut, Delaware, Hawaii, Illinois, Iowa,
    Kentucky, Maine, Massachusetts, Minnesota, New Mexico, New York, Rhode Island,
    Vermont, Washington, and the District of Columbia as amici curiae in support of appellees,
    Gill v. Whitford No. 16-1161 (2017)

Brief of the Georgia State Conference of the NAACP, Lavelle Lemon, Marlon Reid, Celeste
Sims, Patricia Smith, and Coley Tyson as amici curiae in support of appellees, *Gill v. Whitford*
No. 16-1161 (2017)

Chen, J., & Rodden, J. (2013). Unintentional Gerrymandering: Political Geography and Electoral
    Bias in Legislatures. *Quarterly Journal of Political Science, 8*, 239-269.
    doi:10.1561/100.00012033

Coma, F. M., & Lago, I. (2016). Gerrymandering in comparative perspective. Party
Politics,24(2), 99-104. doi:10.1177/1354068816642806

Daubert v. Merrell Dow Pharmaceuticals, 509 U.S. 579

Davis v. Bandemer, 478 U.S. 109, 106 S. Ct. 2797 (1986)

Grofman, B., & King, G. (2007). The Future of Partisan Symmetry as a Judicial Test for Partisan
Gerrymandering after LULAC v. Perry. *Election Law Journal, 6*(1), 2-35.
doi:10.1089/elj.2006.6002

Grutter v. Bollinger, 539 U.S. 306 (U.S. June 23, 2003)

McCleskey v. Kemp, 481 U.S. 279 (1987)

Moran, Rachel F. "What Counts As Knowledge? A Reflection on Race, Social Science, and
the Law." *Law & Society Review*, vol. 44, no. 3-4, 2010, pp. 515–552., doi:10.1111/j.1540-
5893.2010.00415.x.

Reynolds v. Sims, 377 U.S. 533 (1964)

Shaw v. Reno, 509 U.S. 630, 113 S. Ct. 2816 (1993)

Stephanopoulos, Nicholas and McGhee, Eric, Partisan Gerrymandering and the Efficiency Gap
(October 1, 2014). 82 University of Chicago Law Review, 831 (2015); U of Chicago, Public
Law Working Paper No. 493. Available at SSRN: https://ssrn.com/abstract=2457468

Vieth v. Jubelirer, 541 U.S. 267 (2004)

Whitford v. Gill, 218 F. Supp. 3d 837, 2016 U.S. Dist. LEXIS 160811, 101 Fed. R. Evid. Serv.
(Callaghan) 1472 (W.D. Wis. November 21, 2016)