

THE UNINTENTIONAL GERRYMANDERING OF AMERICA; HOW POPULATION  
SHIFTS IN CONGRESSIONAL DISTRICTS CONTRIBUTE TO THE WASTING OF  
VOTES, AS MEASURED BY THE EFFICIENCY GAP

by

Hannah Sharp



A thesis

submitted in partial fulfillment

of the requirements for the degree of

Master of Arts in Political Science

Boise State University

May 2020

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BOISE STATE UNIVERSITY GRADUATE COLLEGE

**DEFENSE COMMITTEE AND FINAL READING APPROVALS**

of the thesis submitted by

Hannah Sharp

Thesis Title: The Unintentional Gerrymandering of America; How Population Shifts in Congressional Districts Contribute to the Wasting of Votes, as Measured by the Efficiency Gap

Date of Final Oral Examination: 06 December 2019

The following individuals read and discussed the thesis submitted by Hannah Sharp, and they evaluated the student's presentation and response to questions during the final oral examination. They found that the student passed the final oral examination.

Jaclyn Kettler, Ph.D. Chair, Supervisory Committee

Ross Burkhardt, Ph.D. Member, Supervisory Committee

Stephen Utych, Ph.D. Member, Supervisory Committee

The final reading approval of the thesis was granted by Jaclyn Kettler, Ph.D., Chair of the Supervisory Committee. The thesis was approved by the Graduate College.

## DEDICATION

To Mia and Emerson, raising you to be good humans will be the most important thing I do in this life, but writing this was the most important thing I did for mine.

I love you.

## ACKNOWLEDGMENTS

I would like to thank the following people for their support throughout this process:

Dr. Jaclyn Kettler for your unending patience and understanding, thorough feedback, and encouragement for the past two years. You've helped me become a better writer and a more thoughtful student.

Dr. Stephen Utych for reading and (kindly) answering approximately 19,764 emails about my data. And for patiently teaching me quantitative methods, possibly the greatest teaching achievement anyone has accomplished in modern academia.

Dr. Ross Burkhart for years of advising, support and kindness, and for pushing me to follow my dreams and pursue this degree.

Dr. Gary Moncrief for years of advising and support, multiple letters of recommendation and relentless (but helpful) criticism of my use of commas and semi colons. You curated my love of Political Science and I truly could not have done any of this without you.

## ABSTRACT

Thanks to the foresight of our Founding Fathers we are required by law to redraw legislative boundaries every ten years, after the decennial census. These boundaries create districts at both the state and federal legislative level, and there are many guidelines which govern how districts can be drawn in order to provide for fair competition and accurate representation. Population distribution is key to how electoral districts are drawn at all levels. In recent decades, increasing concentrated populations of Democrats in urban areas and decreasing population in rural, more Republican areas has made it harder to draw competitive districts at the congressional level. There is evidence to support that this geographic polarization is being driven by citizens themselves, making choices of where to live based upon their lifestyle and ideology. This concept of self-sorting has been termed “unintentional gerrymandering” (Chen and Rodden 2013). This trend of “self-sorting” has been caused by many factors, all of them stemming from a larger movement of generational change. Intentional gerrymandering, that which is done by powerful incumbent legislators, is a known problem in political science. Unintentional gerrymandering, the way that geographic population shifts are affecting legislative and congressional districts in the same way, is a much less developed and affirmed concept. My research question addresses two areas that are missing from the current discussion of political geography and redistricting. The first asks how geographic population distribution (rural vs. urban) affects the amount of wasted votes in an election cycle, specifically looking at Congressional elections. The second is to test whether the efficiency gap is an effective formula to measure how wasted

votes are affected by population shifts within congressional districts between redistricting cycles.

To do this I examine a sample of urban and rural congressional districts to compare the number of wasted votes from the 2012 election cycle (which took place after 2010 redistricting was in effect) to the 2018 election cycle (which is the last available election data before 2020 redistricting will begin).

I find that the number of wasted votes in rural districts in 2012 is significant and decreases slightly when looking at the 2018 election results. The effect was smaller and not statistically significant in urban districts when using the 2012 data, but the results in 2018 were much more significant. Supportive of the concept of unintentional gerrymandering, the population shifts from 2012 to 2018 resulted in more wasted votes in the districts which I measured.

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## INTRODUCTION

“We have built a country where everyone can choose the neighborhood most compatible with his or her lifestyle and beliefs”

-Bill Bishop, *The Big Sort*

The apportionment of representatives to the states was such a foundational piece of our government that it is included in the very beginning of the Constitution. In Article 1, Section 2 of the Constitution of the United States of America, the founders lay out how and when the census and subsequent apportionment should take place; “The Number of Representatives shall not exceed one for every thirty Thousand, but each State shall have at Least one Representative” (U.S. Const. art. I, § 2).

In the defense of the Constitution, the authors of the Federalist Papers, specifically James Madison, felt it important to address the issue of counting citizens of the new nation and apportioning representation accordingly; “To the People of the State of New York: The remaining charge against the House of Representatives, which I am to examine, is grounded on a supposition that the number of members will not be augmented from time to time, as the progress of population may demand.” (Madison n.d.). We don’t construct our political arguments quite as eloquently as Madison did here in Federalist Paper No. 58, nor do we have one Congressional representative for every 30,000 people. One thing that hasn’t changed is the counting of all people by the federal government every ten years, and apportioning representatives to the states after that. However, the average size of each district is approximately 700,000 people, more than twenty-three times what the founders had written in the Constitution (Burnett 2011).

The founders intent was for population to be equal between congressional districts. However, they could not have conceived of and didn't include, a mechanism to have other qualifications and guidelines when drawing Congressional districts. Because of this, many maps are drawn simply on the basis of population size without taking other factors into account. Since this time there have been additional requirements and guidelines created, including the need for districts to be compact and contiguous, and additional criteria regarding racial minorities (Civil Rights Act (1964)). These criteria exist to ensure that districts are representative of the people who live in them. When these requirements and guidelines aren't followed or are bent to give advantage to one party or person over the other, the result is a district which has been intentionally gerrymandered.

The practice of gerrymandering is as old as the Constitution of the United States and is one of the most talked-about problems with our political system today. It is often blamed for everything from partisan gridlock in Congress to uncompetitive elections, and long-term policy consequences (both nationally and in the states). However, not everyone agrees that gerrymandering is the culprit for these problems in our political system. "Despite a lack of direct evidence, partisan gerrymandering has become one of the prime suspects in the investigation in to what killed moderation and bipartisanship in American politics" (McCarty, Poole, and Rosenthal, 2009). Modern American politics are fraught with increased polarization, uncompetitive elections, and legislative gridlock. Social scientists and researchers are constantly looking for ways to explain why these things are happening and recommend possible solutions. One of the most common culprits found responsible for all of these things is gerrymandering. However, it's not just gerrymandering, I'm going to complicate an already messy issue and add an extra adjective

here; *intentional* gerrymandering. Intentional gerrymandering refers to a deliberative effort on the part of those controlling the redistricting process to favor one person, party or group. What if the cause of America's political woes (or at least some of them) is not actually vindictive state legislators, but instead the result of actions of the constituents themselves? One option is that the culprit is not intentional gerrymandering (at least not by itself), but something called *unintentional* gerrymandering.

Gerrymandering often occurs when legislators are responsible for drawing their own districts. Many state legislative chambers are controlled by Republicans (in recent redistricting cycles), and there has been a proven tendency for gerrymandering to benefit that same party (McCarty et. al, 2009). There is strong evidence to suggest that intentional gerrymandering helped the Republican Party gain congressional seats after the 2010 census; "various analyses have concluded that the Republican Party gained between 20 and 28 seats in the House between 2012 and 2016 due solely to gerrymandering" (Kean, 2018).

The most common type of gerrymandering is intentional, where district maps are drawn to benefit an incumbent, certain party or racial group (Chen and Rodden, 2013). Having a large number of wasted votes is usually a sign that a district has been gerrymandered for partisan advantage. In fact, that is what the Efficiency Gap formula was originally designed to measure. The efficiency gap was developed by Nicholas Stephanopoulos and Eric McGhee in 2015 as a way to measure extreme partisan gerrymandering (Veomett, 2018). It's a simple formula that takes the total number of wasted votes from the surplus (all votes for the winning candidate, past what was needed to win) and the losing votes (all votes cast for the losing candidate). What if intentional

gerrymandering was not the only culprit for increased partisanship and a lack of competitiveness?

In their piece discussing political geography and electoral bias, Chen and Rodden introduce the term “unintentional gerrymandering”. They define the term as follows; “Unintentional gerrymandering, whereby one party’s voters are more geographically clustered than those of the opposing party due to residential patterns and human geography” (Chen and Rodden, 2013). This supports Bishop’s (2009) work regarding self-sorting at the neighborhood level. Chen and Rodden have done the most work regarding this concept, but more research is needed.

The goal of this research is to determine what effect, if any, shifts in geographic population distribution has on the amount of wasted votes in Congressional elections. This research adds to existing research in the field by examining a randomized selection of congressional districts and comparing the number of wasted votes from the 2012 election cycle to the 2018 election cycle in rural districts and doing the same in urban districts. It also tests the efficiency gap standard in a new way, by using it to test for an unintentional gerrymander, rather than an intentional one.

Given the trends and existing evidence, if a shift in population is causing an effect on the number of wasted votes, we would expect to see a smaller effect in the 2012 data, and a larger effect in the 2018 data. In addition, I would expect to find more wasted votes in both rural and urban congressional districts in 2018 than in 2012. This is because after reapportionment and redistricting in 2010-2011, the maps in 2012 should be fairly balanced. Whereas, we would expect there to be a larger imbalance eight years after the census, from these natural geographic population shifts over time. This would prove that

the districts start from a fair and balanced place after the census and redistricting and are moving to be more unbalanced over time, before the lines are redrawn in the following census.

These expected relationships are only partly confirmed. I find consistent significant results in the 2012 and 2018 rural data sets and statistically significant results in the 2018 urban data. The results for the 2012 urban data are significant. The effect is larger in the 2018 data when looking at urban districts, but not rural ones.

If intentional gerrymandering causes polarization and/or a lack of competition, could this also be true for geographic population shifts? We can see from the results that population shift in both rural and urban districts causes an increase in wasted votes, which according to the efficiency gap standard is the same problem as gerrymandering. Rural districts are geographically larger, more politically heterogeneous and moderately Republican (Chen and Rodden, 2013). More wasted votes in rural districts mean that there is a stronger Republican bias. More wasted votes in urban districts mean the same for Democrats.

## LITERATURE REVIEW

The practice of apportionment following a decennial census is largely uncontroversial. The Apportionment Act of 1911 set the limit of the House of Representatives at 435 (History, Art and Archives 2019). This has increased the population per district since this time, with the average district size after the 2010 census being set at approximately 700,000 people. After each census, states which have had large gains in population receive additional seats, taken from states which have diminished in population. The more contentious part happens after the apportionment, when districts need to be drawn.

Redistricting is like the much more controversial sister to apportionment. Redistricting is a power that was left to the states by the Constitution. The vast majority of states use their state legislatures to draw the new districts, but in recent years there has been a trend for the responsibility to go to a commission (either independent or politically appointed). Approximately twenty states have commissions (or a backup commission) that helps to draw the new maps.

Although they were not explicitly written in to the Constitution, there are many requirements that legislatures and commissions must take into account when drawing districts. The first is that the districts within a state must be roughly equal in size. They must also be compact, contiguous and keep communities of interest (neighborhoods, minority communities) together (Redistricting Criteria n.d.). The Voting Rights Act also created redistricting requirements which were aimed at protecting racial minorities

(History, Art and Archives n.d.). Compactness is also a requirement, but is often at odds with some of the other thresholds because an odd or ugly district isn't necessarily a gerrymander, and in fact might be the best possible district in terms of competitiveness or representation (Tausanovitch n.d.).

In the 1960s the United States went through what has since been termed a "Reapportionment Revolution" in which the Supreme Court heard multiple cases related to redistricting. Many of the requirements related to drawing districts emerged from the decisions handed down in this time period (Cox and Katz, 2002).

The most controversial element of redistricting is, of course, gerrymandering. Gerrymandering is as old as the Constitution itself. In 1789, a year after the Constitution was ratified, Patrick Henry of Virginia used his power as a state legislator to draw a congressional district which made James Madison compete against James Monroe. Elbridge Gerry, who was a signatory of the Declaration of Independence and the Governor of Massachusetts, used his political power to sign an 1812 map into law which had been so horrendously drawn that it was made to resemble a salamander by a local journalist. Gerry, who would later become the Fifth Vice President of the United States, approved (though it should be noted he didn't draw it) and signed the bill (Trickey, 2017). The term gerrymander has been in Webster's dictionary since 1864 and has been a common political practice since then as well (Trickey, 2017). Chief Justice John Roberts has even spoken publicly about partisan gerrymandering being a problem since the country began but has withheld the Court from participating judicially in the issue. "Partisan gerrymandering is nothing new. Nor is frustration with it... The Framers were



aware of electoral districting problems [and assigned] the issue to the state legislatures.” (Labunski, 2019). What can be done about the problem of partisan gerrymandering?

The issue of gerrymandering is so well-known and has been so unpopular with the American public and there is a large, grassroots, reform movement in the United States to try to tackle the problem. States across the U.S. have seen ballot initiatives, petitions, the creation of independent commissions, and many, many legal actions against partisan gerrymandering in recent decades. But can such proposed reforms fix these problems? We need to fully consider all possible causes, both intentional and unintentional gerrymandering, before that can be determined. Although intentional, partisan gerrymandering is often the phenomena focused on when discussing wasted votes in a district, geographic population shifts are also to blame. We are sorting ourselves geographically into ideologically like-minded neighborhoods. Partisanship and ideology have been increasingly overlapping in recent decades, with the term “conservative” becoming aligned with the Republican party and “liberal” with Democrats (Abramowitz and Saunders 1998). These “sorted” neighborhoods, make up cities, which make up counties and are then drawn into ideologically like-minded Congressional districts. Based on this I would then expect that there would be effects of unintentional gerrymandering (i.e. we find that population has an effect on wasted votes) in rural areas in every election cycle, because many districts would have been drawn in favor of Republicans, but urban areas will show more significant effects in the election cycles that come toward the end of the decade after population has shifted and clustered in urban areas. I would also expect to find, based on previous research, that there is a larger overall effect in urban areas due to the clustering of like-minded voters in densely populated districts.

In 2019, the Supreme Court all but closed the door on partisan gerrymandering cases altogether. In a decision handed down from two consolidated cases (*Rucho v. Common Cause*, No. 18-422, and *Lamone v. Benisek*, No. 18-726), Chief Justice John Roberts wrote in his majority opinion that; “We conclude that partisan gerrymandering claims present political questions beyond the reach of the federal courts,” (Liptak, 2019). However, not everyone agreed with Justice Roberts’ opinion. Justice Kagan wrote in her dissent that; “The practices challenged in these cases imperil our system of government,” she said. “Part of the court’s role in that system is to defend its foundations. None is more important than free and fair elections.” (Liptak, 2019). Because of this, state-level reforms by activists might be the only recourse left to affect positive change in regards to partisan gerrymandering. The obstacle of justiciability isn’t the only thing facing anti-gerrymandering activists. Geographic population shifts are another big problem in being able to draw districts that are conducive to free and fair elections.

The creation of the efficiency gap measure was like an answered prayer for many activists who were fighting for redistricting reform. It was seen as an answer to Justice Kennedy’s request for a workable standard to measure partisan gerrymandering (Howe n.d.). The key to the efficiency gap is looking at wasted votes. The efficiency gap standard has been used by attorneys and political scientists to quantify and prove partisan malintent in gerrymandering cases from Wisconsin to North Carolina. As with anything, the efficiency gap also has its critics. Other researchers and mathematicians have come up with competing measures and publicly point out the flaws of using this formula to measure partisan gerrymandering (Bernstein and Duchin, 2017). A main critique is that it’s too simple and doesn’t get at the complexities of intentional partisan gerrymandering.

Although it can (and likely will) be used for challenges in the lower courts, the efficiency gap isn't living up to its full potential. What if the efficiency gap could be used to measure wasted votes for other political phenomena?

While an extensive amount of research has been done about intentional gerrymandering, few studies have focused on unintentional gerrymandering. Concepts such as population sorting have been studied for other reasons, including the loss of civic/community life (Putnam, 2000) and homogeneity in populations (Bishop and Cushing, 2009), but this study looks specifically at the effects of population sorting on wasted votes in Congressional elections. Many studies look at a more micro level, looking only at counties in a single state (Kinsella, McTague and Raleigh, 2015) or neighborhoods (Bishop and Cushing, 2009), or an older time period (Nall, 2015). "The use of electoral districts to examine cleavages in society is relatively common in the literature; a large body of work attempts to identify such divisions using partisan voting and direct democracy voting" (Kinsella et al., 2015). Other scientists have tried to identify if the concepts displayed in Bishop's book "hold water" statistically (Abrams and Fiorina, 2012), this study is another attempt to identify that. All of the research discussed here fits into the larger field of political geography.

What do I mean by "geographic population shifts"? Specifically that population in urban areas is growing and population in rural areas is declining. For decades, population in urban areas has been growing at a sharp rate, while population in rural areas has been declining. As a result, over half (fifty-three percent) of the U.S. population now resides in the top fifty urban areas (cities with a million or more people) (Teixeira, 2008).

How does this correspond to an increase in wasted votes in congressional elections? In addition to population being sorted into these rural and urban areas, strong partisanship is associated with each area. Ideologically liberal or those who identify as Democrats have tended to cluster in urban areas, while those who are ideologically conservative or identify as Republicans live disproportionately in rural areas. “American political behavior unquestionably divides along income, religion, gender, race, age, and geographical fault lines.” (Fisher, 2014). Urban areas are almost always Democratic voting hot spots. There is a strong relationship between partisan composition and population density, with a decline in density equating to a decline in Democratic voting (Teixeira, 2008). By population shifting from rural to urban areas, we are left with like-minded Republican populations in rural areas and Democratic groups in urban areas. Unlike in the latter half of the 20th century, suburban areas aren’t growing rapidly (although they remain one of the biggest battleground areas – but that is a story for another time) (Walter, 2019).

The first half of the 20th century saw population shifts to cities resulting from an increase in craft production and assembly line labor. In the decades after World War II, American citizens were increasingly moving to the suburbs (Teixeira, 2008). Even with population being increasingly concentrated in the suburbs, competitiveness in elections wasn’t seen as a big problem. Presidential elections (by state) in both 1960 and 1976 were closely contested. “And in both of those elections all of the most populous states were closely contested including California, New York, Illinois and Texas” (Abramowitz and Saunders, 1998). In the latter half of the 20th century, geographic population sorting

took the form of social specialization and increasingly homogenous neighborhoods (in both urban and rural areas).

The reasons for these large shifts are many and include historical changes, generational change, increased minority populations, shifting white population, increased levels of educational attainment and changes in infrastructure (specifically highways). Generational change, especially the millennial generation, are one of the biggest effects on shifting population- specifically widening the urban vs. rural divide (Dure, 2014). Rural areas are suffering from a decreased birth rate because younger generations are seeking out urban areas for opportunities to live and work.

Millennials, the largest generation, which makes up 30 percent of the voting age population, differs in many facets of life from previous generations (Fry, 2018). Along with this generational change has come a shift in traditional gender roles. From 1972 until today; “the proportion of married couples that both work outside the home has risen from 32 to 52 percent.” (Teixeira, 2008). In conjunction with being more populous in urban areas, millennial and unmarried voters are more likely to be Democratic voters (Teixeira, 2008).

Generational change is also tied closely to another factor which is affecting population shift, increased immigrant populations (Teixeira, 2008). It is evident from exit polling and census data that the share of minority populations making up the electorate (especially the 18-45 age group) is continuing to grow. According to exit polling from the 2008 election “African-Americans made up 15 percent of voters under the age of 45. Hispanics and other nonwhites made up 19 percent of voters under the age of 45 compared” (Abramowitz, 2010). Black, Asian and Hispanic minority groups are all

strong Democratic voting blocs. This is supported by looking at demographics of eligible votes in blue and red states. “Eligible voters in solid blue states are 34 percent minority, while in solid red states they are 26 percent minority” (Teixeira 2008). Although minority populations are on the rise, it is the pattern in where people are living that is changing and becoming more alike. The country as a whole is becoming more diverse, but neighborhoods are more homogenous.

One of the consequences, as evidenced through the measure of wasted votes, is electoral competitiveness. In 2000 the vote margin between candidates George W. Bush and Al Gore in Florida was 0.00921%. 527 votes separated the two, with the winner becoming President of the United States (Blomquist, 2000). Decades prior in 1974, a Senate race in New Hampshire had a vote margin of 0.000901%, with only 2 wasted votes. Only five congressional elections (House and Senate) have had a less than 1% vote margin since 2000.

**Table 1 U.S. Congressional Districts with a less than 1% vote margin from 2000-2018.**

Year	District	Margin	Margin Votes	Total Votes Cast (for Winner)
2000	Washington Senate	0.09301%	2229	1,199,437
2002	Colorado 7 <sup>th</sup> CD	0.07403%	121	81,789
2006	Connecticut 2 <sup>nd</sup> CD	0.0342%	83	121,248
2008	Minnesota Senate	0.01287%	312	1,212,629
2014	Arizona 2 <sup>nd</sup> CD	0.07343%	161	109,704

These low-margin elections demonstrate a high level of electoral competition. “In the competitive 1960 and 1976 elections, for example, there were far more closely contested states and far fewer landslide states than in recent presidential elections” (Abramowitz and Saunders, 1998). In addition to having large margins of wasted votes many of these elections are won by incumbents. A startling statistic; “99% of incumbents standing for reelection were successful in the 2002 and 2004 elections.” (McCarty et al. 2009). A consequence of geographic polarization is that there are far more landslide states now than there were decades ago. This is true for presidential as well as congressional elections. Anyone who looks at a blue and red map of presidential election results can see that there are partisan groups of voters, clustered together around the country. It’s why the map looks red in the middle and blue on the outskirts.

Bill Bishop focused his research in *The Big Sort* on the question of why this geographic polarization was happening and the factors that are causing it to worsen. His explanation? A phenomenon he entitled The Big Sort. Bishop's argument is that Americans are sorting not just along racial, economic or religious divides, but a larger all-encompassing ideological divide. He suggests that all of these other demographic factors feed into this ideological separation, this "Big Sort". This sorting is driven by two main factors; "one is the growth of "a politics of self-expression," where partisan divisions in the public are increasingly driven by social, cultural, and consumer identities (Bishop 2009). The second is "the geographic dimensions of this division have been fueled by economic mobilization" (Bishop and Cushing 85). These factors came together to create a situation in which we choose to live among those who are ideologically like-minded and aligned on a partisan basis. "We have built a country where everyone can choose the neighborhood most compatible with his or her lifestyle and beliefs" (Bishop and Cushing 40). This is a common phenomenon that has been studied in other disciplines besides political science. "Sociologists and psychologists refer to the clustering of people with like-mindedness and/or similar backgrounds (sorting) as homophily, or simply that "like attracts like" (Kinsella et al. 2015). Lifestyle preference is the largest factor of this, but this lifestyle preference is only achievable through the causes of population shifts that have been mentioned previously (generational change, educational attainment, change in traditional gender roles, etc). To measure how Americans are living in ideologically like-minded areas, Bishop uses presidential election return data. "Americans are increasingly living in communities and neighborhoods whose residents share their values and they are increasingly voting for candidates who reflect those values." (Bishop and Cushing, 2009).



Although I use Bishop's book, *The Big Sort*, to inform and support much of the basis for my argument, I don't endorse whether his stance on neighborhood sorting is making us more or less polarized, but rather conclude that sorting is indeed a phenomenon that is occurring in congressional districts (including multiple neighborhoods and cities and in some instances, multiple counties) and that its effect is evident in declining congressional election competitiveness. For this specific research, I'm less concerned with the problem of political discourse and more concerned with the aggregated voting behavior and possible implications.

The main consequence of the sorting Bishop describes is that people who live in like-minded neighborhoods and communities won't encounter disagreement or differing points of view through conversation with their neighbors (Bishop and Cushing, 2009). One of the biggest criticisms of intentions behind *The Big Sort* focuses on this point. The most noted, vocal, critics of Bishop's work are Samuel Abrams and Morris Fiorina (2012). Their criticisms are largely based around the claims that the geographic population sorting affects, and is affected by, a lack of interaction and conversation between neighbors. Although they take issue with the listed consequences (and some of the empirical methods) of *The Big Sort*, Abrams and Fiorina do not disagree with the outcome or concerns these findings hold for democracy. "We agree that such behavior is highly problematic for democratic politics, and if realized, a matter of serious concern." (Abrams and Fiorina, 2012). The biggest critique of Bishop's methods are that presidential election return data is limiting and doesn't give the whole picture. This could also be a critique of the research here, and an idea that will be explored more later on is the need for data at a more localized level to really get at the idea of residential

polarization. I take issue with Abrams and Fiorina's critique. Insinuating that geographic population sorting by ideology can only have a strong effect if neighbors are having in-person political conversations, is ignoring the effect it can have on electoral competitiveness, the redistricting process and all other issues discussed herein. There is strong research to support the claims that Bishop makes. McCarty, Poole and Rosenthal have done work in this field and have found that geographic polarization has grown along with Congressional polarization and other modern problems including income inequality (Nall, 2015, McCarty et al., 2006).

Chen and Rodden, the creators of the term "unintentional gerrymandering" find through their research that; "the highest levels of electoral bias against Democrats occur in states where Democratic voters are most concentrated in urban areas" (Chen and Rodden, 2013). And we see this bias in everything from presidential and congressional elections, to state legislative elections as well. In recent decades, the more rural parts of the South and West have become solidly Republican, while the Northeast and West Coast have become strongly Democratic in voting behavior (Hopkins, 2010).

As discussed previously, gerrymandering has been a problem since shortly after the Constitution was ratified in 1788. Racial gerrymandering was a large problem in the Civil Rights era and partisan gerrymandering has been a problem in recent decades. Geographic population shifts are creating a similar problem, sorting like-minded or demographically similar people into one area, but this problem is endogenous and discussed much less. One way to measure partisan gerrymandering is the efficiency gap, which looks at how many wasted votes were cast in an election. Using this measure, a

district where more than eight percent of votes are wasted is considered to be gerrymandered.

The efficiency gap is a straightforward equation that was created to fulfill Justice Anthony Kennedy's request for a manageable standard by which to evaluate partisan gerrymandering claims in the courts. There are two kinds of wasted votes; losing and surplus (Veomett, 2018). The losing vote refers to all votes cast for the losing candidate(s). The surplus vote refers to all votes for the winning candidate past the fifty-plus-one needed to win. "From a party's point of view, a vote is wasted in one of two cases. Democrats who vote in districts that lean heavily Republican are wasting votes, since they're supporting losing candidates. But Democrats who vote in heavily Democratic districts are also wasting votes, since every vote beyond the one that clinches the majority doesn't contribute to the victory" (Kean, 2018). Of course, in real life, no districting plan will have an efficiency gap of exactly 0. So, how high is too high? Stephanopoulos and McGhee argue that corresponds to a historically robust threshold for unacceptable partisan gerrymandering (Bernstein and Duchin, 2017). The efficiency gap judges that a district is gerrymandered if the wasted vote percentage is higher than eight percent. In a two-party system like the United States, bias emerges when one party has a more concentrated amount of voters in one district (Chen and Rodden, 2013). Having a large number of wasted votes means that the district is biased to be more responsive to one party over another. This could be the case if the district was gerrymandered but if it was drawn fairly the percentage of wasted votes should be below eight percent, according to the efficiency gap's creators- Nicholas Stephanopoulos and Eric McGhee (Veomett, 2018).

In a study looking at Wisconsin's State Assembly, Krasno, Magleby, McDonald, Donahue, and Best, find; "Further investigation reveals important measurement characteristics of the efficiency gap that renders it a dubious metric with which to detect and weigh gerrymanders for the results it yields may vary widely depending on the election used and overall competitiveness of the state" (Krasno et al., 2018). Even critics don't dismiss it entirely, but it can't be used as a standalone method to measure gerrymandering (Kean, 2018). This will be discussed in more detail in the "future research" section later.

To address my second research question, I attempt to determine if the efficiency gap can be used to measure wasted votes caused by unintentional gerrymandering. I expect that the efficiency gap can be used to measure the effect of population shifts on wasted votes. I also expect that there will be a larger effect the farther away in time from when redistricting took effect. This is a new use for the measure, which has not been tested before. If the proper control variables are used, the efficiency gap should work to measure the effect of population shifts on wasted votes. Establishing an alternate use for the efficiency gap could be the baseline for future avenues of work which use the efficiency gap to measure other concepts besides partisan gerrymandering.

## METHODS

What effect does this demonstrated geographic population shift have on the amount of wasted votes in an election? I will use the efficiency gap to measure how wasted votes are affected by population shifts within congressional districts between redistricting cycles. For this research I focus specifically on rural and urban congressional districts. I also use a time series analysis to compare the 2012 election cycle to the 2018 election cycle, with the expectation that there will be a larger effect on wasted votes in 2018 due to shifting population over time, before redistricting occurs again at the end of the decade.

There was no existing data set which contained the information I needed, within the parameters of my research design. I therefore created a data set from scratch. Using an interactive map of the 2017 American Community Survey (ACS) data I compiled population and area (square mile) for every congressional district, and then calculated population per square mile. That list was separated into four quartiles based on the calculation of people per square mile<sup>1</sup>. The first and second quartiles contained the most rural districts. Quartile three was suburban and quartile four contained all of the urban districts.

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<sup>1</sup> After completing the list, but before separating into quartiles, I removed the congressional districts which were not applicable to this research. Those are as follows; American Samoa, Guam, Northern Mariana Island, Puerto Rico and the Virgin Islands.

Defining “rural” was challenging as definitions at the federal level vary across agencies. I reviewed fifteen different definitions of rural before choosing to use the Department of Veteran’s Affairs definition. This measure was chosen because, of the federal definitions I was able to find, it was one of only two that used the calculation of people per square mile to define the category. I also used the Veteran’s Affairs definition of “urban” which is; areas that have “a density above 1,000 people per square mile” (The Washington Post, 2013).

I chose to create my own quartiles for this research as most available data regarding urban and rural areas are done at the county level, but because congressional districts cross county lines I was unable to use existing data. Suburban districts have been removed from this data <sup>2</sup> because my research question purposefully excludes suburban areas. The scope of this research is focused solely on urban and rural districts, mainly to show a comparison of the Democratic and Republican bias that exists in each, but also because including suburban districts complicated the intent. There is research suggesting that suburbs are now the most competitive regions in the country, which is interesting but unfortunately falls outside the scope of this research (Gimpel and Schuknecht, 2002). A research design including (or focused on) suburban districts would require its own research design to fully control for all effects.

After removing those districts which were classified as suburban, the rural and urban districts were then separated into two separate sheets. Because this data sheet was created in Microsoft Excel, I used an excel formula (random\_number) to assign random

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<sup>2</sup>The definition I selected did not strictly account for a definition of suburban, so I designated those districts with 500-1,000 people per square mile as being suburban.

numbers to all remaining districts. I then sorted these random numbers from smallest to largest and chose the first thirty districts in each sheet (rural and urban)<sup>3</sup>. Creating a random sample of districts is important to the implications of the findings of this research. We can more likely generalize and apply the findings if the sample is completely random.

The final rural data set contained twenty-seven observations and the urban data set contained thirty-one. The sample size of the rural data set ended up being smaller than the urban data set because some districts needed to be removed<sup>4</sup>. Some states are only apportioned one representative, the minimum amount guaranteed by the Constitution, and these districts are considered “at-large”. A few at-large districts were included in the random sample of rural districts selected for this research but were removed because the control variable used to look at gerrymandering in a given state didn’t apply. This design uses a small sample because of the scope of the design was built around having a random sample. Because the sample was selected randomly from a larger pool of all 435 congressional districts, we can safely assume that the effects shown are representative of both rural and urban districts throughout the country.

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<sup>3</sup> Although the districts were chosen completely randomly, the urban data set includes districts of notable Democrats including Adam Schiff (CA 28), Nancy Pelosi (CA 12), Ilhan Omar (MN 5) and Rashida Tlaib (MI 13).

<sup>4</sup> North Carolina 9 was originally included in the rural data set, but in February of 2019 the North Carolina State Board of Elections ordered a new election in this Congressional District. Because the election return data for 2018 was considered invalid I removed this district from the sample.

The dependent variable for these models is wasted votes, which was calculated using the efficiency gap formula. The use of this was designed to test whether the formula could be used to measure other concepts in political science, in addition to the concept of partisan gerrymandering which it was designed to measure. The efficiency gap formula is as follows:

$$\text{Efficiency Gap} = (\text{Total Democratic Wasted Votes} - \text{Total Republican Wasted Votes}) \div \text{Total Votes}$$

(source: The Brennan Center)

As explained previously, the Efficiency Gap is used to measure wasted votes. Table 2 below shows an example of the amount of wasted votes cast each in a rural (Kentucky 2) and urban district (California 13) across the two election cycles studied.

**Table 2**      **Examples of wasted vote calculation between two districts.**

	Wasted Votes Party #1	Wasted Votes Party #2	Total Wasted Votes 2012	Wasted Votes Party #1	Wasted Votes Party #2	Total Wasted Votes 2018
Kentucky 2 (RURAL)	141134.5	40,374	129,915	128673.5	43,027	122,991
California 13 (URBAN)	144292	106,144	144,290	147419.5	113,161	147,418



The main independent variable is the total population of each congressional district. It is important to note that I use population as a whole, and not voting eligible population, voting age population or the population of registered voters.

Controlling for incumbency is important as incumbency can have an effect on the outcome of elections, a phenomenon known as the incumbency advantage, though the strength of the incumbency advantage has decreased in recent years and is debated among some scholars (Landsman, 2017). There can also be an electoral effect when an incumbent chooses *not* to run again. This can be attributed to the sentiment towards an incumbent's party being negative, which would create a natural decline in the vote share for that party (Cox and Katz, 2002). In the data set, I controlled for incumbency by recording 1, if an incumbent won in that district in that election cycle, and 0 if other (i.e. an incumbent ran but lost or an incumbent did not run).

To account for the partisan lean in a given district, I also included the Cook Political Report's Partisan Voter Index score in the models. This measure is used as a proxy for previous vote margin, which was either unavailable or difficult to include for all districts. Districts which were Democratic leaning were given positive scores, while Republican leaning districts were given negative scores to create an ordinal variable. For the 2018 data, I used the 2017 Cook Political Report, which covers the 115<sup>th</sup> Congress and includes results from the 2016 election. I paired the 2012 data with the report covering the 113<sup>th</sup> Congress. This incorporates data from the 2004 and 2008 presidential election results.

The next control variable was an attempt to control for turnout. To do this I looked at other races on the ballot and used gubernatorial elections as a proxy for other

elections which might have influenced turnout in each cycle. To create this measure, I looked at whether a gubernatorial race was on the ballot for each state in each election. This was converted into a binary variable with 1 = yes and 0 = no.

The next control variable included aims to assess whether a state's congressional districts were gerrymandered. It is important to control for intentional gerrymandering here so that we can attempt to isolate the effects of unintentional gerrymandering. To do this I include the Polsby-Popper measure of compactness for each state. Although there are multiple measures which can indicate whether a district has been gerrymandered, the Polsby-Popper measure was the most popular measure in the research I cite. This measure is actually a ratio which measures the area of the Congressional district compared to the area of a circle, the circumference of which is equal to the perimeter of the district. In the Polsby-Popper measure, a high ratio indicates that a state is less gerrymandered, while a low ratio indicates that a state is more gerrymandered. The basic idea is that the district should be able to fit inside a circle with the same perimeter, if it cannot do this it is less compact (having a low ratio) and thus more likely to be a gerrymander. The biggest criticism of this measure is that it does not take state and natural boundaries into account. This could give a false ratio/score for districts which geographically are less compact owing to the physical landscape of the district. Alternative measures which could be used in a future model include; the Schwartzberg, Area/Convex Hull and Reock ratio, all of which are similar and measure area and compactness.

Party control is a binary variable indicating if a party other than the Republican or Democratic Party was the second highest vote getter in a given election. In almost all the

districts in the sample, Democrats and Republicans constituted the first and second highest vote getters. In elections where this was not the case, a notation was made in the data set. For a full list of these exceptions please see Appendix A.

The final variable is included to account for racial makeup of the districts. I use American Community Survey data which includes the percent of Non-Hispanic White population in each district. Although there are various limitations with all of these measures, together they ultimately provide a strong picture of the effect of unintentional gerrymandering.

## RESULTS

Table 3 shows the results of a linear regression model of the 2012 data for the rural congressional districts. The coefficient for the population variable is 0.412. This is a significant result, telling us that for every additional 2.4 people in a district, there is an additional wasted vote in a given district. The p-value, at 0.019, is also statistically significant. I'm confident (98.1%) with that p-value that the results displayed here are statistically different from zero. We can therefore reject the null hypothesis and safely assume that there is an effect between population shifts and wasted votes in congressional elections. Specifically, there is an increase of one wasted vote for a growth of two and a half people in a district. As population increases, so does the amount of wasted votes. The variable of "Race" is a key control variable, as racial makeup is key to mapmakers when drawing districts, especially under the Voting Rights Act.

**Table 3 Comparison of 2012 and 2018 Elections Results for Rural Congressional Districts**

Variables	<i>2012 Election Results</i>	<i>2018 Election Results</i>
Population	0.4127977 (0.019)**	.253 (0.021)**
Incumbent Won	2090.079 (0.873)	16942.07 (0.268)
Partisan Voter Index	1116.838 (0.023)	-339.1169 (0.492)
Gubernatorial Race	842.0291 (0.941)	19335 (0.143)
Gerrymander (by state)	-1408.119 (.036)	-717.2987 (0.320)
Party Control	7003.946 (0.691)	-23654.75 (0.210)
Race	614.923 (.055)*	635.9966 (.087)*
R-squared	0.4987	0.4024
Observations	27	27

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

It is worth noting that the rural districts in this sample are largely conservative, which is consistent with other research and knowledge about voting patterns in rural areas. The Republican candidate won in twenty-three of the twenty-eight districts in the 2012 election cycle. This is consistent with expecting some Republican bias, as existing literature would support, in the redistricting cycle that occurred in 2010.

The coefficient for population in the 2018 election model is .253, which is lower than the coefficient for the model using 2012 data. As we would expect, this is a significant result, telling us that for every additional four people in a district, there is an

additional wasted vote in a given district. The p-value, at 0.021, is also statistically significant. I'm confident (97.9%) with that p-value that the results are statistically different from zero<sup>5</sup>. Consistent with the 2012 results, we find further support that there is a relationship between population shifts and wasted votes in congressional elections. As population increases, so does the number of wasted votes.

Just like in the 2012 cycle, the Republican candidate also won in twenty-three out of the twenty-eight districts in the 2018 election cycle. Population is declining in rural areas, which is evident when comparing the 2012 results to the 2018 results in the Table 3. In 2012 it took only 2.5 people to produce one wasted vote, where in the same districts in 2018 it took four people to create the same effect.

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<sup>5</sup> The P-value is higher than in the 2012 results, it still meets the 95% threshold needed.

**Table 4 Comparison of 2012 and 2018 Elections Results for Urban Congressional Districts**

Variables	<i>2012 Election Results</i>	<i>2018 Election Results</i>
Population	0.28502 (0.280)	.324 (0.000)***
Incumbent Won	52905.95 (0.123)	-7403.065 (0.448)
Partisan Voter Index	-1121.285 (0.172)	925.1055 (0.029)
Gubernatorial Race	-619.5982 (0.985)	19514.87 (0.042)
Gerrymander	133.4207 (0.930)	-873.1986 (0.176)
Party Control	32979.47 (0.319)	18358.16 (0.210)
Race	676.6433 (0.273)	1124.486 (0.000)***
R-squared	0.2582	0.6361
Observations	31	31

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 4 presents the results of the linear regression models for the urban districts. Like the previous models, the dependent variable is wasted votes. The coefficient for population is .285 in the 2012 election. As population increases by 3.5 people, there is an additional wasted vote in a given district. However, this is not a statistically significant result ( $p=0.280$ ), so we cannot be confident in the value of the coefficient. This effect is also less significant than the effect found in the model for rural data in 2012. This is notable because it shows that there was less of an effect from wasted votes after redistricting took place in 2011. Consistent with the geographic population trends

discussed previously, the Democratic candidate won twenty-six out of the thirty-one races in the 2012 election cycle.

The coefficient for population increases to .324 in the 2018 election. A population increase of 3 people in any given district would thus predict an additional wasted vote. The p-value, at 0.000, is statistically significant. We can be confident with that p-value that the results displayed here are statistically different from zero and thus are significant. We can therefore reject the null hypothesis and safely assume that there is a relationship between population shifts and wasted votes in congressional elections in urban districts for the 2018 election cycle. In 2018, thirty of the thirty districts were won by the Democratic candidate, which is why it is important to control for party in the models above.

Consistent with the overall findings, the variable for race was significant in the rural data sets in both election cycles, but only significant in the urban data in 2018. Thus, there is a strong correlation between the percentage of the population which is white and the number of wasted votes in an election cycle. Because the population shift has increased the population in urban areas it was consistent with my expected findings to have a more significant effect in 2018. However, it was surprising that the results in 2012 were not statistically significant (even for a small effect). When considering the rural districts, the effect in 2012 was larger than the effect in 2018. This is likely because the districts were drawn to Republican advantage after the 2010 Census and redistricting cycle, and because population shifted away from rural areas in the time between election cycles. Thus, it takes fewer people to create more wasted votes in 2012 and more people to create the same wasted vote in 2018, prior to the new census and redistricting cycle



taking place. To be absolutely sure of this result we should replicate the model using 2020 data when available. However, using the existing data one can see that the results in the models above are statistically significant so we can be sure that there is an effect of population shifts on wasted votes in rural Congressional districts. These results support the idea that there is geographic polarization happening across districts in between redistricting cycles. The effects of population on wasted votes were significant in 2018 for urban districts and not in 2012, and, given that redistricting didn't occur in this time, this is suggestive that these results could be due to geographic polarization.

However we know that based on these results, we can see that in 2018 in rural districts it would take about four people to create an additional wasted vote, vs the three that it would take to create the same wasted vote in an urban district. This tells us that there is a positive effect of population changes on wasted votes in both rural and urban congressional districts, but that this effect is larger in rural areas. Just like intentional gerrymandering, unintentional gerrymandering also has a bias for Republicans. Large population shifts between 2012 and 2018 contributed to more wasted votes. Given the small sample it is impressive that the results were statistically significant, the implications of this significance will be discussed further in the following section.

Before discussing the content and context of these results and the implications, which arise from them, it is important to note that the second research question was tested and answered here. The Efficiency Gap formula is effective in not only calculating the number of wasted votes in each district, but as a part of these models it gives us statistically significant results when looking at the effect of population shifts on wasted

votes. Although it will undoubtedly still have critics, it can and should be used as a variable in other scientific research within the field of Political Science in the future.

## DISCUSSION

My research questions address two areas that are missing from the current discussion of political geography and redistricting. The first, is whether the efficiency gap is an effective formula to measure how wasted votes are increased by population shifts within congressional districts between redistricting cycles. The second, is to examine the effect of geographic population distribution (rural vs. urban) on the amount of wasted votes in an election cycle. I find that population shifts have a significant effect on wasted votes in rural districts in both the 2012 and 2018 election cycles, and in the urban districts in the 2018 election cycle. The effect is larger in the urban district than the rural district when comparing significant results from the 2018 data.

This research adds to existing research in the field by examining a randomized selection of congressional districts and comparing the number of wasted votes in rural districts to that in urban districts. It is a meaningful test of the efficiency gap standard to measure something besides intentional, partisan gerrymanders. It adds data to the field of political geography and gives a good baseline to be able to expand a similar research design to incorporate additional time periods (both past and future). It also supports the research done by Bill Bishop and Robert Cushing in *The Big Sort* (Bishop and Cushing, 2009). The increase in wasted votes connected to population in three of the four models, in addition to the high percentage of a single party consistently winning election in the districts from our random sample, are further evidence of geographic population shifts exhibiting a self-sorting pattern in America. Comparing the 2012 results to the results

from 2018, we see that there was a larger effect in the rural congressional districts, indicating that these districts were drawn biased in favor of Republicans. Likewise we can interpret the results of the 2012 election cycle for the urban districts to show that there was no effect in 2012, the effects were statistically significant, and that these districts were drawn more fairly, without bias. The results in 2018, however, show that population has a large effect on wasted votes. The effects seen here are impressive, especially given the small sample size used. This adds strength to the case that geographic polarization and sorting is happening at a significant level, and that the results here could be generalized and applied to all districts.

In finding support for the theory that population shifts have an effect on wasted votes, we have to consider the difficult question of what comes next. How do we create a solution to the problem of unintentional gerrymandering? The grassroots reform movements among the states might not be the proper solution to this new problem. One idea, an idea that would be a major change from the current American electoral system, is to introduce new requirements for redistricting and to possibly remove or alter older ones. Future research should help to inform possible solutions.

Representation is the key to democracy in the United States, specifically representation which is driven by geographic distribution of voters across legislative districts (Chen and Rodden 2013). For districts in which the percentage of votes unequally translates into seats, or districts in which a large number of wasted votes occur this creates a problem of bias. “Studies of electoral bias typically flow from the normative premise that in a two-party system, a party with 50% of the votes should receive 50% of the seats.” (Chen and Rodden, 2013).

Although I generally find support for the findings discussed here, it is important to acknowledge the limitation of methods. There are potential critiques of almost every measure included in the models, including, but not limited to: the efficiency gap, Polsby-Popper and partisan voting index.

Although it was outside the scope of this research, looking at population flows from rural counties to urban counties between states would be an ideal way to expand upon this research and further identify how geographic population shifts can have an effect on wasted votes. This would help us identify not just how urban areas have grown and rural areas have shrunk in overall population, but also how people are moving from rural areas to urban ones and tie this to ideology, partisan and/or lifestyle choices.

I also worked on a limited time series, studying two election cycles within one period of redistricting. Future studies should also expand the time series part of this data, going farther back in time and into the future to gather more electoral cycle data over time. This will help substantiate the claims made herein and be able to expand upon the effects of redistricting.

Another idea for future research, one which came up as a critique from multiple other researchers, was the idea that data at the presidential or congressional level is too high level to truly identify the problem. For this reason, replicating the study with data on a smaller scale could help to support and diversify how these findings can be generalized. “Few studies tackle electoral analysis at a micro-scale due to both methodological difficulties associated with data collection and frequent precinct boundary changes.” (Kinsella et al. 2015). Finally, increasing the sample size by either taking a bigger

sample, say fifty congressional districts instead of thirty would help to further support the validity of these findings.

## CONCLUSION

Narratives, like those which occurred in Florida and New Mexico in the Presidential election of 2000 might be a thing of the past. Americans are sorting themselves into ideologically homogenous geographic clusters – which limits how redistricting can work in our electoral process. Some of the biggest unanswered questions in this field are; If liberal Democrats move to urban areas and those who identify as conservative Republicans stay in rural ones, how can we ever draw a balanced and competitive map? How do we ensure that representation is fair and equal?

If voters who identify as Democrats continue to cluster and homogenize into urban areas, they will create a long-term disadvantage for the Democratic party- based on the way our electoral system currently functions. “Traditional districting principles of contiguity and compactness will generate substantial electoral bias in favor of the Republican Party”(Chen and Rodden, 2013). Even in the absence of racial and partisan gerrymandering, there is a clear effect of population shifts increasing wasted votes in both rural and urban areas. This is the same effect as what we see from intentional gerrymandering, a larger amount of wasted votes. Ultimately, because of this geographic clustering it will be even more difficult to draw a random, representative map.

Past scholars have taken sharp positions in favor (Carson, Crespin, Finocchiaro and Rohde, 2007) and against (Abramowitz, Alexander and Gunning, 2006; McCarty et al., 2009) the hypothesis that gerrymandering affects polarization in the House of Representatives, and scholars have also examined the impact of gerrymandering on the

incumbency advantage (Friedman and Holden, 2009). Other studies have analyzed the effect of racial gerrymandering and the relationship it may have to existing electoral bias (Chen and Rodden, 2013). The efficiency gap measure may only be a starting place in the journey to measure the effects of partisan gerrymandering (both intentional and unintentional). Unfortunately, the Supreme Court ruled in early 2019 that they would not rule on future partisan gerrymandering cases.

The implications of this research are varied and unfortunately, incomplete. We can always do more, examine on a broader level and dive farther back to offer more support. But from the results we can see that population shifts *do* have an effect. The biggest takeaway from this research is that we need to spend time measuring, investigating and studying the effects of unintentional gerrymandering with the same focus and intensity that we use to understand and combat intentional gerrymandering. Controlling for intentional gerrymandering within a state allows us to see the effect that change in population between 2012 and 2018 has on the amount of wasted votes in an election.

The results of this research suggest that the problem may be more complicated than what current redistricting reforms are trying to solve. Unfortunately, in some areas, this geographic, unintentional gerrymandering might be too severe for independent commissions and other proposed redistricting reforms to have much of an impact. Existing reforms are based on the assumption that corrupt politicians are drawing the district lines solely for partisan advantage, and that human geography plays no significant role in generating electoral bias. If Democrats move to urban areas and Republicans stay in rural ones, how can we ever draw a balanced map?



One possible solution to this problem which is worth exploring further, is to change, at the federal level, the requirements for drawing districts. A more extreme solution would be to make changes to the American electoral system, making it more proportional. One proposal for proportional representation is to create multimember House districts with ranked choice voting (Yglesias, 2018).

While there are not concrete solutions to these problems, in fact more questions than answers have been generated from this research, the results discussed here give us a good baseline to know that there is an effect of population shifts on wasted votes and that it is something we should continue to measure with new data generated from past elections but also in upcoming elections (2020) and after the next round of redistricting (2021) from the new census. Similar to intentional partisan gerrymandering, this might not be a completely solvable problem, but rather something American voters understand as a constant challenge to our democratic processes and something we can spread awareness of, and then work to fix where and how we can.

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**APPENDIX A**

**Races in which a candidate belonging to a third party (not Democrat or Republican)  
was the first or second highest vote-getter.**

**Table 5 Data Set: Rural 2018**

<b>State</b>	<b>District</b>	<b>Vote Share</b>	<b>Party</b>
California	2	42,044	No Party
Georgia	8	564	Write-In
Massachusetts	1	58,166	Blank Votes

**Table 6 Data Set: Rural 2012**

<b>State</b>	<b>District</b>	<b>Vote Share</b>	<b>Party</b>
Georgia	8	0	No votes were recorded for any other party.
Massachusetts	1	70,422	Blank/Void
Texas	19	28,824	Libertarian

**Table 7 Data Set: Urban 2018**

<b>State</b>	<b>District</b>	<b>Vote Share</b>	<b>Party</b>
California	13	34,257	Green Party
Massachusetts	7	28,966	Blank Votes
New York	16	42,982	Blank Votes

**Table 8 Data Set: Urban 2012**

<b>State</b>	<b>District</b>	<b>Vote Share</b>	<b>Party</b>
California	13	38,146	No Party Preference
Massachusetts	7	41,199	Independent
New York	7	29,692	Blank/Void
New York	13	40,718	Blank/Void