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How do SMD redistricting institutions affect Partisan Disproportionality, Incumbency Re-election and Voter Turnout?

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1. Introduction

The implications of redistricting can be disastrous for a political party. In the Spring of 2003, eleven Texas Democratic State Senators dubbed the "Texas Eleven", fled the state of Texas for forty-five days camping out in Albuquerque, New Mexico to prevent a quorum needed for Texas to pass a new redistricting map. The Texas Eleven knew the stakes. After finally losing the Texas House of Representatives in 2002, Texas Democrats were next to powerless to stop a Republican backed partisan redistricting plan for new districts in elections to the U.S. House of Representatives (Bickerstaff & DeLay, 2007). After a forty-five-day standoff seldom seen outside of a Western Movie, Texas Republicans officially passed and ratified a new Congressional map which saw the Democratic Congressional majority erode from a 17 to 15 Democratic majority in 2002 to a 21 to 11 Republican majority in 2004.

Electoral realities like these begs the question, what electoral implications can come from redistricting institutions and what types of redistricting institutions are these effects seen to the greatest degree? First, partisan redistricting institutions can theoretically contribute to increased partisan disproportionality and increased incumbency reelection rates (Seabrook, 2017). Partisan disproportionality theoretically refers to the disproportionality between the percentage of seats in the legislature won by a party and the percentage of votes received system-wide by the same measured party (Gelman & King, 1990). Partisan disproportionality is often a primary consequence of partisan gerrymanders in political redistricting. Partisan disproportionality is most likely to occur within a Single-Member District (SMD) redistricting institution, where one legislator is elected in a geographically specified district whose geographic effect inherently makes results disproportionate to some degree (Johnston, 2002). Within SMD electoral systems, parties gain legislative majorities by winning a majority of districts, not directly by winning a

majority or plurality of the vote share systemwide (Lockerbie, 1999). No seats are won by parties that do not finish first in at least one district.

Parties often by consequence increase disproportionality in SMD institutions by gerrymandering where parties draw districts solely for political gain instead of maintaining communities of interest or geographic contiguity. Within successful gerrymanders, increased aggregate partisan disproportionality is often a sign of a successful partisan-maximization redistricting as a certain party wins a higher percentage of seats in the legislature through gerrymandering districts to their political advantage than they receive in the share of the vote systemwide. To maximize their chances of winning majorities, party actors often draw districts that yield predictable results that foster partisan disproportionality by allowing a party to maximize seat gains (Seabrook, 2017). However, in this partisan-maximization gerrymander, partisan actors exchange potential maximum seat gain for incumbent safety as newly drawn districts weaken the safety of some incumbents potentially limiting incumbency re-election rates (Lyons & Galderisi, 1995). Redistricting institutions can also be drawn to favor incumbency re-election. Individual incumbents often push for incumbency protection gerrymanders where districts favor high incumbency reelection rates. Incumbents thus “bake-in” their own political power by boosting their chances at re-election by creating safe districts, districts with a significant partisan lean that render elections in that district as non-competitive (Pildes, 2004).

Redistricting institutions themselves depending on their form, can either facilitate or hinder partisan redistricting. Unified partisan redistricting institutions, where all actors who have final approval over a redistricting institution are controlled by the same party, are predicted to have a greater incentives to create a partisan-maximization gerrymanders (Seabrook, 2017). Without opposition party control or an independent redistricting commission who removes direct

approval away from partisan actors, partisan unified regimes have a greater opportunity to induce partisan gerrymanders as they have fewer institutional hurdles to jump through. In bipartisan regimes, partisan effects from partisan gerrymanders are not as prevalent as opposite party veto-power prevents partisan-maximization redistricting (Basehart & Comer, 1991).

Within partisan controlled redistricting institutions in the United States, opposite party control over one of the three actors constitutionally responsible for redistricting within a state, the upper and lower state legislatures and the Governorship, can lead to a check of partisan ambitions in redistricting which incentivizes the creation of incumbency-protection gerrymanders (Lyons & Galderisi, 1995). For example, in the 2002 Texas redistricting, opposite party control of the Texas State House of Representatives by Democrats prevented Republicans from enacting a partisan maximization gerrymander causing them to invoke a special session of redistricting in 2003 as previously mentioned to redistrict.

In Western Europe, there are two countries that use SMD electoral systems and therefore face redistricting issues: The United Kingdom and France. In the UK, the inherent parliamentary system makes bipartisan regimes improbable in their redistricting institution as redistricting is under the direct approval of the House of Commons (Clift-Matthews, 2015). While a redistricting could occur under a minority government or coalition government where multiple parties make up the majority, this has not occurred in recent decades. In France, divided government could occur under cohabitation where the President and PM, the head of the National Assembly, are of different parties. However, due to the lack of a constitutionally mandated redistricting and the proximity effect of legislative elections that facilitate unified control, cohabitation redistricting has not occurred in the time span I will cover in this thesis.

Therefore, redistricting institutions in France and England are unified partisan regimes with the expected consequences of higher disproportionality.

On incumbency re-election, redistricting institutions are predicted to have an effect. Incumbents often rely on the partisan lean and personal vote advantage that comes with familiarity of districts (Desposato & Petrocik, 2003). The degree to which a redistricting system increases or decreases an incumbent's familiarity with their districts for partisan advantage through redistricting is predicted to affect incumbency re-election. Further, the stated motive redistricting and institutional design of independent commissions institutions like likely reduces incumbency re-election. In partisan redistricting institutions, due to the inherent oversight of the redistricting process partisan actors often attempt to incumbency protection gerrymanders that facilitate high levels of incumbency re-election such as the 2002 California Redistricting (Grainger, 2010). The partisan control creates a greater opportunity for partisan regimes to protect incumbents than independent redistricting commissions. This difference in opportunity leads me to analyze whether this relationship exists cross-nationally with controls. Since unified redistricting have an additional opportunity to create a partisan maximizing gerrymander that potentially dilutes incumbent's partisan advantage, they are predicted to have lower levels of incumbency re-election when compared to bipartisan redistricting institutions whose opposite party veto power fosters incumbency-protection gerrymanders (Pildes, 2004) (Lyons & Galderisi, 1995).

Furthermore, redistricting regimes can have an impact on voter turnout. Some literature suggests that partisan redistricting institutions in the United States depress voter turnout due by decreasing electoral competitiveness. Whether a person is to vote or not to vote hinges on access to information as voters with a high cost of information almost always do not vote (Hayes &

McKee, 2009). This cost of information increases when voters do not recognize their incumbents, which is common in partisan gerrymanders where non-contiguous districts that decreases an incumbent's name recognition. This decrease in name recognition coupled with lower levels of electoral competition in partisan gerrymanders is viewed to depress voter turnout as the higher cost of information with lower electoral incentives pushes voters to stay home (Hayes & McKee, 2009). Building on this theoretical framework, I test to see whether this relationship exists cross-nationally accounting for SMD majoritarian run-off and multiparty systems.

In response to increased partisan disproportionality, incumbency re-election and lower voter turnout attributed to the partisan control of the redistricting-process in state legislatures, individual states within the United States have replaced their partisan control of redistricting with independent electoral commissions. These independent commissions passed in statewide referendums in the early twenty-first century were marketed to the population as a way to mitigate partisan influences in redistricting (Wildermuth, 2012), (Cohen et. al, 2015). The question ensues to what extent do these independent electoral commissions in practice differ from partisan redistricting institutions on their effects on partisan disproportionality, incumbency reelection rates and voter turnout?

The gap in the current research is on what types of specific redistricting institutions, comparing regimes cross-nationally, impose the greatest effect on partisan disproportionality, incumbency reelection and voter turnout. The current literature on redistricting institutions is mainly limited to the United States and does not directly compare redistricting regimes cross-nationally to individual American states. This limits the collective understanding of the relationship a redistricting institution plays in aggregate disproportionality, incumbency re-

election and voter turnout across nations and across different SMD institutional makeups like multiparty and majoritarian run-off systems. This thesis will focus on this gap and will analyze the redistricting institutions of California, Arizona, Texas, Wisconsin, England and France and their effects on the dependent variables. Aggregate partisan disproportionality is a critical motivation of redistricting institutions as it determines how conductive a redistricting regime is disproportionate in its allocation of seats. Further, I also study incumbency re-election rates as redistricting institutions can foster districts that maximize incumbency re-election at times at the expense of partisan disproportionality or vice versa (Lyons & Galderisi, 1995). Additionally, I study voter turnout as political participation is a premier part of democratic institutions as I look to see if certain aspects of redistricting institutions controlled for institutional variance do increase voter turnout.

These sample of states are picked out because, California and Arizona, represent two of the few American states to change their redistricting regimes to independent redistricting commissions. Texas and Wisconsin are added as they are of comparable partisan competitiveness, either party-dominant or competitive system wide, and are of comparable populations. Further, France and England are included as they add institutional and political diversity to the redistricting institutions comparison. France allows us to study these effects in a SMD-majoritarian run-off system. English constituencies allow us to study the effects in a three-party system where the Liberal Democratic Party has routinely received 10% of the vote systemwide in House of Commons elections. Adding institutional diversity to my sample allows me to test whether the predicted relationships exist cross nationally and through different institutional makeups.

I first turn to aggregate partisan disproportionality where I first predict that partisan redistricting institutions when compared to independent redistricting institutions, will be correlated with higher levels of aggregate partisan disproportionality. I additionally predict that within partisan redistricting institutions, unified regimes will be correlated with higher disproportionality than bipartisan redistricting regimes. Due to greater partisan control of redistricting, the ability to create a partisan gerrymander favors higher levels of partisan disproportionality (Basehart & Comer, 1991). Partisan regimes due to final approval have greater control when compared to independent commissions. Within partisan regimes, unified regimes have greater control and are thus predicted to have more disproportionality. In unified partisan redistricting institutions, state actors opt to maximize partisan disproportionality by diluting their incumbents' individual partisan advantage (Lyons & Galderisi, 1995); (Seabrook, 2017). Further, bipartisan redistricting institutions are often forced to induce incumbency-protection gerrymanders that foster incumbency re-election but limit partisan-maximization that increases disproportionality (Pildes, 2004).

On incumbency, I predict that partisan redistricting regimes will be associated with higher levels of incumbency re-election rates when compared to independent redistricting commissions. Further within partisan regimes, unified redistricting regimes I predict will be associated with lower levels of incumbency re-election rates when compared to bipartisan regimes. First, partisan redistricting commissions due to direct oversight and approval of redistricting plans, have a greater ability to create an incumbency-protection gerrymander that facilitates a higher level of incumbency re-election when compared to independent redistricting commissions (Seabrook, 2017). However, within partisan redistricting regimes, bipartisan redistricting regimes inherently favor incumbency protection gerrymanders that benefits both

party's incumbents as partisan-maximization gerrymanders are blocked by divided government control (Pildes, 2004). These institutional preferences determine my predictions on incumbency re-election.

In addition, I predict that partisan redistricting regimes will be associated with lower voter turnout when compared to independent redistricting commissions. As partisan redistricting institutions have greater oversight and control of the redistricting process, they can further solidify electoral results (Lyons & Galderisi, 1995). These predictable electoral results coupled with the higher cost of voting associated with lower levels of incumbency ID common in gerrymandered districts, decreases the incentive to vote while increasing the cost (Hayes & McKee, 2009). This increased cost and decreased benefit depresses voter turnout. As a result, I predict that partisan regimes cross-nationally will be associated with lower voter turnout when compared to independent commissions as their preference for gerrymandering depresses voter turnout.

Lastly, I examine qualitatively the institutional change of California and Arizona to independent redistricting commissions as a natural experiment on how a change to an independent redistricting commission affects aggregate partisan disproportionality. Variance shown in these results may yield more promising results as other factors that might affect aggregate disproportionality like voter volatility and logged number of seats, are not as big of a factor as they are likely to remain similar when analyzing the same redistricting institution. Further, a qualitative direct comparison allows me to understand the different institutional design, motives and political preconditions of the two commissions and how they facilitate divergent electoral results. Independent redistricting commissions do attempt to mitigate partisan motivations in redistricting and can be expected to reduce incumbency re-election and aggregate

partisan disproportionality (McGhee & Krimm, 2012). On its face, while independent redistricting commissions generally appear to reduce aggregate disproportionality within the two independent commissions the results on disproportionality are distinct.

Looking at the empirical data, I assert that an institutional change to an independent redistricting commission depending on the commission's political preconditions, design and motives can either increase or decrease aggregate partisan disproportionality. In California by removing direct opposite party veto power in a growing one-party state without a partisan competitiveness motive in the establishment of the commission resulted in the commissions increased opportunity to induce disproportionality. In Arizona, the growing politically competitive nature of the state coupled with a political competitiveness criteria and direct partisan selection of commissioners in the regime, created a barrier for disproportionality which depressed aggregate disproportionality within the redistricting regime. These cases I assert qualify the institutional effects independent redistricting commissions have on disproportionality, as the change to an independent commission itself does not uniformly depress aggregate partisan disproportionality within an electoral system.

2. Literature Review

2.1 Electoral Systems and Redistricting:

Single-Member Electoral Districts (SMD) systems are the only type of democratic electoral system studied where district boundaries change. Throughout democratic systems across the globe, the type of electoral system can affect the partisan representation of the legislative body. Based on Duverger's landmark work, plurality single-member-districts (SMD) systems, electoral systems where from each district one member is elected to the legislative body in a single ballot election, are conducive to partisan disproportionality (Duverger, 1964). Due to the geographical constraints of single-member district systems, political parties that receive a significant percentage of support system-wide, but do not receive a plurality of support within any given geographic constituency, gain no representation in the legislature. Voting for such parties will therefore predictably yield little or no representation. Thus, SMD plurality systems induce the psychological effects of strategic voting, where voters view third parties as "unviable" and fearing the fact their votes will be "wasted" and as result are predicted coalesce into two-party system. However, it is hard to theoretically categorize or predict the level of strategic voting as strategic voting is often dependent on an individual's social understanding of the electoral system, not the mechanical realities of the institution (Cox, 1997). Thus, it is hard to definitively predict the level of strategic voting in a specific but generally is more prominent in SMD plurality systems (Cox, 1997)

A variation of the traditional SMD plurality system, the SMD majoritarian system, either run-off or alternative vote, favors a system of multi-partisanship as it increases partisan competition (Duverger, 1964). Either through a run-off system or through the alternative vote systems, where majorities are fulfilled through instant run-offs based on ranked voter choice,

SMD majoritarian electoral systems mitigate partisan pressures of strategic voting. By mitigating the pressures of strategic voting, it is reasonable to foresee increased levels of disproportionality in SMD majoritarian run-off regimes as on the first ballot voters are theoretically more likely to vote for third party's that eventually do not gain significant representation (Cox, 1997).

Proportional Representation (PR) electoral systems (party-list, single transferable vote and mixed member proportional representation) are not affected, nor do they utilize redistricting institutions. Many PR systems attempt to eliminate partisan disproportionality entirely by determining a party's share seats in the legislature based directly on the party's vote share system-wide (ACE Electoral Knowledge Network, 2014). While partisan disproportionality is not completely eliminated in PR systems in practice, due to percentage quotas in order to receive seats, PR systems are not relevant to this study as systems do use redistricting. Without geographically assigned single member districts, there is no redistricting regime nor is there a possibility to gerrymander. Thus, in a study focused on the effects of redistricting institutions, electoral regimes studied will be limited to SMD electoral systems.

2.2 Single-member districts:

Single Member District (SMD) electoral systems return one legislator per geographical constituency. SMD systems include plurality or first past-the-post (FPTP) systems where the candidate with the greatest number of votes in a district wins the election, and majoritarian systems where candidates need to receive outright majorities in their districts through runoff elections or alternative vote systems. Duverger's Law holds that SMD plurality systems favor the formation of a two-party system. Within SMD plurality systems, third parties are disincentivized to form and do not receive strong support due to a low likelihood of winning representation in the legislature (Duverger, 1964). Moreover, due to the electoral restrictions, SMD plurality

systems generally lead to only two viable candidate options (Cox, 1997). However, this mechanical preference for bipartisanship only exists where, as a result of the institutional constraints plurality systems, the electoral viability of a given third-party candidate in a specific district is mechanically diminished as Liberal Democratic strength in geographic constituencies create multipartisanship.

Due to electoral incentives, most notably the diminished need of strategic voting, SMD majoritarian systems mechanically favor multi-party systems when compared to plurality systems as other parties have an increased chance at representation (Duverger, 1964). Since election to a district requires a majority, voters are more mechanically able to vote for minor parties without "wasting their votes". However, the applicability of Duverger's Law across all SMD plurality systems is debated. The United Kingdom is an SMD plurality system that possesses a multi-party competition with representation system-wide through the Liberal Democrats, and through strong regional support by nationalist parties, most-successfully, the Scottish National Party (Dunleavy, 2012).

Nevertheless, Riker argues due to the high levels of Liberal Democrat disproportionality by receiving on average 1% to 10% of the seats in parliament with 15% to 25% of the vote system-wide for 40 years, the Liberal Democrats (previously the Liberal and SDP parties) can distort matters of disproportionality but is not a sufficient counterexample to Duverger's tenants on SMD electoral systems as two parties still dominate representation (Riker, 1982). Further, Duverger's law works on the district levels but aggregation is complicated (Cox, 1997). While theoretical conditions conducive to bipartisanship are met in plurality systems as the systemwide evidence consistent with Duvergerian theories of strategic voting are present, multiple districts do not follow this law as they have more than two candidates who receive significant shares of

the vote in their districts (Cox, 1997). Nevertheless, regardless of the specific uniform effect that strategic voting has on SMD electoral systems, there is reason to believe that the type of electoral system has a theoretical impact on the electoral results which could affect partisan disproportionality or incumbency re-election rates in a given election.

2.3 Partisan Disproportionality:

Partisan Disproportionality is theoretically defined as the difference between a party's proportion of seats in a legislature and the share of votes that party receives system-wide (Gelman & King, 1990). Operationally, individual partisan disproportionality is measured by squaring the difference between the percentage of seats won by a given party by the percentage of votes that the party receives (Gallagher, 1991). In this thesis partisan disproportionality will be measured in an aggregate, by adding the individual partisan disproportionality of all major parties per year per redistricting institution, halving it and taking the square root. For example, if Party A wins 42.4% of the vote in Country X's elections and receives 42.4% of the seats in the legislature A measure of 0 would reflect perfect proportionality an equal representation of the system-wide vote share to the percentage of seats (Gallagher, 1991).

Partisan disproportionality is inherent to some degree within SMD electoral systems due to geographical interaction that creates districts which gives inherently unequal distribution of seats to party vote share (Johnston, 2002). The question is to what degree does disproportionality exist within a system? Within SMD plurality systems, the institution mechanically favors bipartisanship through vote strategic voting coalesces behind two major parties. Since the party with the most votes win no matter what share of the vote that is, there is internal institutional pressure on voters not to "waste" their votes on parties that have a smaller chance to win (Duverger, 1964). As a result, voters are predicted back larger parties through strategic voting.

The geographic interaction creates disproportionality within the system despite heavy institutional pressure for strategic voting (Johnston, 2002).

SMD plurality electoral systems can also foster disproportionality due to concentrated support in select geographic areas that is not homogenous through the system. For example, in the Canadian 2019 Federal Elections, the Conservative party despite receiving a higher percentage of the vote system-wide received significantly fewer seats than the Liberal party who later went on to form a minority government (Meng, 2020). Geographic consolidation of support for the Conservatives in non-marginal constituencies increased disproportionality as they lost critical "swing" constituencies by smaller margins. This however is not always the case if all districts were homogenous in partisanship (Cox, 1997). Nevertheless, SMD systems can create a potential incentive to increase partisan disproportionality through redistricting institutions by gerrymandering as geographic interaction can foster or inhibit a party's chance at winning a majority.

In direct comparison, SMD majoritarian run-off systems, like the French system studied further in this paper, are simple-majoritarian systems where a candidate requires with 50% + 1 of the vote in a certain geographic constituency to win a seat. In France if in a first ballot no candidate receives 50% + 1 of the vote, only finishers with 12.5% of all voters in their district advance to a run-off election where they are the only candidates on the ballot. The SMD majoritarian system theoretically increases partisan disproportionality by mitigating strategic voting (Cox, 1997). Since a third party has an increased opportunity to win the election by advancing to a second ballot, the mechanical viability of that party having representation increases (Duverger, 1964). As a result of the increase in viability, the psychological effect of strategic voting is weakened as voters in SMD majoritarian systems may perceive third-party

candidates as viable and as a result are more likely to vote for them (Duverger, 1964). Weaker strategic voting due to mechanical or sociological reasons presented in SMD majoritarian systems can cause individuals to vote for third parties that may often not be truly viable (Cox, 1997). Theoretically this can exacerbate disproportionality especially in first ballot voting as third parties who receive a higher percentage of the vote ultimately don't get proportional levels of representation by failing to win a majority in their districts.

2.4 Incumbency re-election:

The literature confers that incumbency re-election rates are affected by the type of electoral system and the advantages that the system provides upon incumbents. In the United States, Gelman & King document a strong incumbency advantage for incumbents seeking re-election in the House of Representatives that increased throughout the twentieth century (Gelman & King, 1990). As incumbents, Republicans and Democrats in the House of Representatives, have equal access relevant resources such as taxpayer funded constituent mailings, the frank, and increased name recognition required for high-level fundraising (Lockerbie, 1999). An incumbent's access to resources reinforces the incumbency advantage in the US by deterring high-quality challengers, therefore increasing the incumbent's chances of re-election as low-quality challengers are more easily defeated. (Ashworth & de Mesquita, 2008).

Moreover cross-nationally, Martin et.al identify that not only positive supply conditions such as incumbent's legislative resources and institutional features effect incumbency, but also outside voter demand conditions like high prosperity and low corruption within a regime, can affect incumbency re-election within a state (Martin et. al, 2020). This rate of incumbency is often dependent upon participation of politically active elites who increase incumbency by linking individual candidates to national level phenomena that motivates voters (Jacobson &

Kernell, 1983). The applicability of high incumbency re-election due to an inherent incumbency advantage in the U.S. House of Representatives is debated. Ansolabehere and Gerber report that there is no inherent incumbency bias amongst Democrats and Republicans but the long-term presence of legislative majorities, however, facilitates a higher incumbency advantage to the majority party. The presence of long-term Democratic majorities in the House of Representatives throughout the twentieth century resulted in higher Republican incumbency retirements due to decreasing electoral prospects for GOP incumbents (Ansolabehere and Gerber, 1997). This increased retirement of minority party incumbents, GOP house members from 1956-1992, produced less of an aggregate incumbency advantage for the GOP and as result weakened their chances of winning a House majority. However, Tamas reports that Republicans currently enjoy a higher incumbency advantage due to current favorable districts stemming from the party's control of many redistricting institutions in state legislatures after 2010 (Tamas, 2019). Nevertheless, both conclusions show that a redistricting institution can alter levels of incumbency re-election.

Specifically on redistricting institutions, the type of gerrymander can either create higher levels or lower levels of incumbency re-election depending upon the intent of the redistricting regime. Within the late 20th and early 21st century, Pildes cites a growing concern of bipartisan redistricting institutions in drawing incumbency protection gerrymanders (Pildes, 2004). In bipartisan American institutions, divided partisan control over redistricting gives each party a de-facto veto power over the other side drawing an overtly partisan maximization gerrymander that disadvantages both parties incumbents (Lyons & Galderisi, 1994). Opposite party veto power brings redistricting disputes to an impasse either rectified by court intervention or incumbency protection redistricting. Theoretically since neither party wants to sacrifice their incumbents in a

partisan-seat-maximization gerrymander, in a bipartisan redistricting institution both parties often agree to a redistricting plan that upholds a political status quo, districts that protect their party's incumbents. Incumbency protection gerrymanders previously been very successful as bipartisan redistricting institutions have historically districts that give a great partisan advantage to their incumbents where election results are all but predetermined such as in California in 1992 (Pildes, 2004).

However, Friedman and Holden refute a theoretical rise in incumbency re-election due to bipartisan redistricting institutions, as they demonstrate a decline in incumbency re-election in U.S. House elections throughout the early 21st century. Friedman and Holden attest while the types of redistricting institutions can affect incumbency re-election, they argue that the U.S' declining incumbency re-election rate is consistent with the institutional limitations on partisan gerrymandering implemented by the Voting Rights Act of 1982 (Friedman & Holden, 2009). Since decreases in incumbency are consistent with a smooth time period, occur in elections well after the initial redistricting, and have decreased throughout the early 21st century consistent with the passage of the VRA of 1982, they are not primarily affected by redistricting (Friedman & Holden, 2009) As such, I plan to test through time whether redistricting regimes' institutional makeup such as: independent redistricting institutions v. partisan redistricting institutions and governmental control (bipartisan or unified), with the control of years since redistricting does effect incumbency by inducing or preventing types of gerrymanders. Further all my data operates in elections post VRA of 1982 and I'm only analyzing the elections starting at 1990.

Since there is literature supporting the notion that an electoral system can dictate the institutional limitations of the office, electoral systems can affect the incumbency advantage as incumbents have a lower chance of re-election with decreased access to resources (Ashworth &

de Mesquita, 2008). Nevertheless, the direct aim of this thesis is not to determine a specific incumbency advantage within all electoral systems, but to what degree incumbency re-election is present within different types of redistricting regimes. Building upon previous literature, the incumbency advantage or lack of incumbency advantage may affect incumbency re-election within redistricting regimes through the presence of incumbency protection gerrymanders, as intuitively systems with a lower incumbency advantage may be less successful in implementing gerrymanders as they are forced to further protect incumbents. This may be the case as a lower personal vote associated with weak incumbency advantage increases an incumbent's chance of electoral defeat (Desposato & Petrocik, 2003). The degree to which partisan and independent commissions and unified partisan and bipartisan redistricting regimes differ in their effects on incumbency re-election rates is of interest as I will test this in the thesis.

2.5 Voter Turnout

Another potential effect different redistricting regimes have is on voter turnout. The right to such participation is a hallmark of democracy, and the rate at which citizens actually participate is commonly seen as an indicator of the quality of democracy. Empirical studies show evidence that recent redistricting has a negative effect on voter turnout, as in U.S. House elections, recently redrawn districts are associated with lower levels of incumbency due to voters' lack of familiarity with their incumbents which in turn depresses voter turnout (Hayes and McKee, 2009). Hayes and McKee in their individual-level analysis of voters in U.S. House Elections in 1990-1992, found constituents in recently redrawn districts were half as likely to recognize the name of their incumbent. Voters who do not know the name of their incumbent face a greater informational cost as their participation hinges on their access to information. Due to these higher informational costs, recently redrawn districts see an 8% average decrease in

turnout. The lack of connection to individual incumbents increased voter apathy at the individual level and can negatively impact voter turnout (Hayes & McKee, 2009). Further in the special redistricting of Texas in 2003, districts on aggregate that were specifically changed from the 2002 redistricting saw lower levels of voter turnout when compared to unchanged districts (Hayes & McKee, 2009).

However, others question the effect that institutional variables have on voter turnout cross-nationally. For example, while Blais concedes the compulsory voting does increase turnout the literature does establish a consensus as to how heavy the sanction of abstention needs to be to induce greater turnout (Blais, 2006). Furthermore, Blais articulates that there is a lack of general consensus on whether more competitive elections do indeed lead to higher levels of turnout as many studies report no effect (Blais, 2006). Jackman reports however that the presence of systemwide electoral competitiveness is key in increased turnout cross nationally as competitiveness incentivizes turnout in all districts even those that are electorally non-competitive (Jackman, 1987). Yet Blais remains unconvinced of any institutional connections asserting that that the previous institutional connections to turnout are weak and conditional as they depend on the presence of other factors inherent within nations that are difficult to disentangle (Blais, 2006).

Applying these theoretical results to redistricting institutions, it is possible to foresee that the degree a redistricting institution attempts to gerrymander its districts, whether to increase disproportionality or increase incumbency, can negatively impact voter turnout. For example, in a partisan gerrymander created by a partisan redistricting institution, constituents' lower levels of incumbency recognition coupled with less of a geographic connection to a district could disenchant voters (Hayes & McKee, 2009). This feeling of political disenchantment coupled with

a predictable electoral result, due to the gerrymandering, could depress voter turnout systemwide. However as previously detailed electoral competitiveness and higher turnout has not achieved full consensus cross-nationally, which gives me cause to test whether independent redistricting commissions associated with higher competitiveness do indeed increase turnout to add to the collective understanding. I also plan to account for different electoral realities as Blais suggests by testing across states and controlling for institutional differences using country fixed effects. Further, by testing partisan institutions against commissions I will see if a type of institution inherently depresses electoral competitiveness which in turn limits turnout. Since some literature and intuition confer theoretically that partisan redistricting institutions have a greater opportunity to conduct gerrymanders which results in predictable electoral results, I predict that partisan redistricting institutions compared to independent redistricting systems will be correlated with lower levels of turnout due to decreased electoral competitiveness.

2.6 Partisan Gerrymandering:

Partisan Gerrymandering is commonly referred to the process whereby legislative districts are drawn to fulfill partisan motives against district contiguity or the maintaining of geographic areas of interest. The two major tactics actors use to achieve maximum partisan advantage are packing and cracking. “Packing” refers to a tactic where the opposing party's voters are concentrated within a specific district to mitigate their influence on other districts (Herbert & Jenkins, 2011). By concentrating voters in a specific district, opposing political parties have an increased chance to win other districts. Through “cracking”, a concentrated location of a party's voters is split between two districts (Herbert & Jenkins, 2011). Cracking a geographic stronghold for an opposition party can result in disproportionate representation. For example, in the Texas 2003 redistricting, Republicans wanted to maximize their representation in

democratic leaning Travis county. By consolidating all democratic support or packing into one district, and then splitting or cracking the remaining democratic support by drawing them in with conservative leaning areas, Republicans drew a two to one GOP advantage in a typical democratic area (Bickerstaff & DeLay, 2007) (Figure 1). To achieve this, partisan gerrymandering may take the form of districts that are not geographically contiguous, areas that reflect a common area or region, to achieve perceived maximum partisan efficiency (Pierce et. al, 2011). As a result of a successful partisan-maximization gerrymander, aggregate partisan disproportionality increases as through gerrymandering, a party gains a disproportionate percent of seats compared to its systemwide vote share.

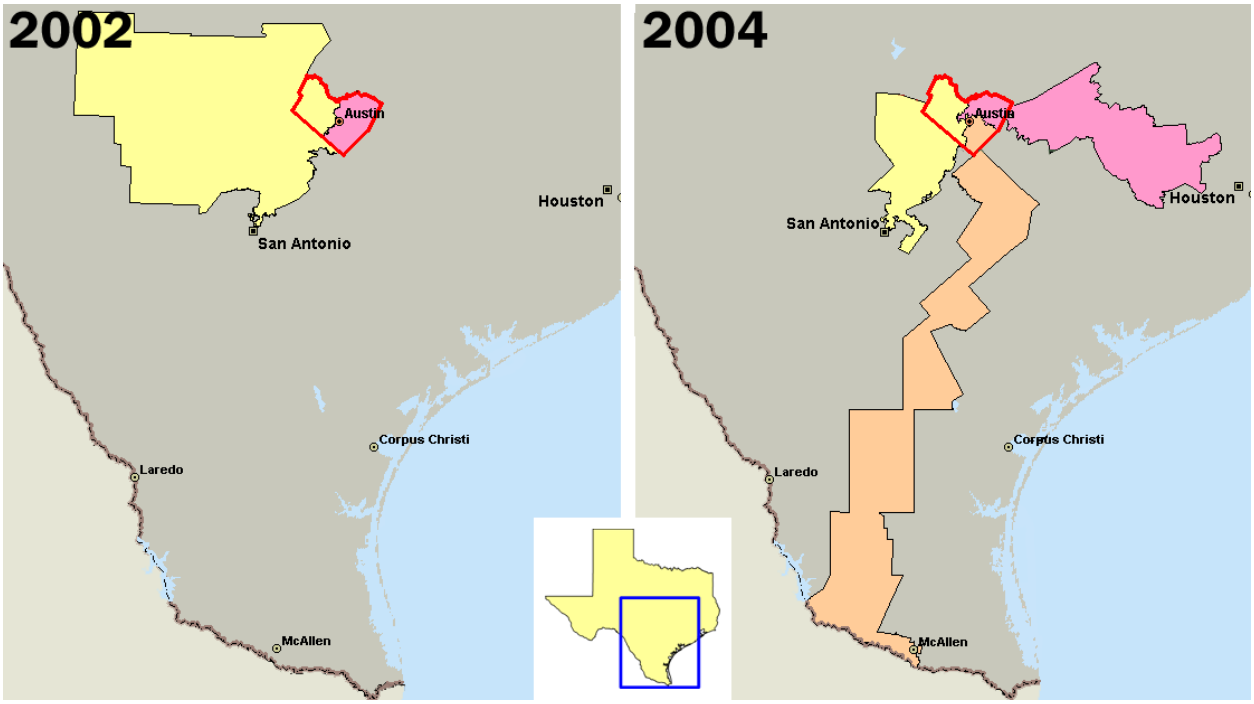

Figure 1: Source: Wikipedia Commons

Across the world, various institutional restrictions have been proposed and adopted that attempts to mitigate perceived partisan disproportionality or high levels of incumbency created by gerrymandering. In response to the gerrymander, electoral systems like Canada and the American States of Arizona and California have transferred their redistricting power from

explicitly political actors to independent commissions that attempt to mitigate the partisan motives behind gerrymandering (Courtney, 2008). States have imposed other institutional restraints on redistricting regimes, such as judicial review where courts can determine if a proposed redistricting map is constitutional by whether it complies with the Voting Rights Act of 1965 in the United States, which constitutionally mandates the presence of majority-minority districts where districts are likely to elect minority candidates (Altman & McDonald). Overall, throughout SMD electoral systems, partisan gerrymandering as a consequence can increase partisan disproportionality or incumbency re-election of the electoral system as the partisan drawing of districts can create predictable results that benefits a party politically.

2.7 Overview of Redistricting Institutions:

2.7.1 General American

The American electoral system for the U.S. House of Representatives can be described simply as a traditional SMD plurality system. Elections for all 435 seats in the United States House of Representatives occur every two years. Reapportionment happens every ten years, as the appropriation of seats is determined by a state's population (Herbert & Jenkins, 2011). After the number of specific seats is given to a particular state, the redistricting process for individual districts is controlled by the state. In so far as the districts comply with the Voting Rights Act of 1965, instituting a requirement for protected majority-minority districts if applicable, and districts have relatively equal citizen voting-age populations, individual states control their redistricting institutions (Herbert & Jenkins, 2011). However, while federal courts do not have jurisdiction to strike down specific redistricting maps of individual states under *Rucho v. Common Cause, 2018 U.S. Supre, Crt,.*, state courts have jurisdiction to hold their states' redistricting map unconstitutional and have the power strike them down (Liptak, 2019).

Nevertheless, as each individual state like other sovereign countries sets its redistricting system, it is appropriate to compare them directly with other sovereign states cross-nationally.

2.7.2 California

Elections to the U.S. House of Representatives from the state of California, follow a plurality SMD electoral system. Currently, California is classified as an independent-redistricting commission state since the passage of state-wide ballot Proposition 20, the Voters First Act for Congress, in 2010. Before 2010, redistricting was controlled by the California State legislature where districts needed to be approved by simple majorities in both the State Assembly and the State Senate along with gubernatorial approval. However, since the passage of Proposition 20, the 2012 redistricting was and future redistrictings will be conducted by the California Citizens Redistricting Committee (CCRC). The Committee has nominally equal partisan representation, five registered Democrats and Republicans and four no-party preference voters and is subject to some institutional criteria. The commissions criteria state that districts should have population equality, are VRA compliant, have geographic continuity, geographic integrity, and geographic compactness. Some have argued this increased institutional change has resulted in more competitive elections for incumbents (McGhee & Krimm, 2012). Overall, the commission's criteria reflects the attempted separation from political gerrymandering controlled by state-legislatures and can be categorized as less partisan than comparable U.S. States. Further specifics on the exact makeup and motivations of the CCRC and its effects on aggregate partisan disproportionality are thoroughly discussed in the qualitative discussion on independent redistricting institutions in Chapter 6.

2.7.3 Arizona:

Further details on the specifics of Arizona's redistricting institutions will be discussed in the qualitative discussion of Chapter 6. However, in short, elections to the U.S. House of Representatives from the state of Arizona, follows a plurality SMD electoral system. Like California, redistricting in Arizona follows an independent commission after historically being controlled by a simple majority in the Arizona state legislature with gubernatorial approval. The Arizona Independent Commission (AIRC) was established through statewide proposition 106 in 2000 and comprises five individuals per redistricting (two Republicans, two Democrats and a non-partisan chair). The AIRC has overseen the redistricting of 2002, and 2012. The AIRC has the same commission criteria as the CCRC but also states that districts should attempt to be politically competitive (Arizona State Constitution). Like California, the institutional limitations of the AIRC are sufficient to categorize Arizona's redistricting regime as less partisan compared to other partisan controlled redistricting systems.

2.7.4 Texas:

Texas is a SMD plurality electoral system. Texas as a redistricting institution follows the traditional state-legislatures method that require new districts to be drawn and approved by simple majorities in both chambers of the state legislature and approved by the governor. The state-legislature model typically is an overtly partisan bargaining system with each of the three institutions having inherent veto power. For example, the opposite partisan control of one of the three institutions can prevent a disproportionate partisan redistricting plan from being passed. In 2001 due to the fact that Democrats controlled the Texas State House of Representatives, they refused to pass a new redistricting plan backed by the Republican controlled State Senate and Governor (Bickerstaff & DeLay, 2007). As a result, the courts controlled the 2002 redistricting and maintained the previous districts due to the "hesitation to undo the work of one political

party for the benefit of another". After taking the majority in the Texas State House of Representatives, Republicans would later go on to create a new map in 2003 a partisan maximization gerrymander heavily in favor of Republicans (Bickerstaff & DeLay, 2007). As such, Texas is categorized as a partisan redistricting regime.

2.7.5 Wisconsin:

Wisconsin is a SMD plurality system in which its redistricting institution follows the traditional state-legislature method. Like Texas, in Wisconsin new districts are drawn and approved by simple majorities in both chambers of the state legislature and approved by the governor. Wisconsin likewise has a system that can categorized as partisan. However, each redistricting measured, occurred under divided government excluding the most recent 2012 Partisan Republican redistricting. Despite state-controlled redistricting institutions having minimal formal institutional limitations, only mandatory compliance with the Voting Rights Act of 1965, the state-controlled redistricting institutions of Texas and Wisconsin have the informal institutional limitations of the governor and both houses of the state legislature. Wisconsin is more accustomed to these informal limitations when compared to Texas who has had one party dominance statewide in redistricting since 2003.

2.7.6 England:

The electoral system of the United Kingdom in the House of Commons is an SMD multiparty plurality system. Since 2011 elections are required at least every five years or required when parliament is dissolved. However, this institutional requirement may soon be removed as the current conservative government has drafted a repeal of the 2011 Fixed Term Parliaments Act. For purposes of this paper, I only look at the results of the English constituencies as other parts of the UK are dominated by strong regional nationalist parties most

notably the Scottish National Party. A multiparty system consisting of strong representation by regional parties can distort findings on the electoral consequences of a particular electoral system (Riker, 1982). Since regional parties have strong pockets of electoral support in particular geographical constituencies and often only run candidates in those constituencies, they will typically have low levels of nationwide support while holding disproportionate representation that is not inherently due to the electoral system. In addition, separation is logically defensible as England controls its own redistricting as it has its own Boundary Commission. As its own redistricting institution, like France or Wisconsin, a comparison works as these redistricting regimes are essentially sovereign.

The Boundary Commission of England is required by the Parliamentary Constituencies Act of 1986 to meet every five years (Clift-Matthews, 2015). It has four members, in addition the Speaker of the Commons serves as an ex-officio member and the Senior Judge as a Deputy Commissioner (Johnston, 2002). The commission is an advisory body that is constrained to propose restraints of no less than 5% population difference while requiring constituencies to be no larger than 13,000 sq km (except for islands). This institutional requirement is aimed to uphold the compactness and geographic integrity of constituencies against gerrymandering as districts reflecting contiguous have historically produced a Labour bias (Johnston, 2002). Nevertheless, the recommendation of the commissions' proposed electoral boundaries must be approved or rejected by parliament. Parliament is under no obligation to accept the commission's recommendations and can choose not to redistrict at all (Clift-Mathews, 2015). Further, the commission is inherently a partisan system as commissioners under Labour governments have produced positive Labour results (Johnston, 2002). Overall, partisan actors have significant control over the commission and hold final institutional approval power on all maps, the key

characteristic of partisan redistricting institutions. I thus characterize the English redistricting system as a partisan redistricting regime. UK elections tend to have less incumbency advantage as lower information on incumbents coupled with the nationalization of districts often is associated with weak personal vote and low incumbency re-election (Smith, 2013). I predict England due to multipartisanship and weak personal vote will have lower levels of incumbency.

2.7.7 France:

The French Electoral System to the National Assembly is a SMD majoritarian run-off system. Elections to the National Assembly directly follow the Presidential election results and typically occur the month after the French Presidential election. This is the case as they are required to occur no less than 60 days preceding the expiration of powers of the outgoing Assembly who is on a fixed five-year term aligned with the presidential term (Code Électoral français, 2011). If no candidate for a given district receives a majority on the first ballot, only candidates who receive 12.5% of the votes of all voters in a district advance to the run-off election. Unlike the other discussed political systems, France due to its majoritarian system favors a system of multipartisanship (Sauger & Grofman, 2016). While small political parties do get representation individually, parties generally obtain majorities by forming political blocs with parties of similar ideologies. This had led to parliamentary majorities under the right, left and introduction of the Centre bloc created for the 2017 election.

The Right bloc includes the traditional center-right parties of France including: the principal center-right party, the Republicans (previously the UMP & RPR), the now defunct center-right Union for French Democracy, and smaller right-wing parties including that were historically in coalitions with the Republicans such as the Diverse Right, Movement for France and New Center parties. If a party in a given election year was in coalition with the Republicans

or its predecessor, they are considered right-bloc. The Left bloc includes the dominant center-left Socialist Party, Diverse Left, Radical Party of the Left and the European Ecologist-Greens that previously were separate parties. Parties that historically were or are in coalition with The Socialist at the measured election are considered to be in the left bloc. The Centre bloc is a newly created bloc for the 2017 election that paired the newly created La Republique En Marche party under the Presidential majority of Emanuel Macron and the center-left successor of the previous Union for French Democracy, Democratic Movement Party. The blocs measured reflect the coalitions at the time of National Assembly elections.

The labels and names of these parties however often change as the political blocs persist. For these reasons, I measure partisan disproportionality in terms of major political blocs. French Redistricting has long been solely for the prerogative of the executive (Sauger & Grofman, 2016). France has established an informal consultative council (composed of magistrates, former politicians, and professors) that in 2002 condemned the government's failure to follow the law that required redistricting after two decennial censuses (Sauger & Grofman, 2016). This informal council, however, has no political power and cannot compel the government to follow its own requirements of redistricting. In the history of the Fifth Republic, France has only had two redistrictings under the current SMD electoral system: in 1986 and 2009. Both of these redistrictings were done under right-bloc governments, leading many to fear a right-bloc bias. However, despite the political redistricting conducted under right-bloc governments, political bias remains minuscule and paradoxically is slightly biased in favor of left-bloc candidates (Sauger & Grofman, 2016). Yet, these realities of complete partisan control of redistricting in practice make France a partisan redistricting system.

While France possesses a partisan legislature, due to its institutional weakness compared to the Executive and the temporal proximity to Presidential elections, the French Legislative elections tend have high Presidential coattails due to a proximity effect. Throughout the history of the Fifth Republic, legislative elections have been viewed as historically unstable due to the fragmented and disorganized political party system (Suleiman, 1994). These disorganized parties along with institutional handicaps on political power reflect the inherent legislative weakness of the French Parliament (Rozenberg & Surel, 2018). This legislative weakness, institutional limitations on the power of the parliament along with the proximity of the elections to the French Presidential election are predicted to render France's legislative election results highly-susceptible to presidential coattails that are increased by the proximity effect. Shugart and Carey assert that due to initial presidential popularity, the party that wins the presidency has a massive advantage to winning a majority in the National Assembly as majority parties tend to benefit in honeymoon elections, elections within the first year of the presidential term (Shugart & Carey, 1992). Elgie et. al argue that presidential power has a greater effect on legislative elections than a general proximity effect, the authors directly point to France as an exception where a proximity effect purports great influence over French National assembly results (Elgie et. al, 2014). Furthermore, Hicken and Stoll confer that France with a moderately powerful President coupled with close-proximity legislative elections reduces competitiveness in legislative elections due to strong presidential coattails (Hicken & Stoll, 2014).

As such, the opportunity to conduct a partisan gerrymander is expected to be reduced as presidential coattails leads to greater voter volatility. The greater volatility and low personal incumbency effect associated with France's institutional weakness, limited scope and low personal incumbent power, and proximity to Presidential Election results impacts the

redistricting system. I predict France is likely to result in inherent lower levels of incumbency and higher disproportionality due to the overall instability of the redistricting system when compared to other redistricting institutions.

3. Theory and Hypothesis

Redistricting institutions and their effects on incumbency re-election and aggregate partisan disproportionality are dependent upon opportunity and ability. If the purpose of a redistricting institution is to foster election results that maximize incumbency, intuitively their effectiveness rests on the extent to which this redistricting institution creates predictable outcomes (Lyons & Galderisi, 1995). In legislative elections, the gerrymander is the principal tool in creating predictable outcomes. By drawing districts with predictable results, the redistricting institution to a certain degree controls the results of elections and as a consequence incumbency re-election rates, aggregate partisan disproportionality and voter turnout.

However, the extent of control and opportunity within a given redistricting institution varies based upon the institutional limitations of the regime. These institutional limitations and corresponding control over redistricting depends greatly on whether an institution has partisan oversight and whether that redistricting institution is characterized by unified or divided governmental control. On the first question, I define partisan redistricting institutions as regimes where elected partisan officials directly approve new redistricting maps. This directly contrasts with independent citizen commissions, where the power to create and ratify new districts is institutionally separated from directly elected partisan actors. In this study, the redistricting regimes of Texas, Wisconsin, France and England are characterized as partisan due to the fact that their redistricting institutions require final approval by elected political actors. Simply the institutional make up of a redistricting regime, specifically its power of final approval over redistricting, gives greater opportunity for partisan actors, through gerrymanders or similar schemes, to manipulate election results when compared to independent redistricting regimes (Seabrook, 2017) (Lyons & Galderisi, 1995).

Within partisan redistricting institutions, the opportunity to redistrict to create favorable partisan electoral results also depends upon the type of partisan control. Regimes operating under unified partisan control present distinctive electoral incentives compared to those under divided. In multibranch systems such as the traditional American system, divided government where an opposite political party controls a state legislature or governor's mansion, veto power is prevalent (Pildes, 2004). Like traditional legislation, bipartisan redistricting regimes fosters political conflict and dampens political control by one party over the regime. Opposition parties often use their influence as a veto to prevent new redistricting plans that provide an advantage to the other party (Cohen et. al, 2015). While an opposition party does not have principal control over the redistricting regime, it may possess enough influence to prevent it from being politically disadvantaged in a redistricting process. The presence of divided government control incentivizes the establishment of incumbency protection gerrymanders increase which theoretically increases incumbency re-election (Lyons & Galderisi, 1995). These gerrymanders are specifically designed to create predictable election results for incumbents often maintain the political status quo. As partisan seat-maximization gerrymanders are blocked, divided governmental regimes tend to create districts that protects their parties' respected incumbents, which yields a net positive for both sides and is likely to be ratified. This contrasts with unified partisan redistricting institutions whose direct partisan control incentivizes them to pursue seat maximization. As political parties' raison d'être is to win as many seats as possible, the opportunity to create a redistricting plan that maximizes potential seat gain is the principal motivation (Seabrook, 2017).

Independent redistricting institutions however have less institutional control of election results and have distinct motives when compared to partisan redistricting regimes. The removal

of direct redistricting authority from the legislature institutionally constrains the direct ability of partisan actors to create gerrymanders. Independent commissions, while they differ in composition, typically consist of individual citizens who are not direct partisan actors with an institutional requirement preventing them from running for office (California State Constitution & Arizona State Constitution). Furthermore, the composition of these independent redistricting commissions is balanced with equal representation by party. Independent commissions also have institutional criteria that instruct commissioners to pursue districts that follow specific guidelines such as geographic continuity, integrity and compactness that serve an institutional motivation to mitigate political gerrymandering. By placing direct approval power away from political actors and implementing geographic recommendations that attempt to prevent against tactics used in political gerrymandering, independent redistricting commissions disincentivize political pursuits from occurring such as incumbency protection and partisan seat-maximization gerrymanders.

Independent redistricting commissions institutional motivations theoretically facilitates electoral realities including decreased aggregate partisan disproportionality and increased voter turnout. On aggregate partisan disproportionality, Arizona's commission included a criteria of partisan competitiveness that reflected an institutional motivation to limit disproportionality. With the commission's stated criteria endorsing competitive seats, successful implementation of this recommendation will bring about results that more likely mirror the percentage of the vote statewide reducing disproportionality. Further, more competitive elections in independent commissions likely increase the benefit from voting and theoretically increase voter turnout (Hayes & McKee, 2009). Specifically in California, Proposition 20's passage was primarily campaigned upon California's high levels of incumbency re-election and in the first year under the commission resulted in the greatest upheaval of congressional seniority in the state's history

(Cohen et.al, 2015). These institutional motivations from independent commissions can result in distinct electoral realities.

H1: Partisan redistricting institutions will be correlated with higher levels of aggregate partisan disproportionality when compared to independent redistricting institutions.

On aggregate partisan disproportionality, regimes with the greater political control over redistricting, partisan institutions, I predict will have higher levels of disproportionality then regimes with less political control, independent redistricting commissions. Simply greater political control and less institutional limitations present in partisan redistricting regimes creates further opportunity for a given party to induce a partisan seat-maximization gerrymander. A partisan seat-maximization gerrymander through packing and cracking, maximizes partisan gain as districts are drawn to politically favor a certain party with relative security. As the party gains more seats than proportionate to their vote share, aggregate partisan disproportionality as a consequence increases. Within unified redistricting regimes, partisan actors are often pressured to induce partisan-seat maximization gerrymanders that in consequence increase disproportionality in their favor while bipartisan regimes with divided governmental control often favors incumbency protection gerrymanders (Seabrook, 2017); (Pildes, 2004). Regardless of governmental control of partisan regimes, both have greater control and opportunity gerrymander when compared to independent commissions, to draw districts that increase aggregate disproportionality as they possess ratification power.

H2: In partisan redistricting institutions, regimes with unified governmental control over redistricting will be correlated with higher levels of aggregate partisan disproportionality when compared to bipartisan redistricting regimes.

I additionally predict that within partisan institutions, unified redistricting institutions will be correlated with higher levels of disproportionality because bipartisan governmental control limits partisan-maximization gerrymanders. Simply in bipartisan redistricting regimes, the opposition party will use its veto power to block any redistricting that maximizes seat gain at their party's expense (Pildes, 2004). As a result, bipartisan redistricting regimes adopt incumbency protection gerrymanders where both parties create districts that protect incumbents by making their districts practically unwinnable by the opposition party. While in unified government systems, state legislators are incentivized and pressured from party bosses to create seat-maximization gerrymanders, tailoring districts to be politically favorable as they attempt to create the greatest partisan net seat advantage by diluting support from their incumbents' districts (Seabrook, 2017), (Lyons & Galderisi, 1995). This partisan advantage in unified regimes I predict will increase disproportionality but will ultimately reduce incumbency as incumbents' districts are more vulnerable. Overall, I predict that institutional incentives of bipartisan regimes to create incumbency protection gerrymanders that do not foster disproportionality along with the presence of partisan-maximization gerrymanders will lead to unified partisan regimes being correlated with higher levels of disproportionality.

Further I expect that this relationship will hold when accounting for SMD majoritarian and multiparty systems. First, France I expect will have higher levels of disproportionality due to its institutional mechanism that depresses strategic voting (Cox, 1997). With a multi-ballot system, French voters are less bound by the institutional pressures of strategic voting as many races advance to a runoff. As a result, French voters will more often vote for third parties that ultimately do not get proportionate representation. Thus, I expect France to have higher levels of disproportionality, especially on a 1st ballot, when compared to other systems. Moreover, the

multipartisanship of England will increase disproportionality as voters more often vote for third parties, mainly the Liberal Democrats, who often do not receive proportionate levels of representation in an SMD plurality system. Nevertheless, I still predict that this relationship will exist cross-nationally as unified redistricting institutions despite differences in election mechanisms will still attempt partisan seat-maximization gerrymanders. Through controlling for France's and England's inherent disproportionality by using country fixed effects, I will determine whether the predicted relationship exists due to bipartisanship or because of the institutional mechanisms of France and or England.

H3: Partisan redistricting institutions will be correlated with higher levels of incumbency re-election when compared to independent redistricting institutions.

I predict that partisan redistricting institutions will be correlated with higher levels of incumbency re-election when compared to independent redistricting commissions due to partisan regimes' greater opportunity to create incumbency protection gerrymanders and independent commissions' often stated motivation to reduce incumbency re-election rates. As previously detailed, partisan redistricting institutions with direct partisan oversight, allows partisan actors a greater incentive and opportunity to create gerrymanders (Seabrook, 2017). Party leaders striving to protect their current seat totals as result often push for incumbency protection gerrymanders, especially in bipartisan regimes, that are designed to safeguard their incumbents by drawing noncontiguous districts that boosts the partisan advantage of the districts (Pildes, 2004). By gerrymandering these districts, party officials create predictable results that should lead to high levels of incumbency re-election (Lyons & Galderisi, 1995). Furthermore, due to the fact that independent commissions were often implemented to reduce incumbency re-election, should depress in reality incumbency re-election. For example, the campaign to establish California's

commission in Proposition 20 was campaigned on by supporters to specifically reduce incumbency re-election citing California's high rate of incumbency (Grainger, 2010) (Wildermuth, 2012). An electoral mandate that dictates the intentions of independent commissions likely succeed in reducing incumbency. Further, other independent commissions like Arizona include a partisan competitiveness criteria that attempts to prevent safe districts from being drawn, likely reducing incumbency re-election rates (Arizona State Constitution). All in all, the culmination of these factors leads me to predict higher levels of incumbency re-election in partisan regimes when compared to independent commissions.

H4: In partisan redistricting institutions, institutions with unified government will be correlated with lower levels of incumbency re-election when compared to bi-partisan redistricting regimes.

I additionally predict that unified partisan redistricting regimes will be associated with lower levels of incumbency when compared to bipartisan redistricting regimes due to the implementation of incumbency-protection gerrymanders under divided government. As previously detailed, bipartisan regimes often favor an incumbency protection gerrymander as neither side "loses" and partisan maximization gerrymanders are often blocked (Pildes, 2004) (Barone & Cohen, 2006). Incumbency thus rises in bipartisan systems as incumbent's partisan strength is not diluted as it is in partisan maximization gerrymanders (Lyons and Galderisi, 1995). Lyons and Galderisi confirm this as they found that within the U.S's 1992 redistricting, incumbency was highest in bipartisan redistricting regimes. As such, I plan to test whether this relationship holds in various elections after 1992 and within partisan regimes of France and England representing an SMD majoritarian run-off and a true multiparty system, respectively.

I expect this relationship to exist even when accounting for institutional realities in the unified partisan systems of France and England. France due to its high levels of voter volatility

characterized by institutional weakness and proximity effect I predict will be correlated with lower levels of incumbency re-election (Rozenberg & Surel, 2018); (Elgie et.al, 2014). Simply since incumbents have low personal political power and French legislative elections enjoy high proximity effect due to elections typically occurring just weeks after the presidential election, France is predicted to have significantly low levels of incumbency. England is also predicted to have significantly lower levels of incumbency due to a weaker personal vote as voting is often characterized by the national environment (Smith, 2013). Despite these realities I predict the relationship will still exist with country fixed effect controls as I expect unified redistricting regimes cross-nationally to still attempt seat-maximization gerrymanders that ultimately reduces incumbency re-election. Nevertheless, through accounting for these institutional realities by using country fixed effects I will determine whether lower incumbency is due to bipartisanship or just the regimes themselves.

H5: Partisan redistricting institutions will be correlated with lower voter turnout rates when compared to independent redistricting institutions.

Last, I predict that partisan redistricting institutions will be correlated with lower levels of turnout when compared to independent redistricting commissions as greater opportunities to gerrymander depress electoral incentives to vote. As established with direct partisan oversight of the redistricting process, partisan redistricting institutions can gerrymander districts to create predictable results (Lyons & Galderisi, 1995). With fewer institutional restrictions and final authority on what map is established, partisan redistricting regimes can attempt to make a district's electoral results all but certain. This decrease in electoral competitiveness reduces the political incentive to vote. This increased cost associated of voting in turn lowers voter turnout as individuals have less of an incentive to turnout (Hayes & McKee, 2009). Hayes and McKee

further establish that redistricting can negatively affect voter turnout by weakening voters' connections to a district. As partisan gerrymandering creates districts not by areas of interest but for political gain, they are more likely to separate voters from their incumbents during a redistricting. As voters who don't recognize their incumbents are increasingly likely not to vote, voter turnout will be depressed (Hayes and McKee, 2009). Further, independent redistricting institutions' motivations to reduce incumbency and predictable results, likely increased voter turnout by increasing partisan competitiveness (Cohen et. al, 2015). Supporters of independent redistricting reforms such as then-California Governor Arnold Schwarzenegger cited California's long history of high incumbency re-election with only one incumbent losing re-election since 1990 as a reason for adopting commissions to promote competitive electoral results (Wildermuth, 2012). With passage, by increasing the public perception of commissions that reduce predetermined electoral results, I predict that independent commissions will generate higher voter turnout by improving electoral incentives.

I also plan to add years since redistricting to my regressions since the literature gives conflicting theories on their implications on aggregate disproportionality, incumbency and voter turnout. In the previously mentioned partisan-efficiency or "dummymander" model, short-term aggregate disproportionality is expected to increase as long-term incumbency falls (Seabrook, 2017). Simply in partisan redistricting institutions that seek to maximize initial partisan gain do so by drawing political support from their own incumbents to make other districts more competitive (Lyons & Galderisi, 1995). However, in elections further into that districting plan, districts drift away from their initial partisan makeup due to changing political leanings as incumbents are susceptible to losing due to having weaker districts drawn for them by the partisan gerrymander (Seabrook, 2017). As given in the name dummymander, the redistricting

renders the controlling party's incumbents susceptible to loss. As such, the greater years since redistricting is predicted to have a lower incumbency re-election rate with a higher rate of disproportionality.

However, other theoretical observations assert that greater years since redistricting are associated with higher levels of incumbency as redistricting undermines incumbent's personal vote and partisan advantage but through constituent service overtime incumbency increases as personal vote increases. While partisan motivations are the predominant factors in voting for a legislative candidate an individual legislator's personal vote tied to service to constituents in districts can affect the electoral outcome (Cain et. al, 1984). Incumbents try to avoid an uncertain political future by establishing a personal vote with constituents through personal ties and district service (Fenno, 2002). Through services like constituent casework, district travel, securing federal funding to districts, incumbents establish a rapport with their voters and their own personal vote. However, through redistricting, a new electoral district and new voters results in lower name recognition and lower knowledge of the districts. Incumbents are thus more susceptible to loss as they lose their personal incumbency advantage when redistricting brings them a significant number of new voters in their districts (Desposato & Petrocik, 2003). As such, elections just after redistricting where incumbents have less time to establish a personal vote coupled with a lower partisan advantage can result in lower incumbency. Due to these conflicting theories, years since redistricting will be included in regressions to see which theoretical direction wins out.

When analyzing the effects that an institutional change to an independent redistricting commission has on aggregate disproportionality and incumbency re-election, it is important to consider the electoral conditions of the redistricting regime before the change. Depending upon

the political preconditions, a change in the control of a redistricting to an independent redistricting commission or to a bipartisan regime I predict can either create an opportunity or boundary for increased disproportionality or incumbency. For example, the divided governmental control over redistricting such as Texas prior to the 2003 redistricting, prevented the dominant party, the Republicans, from increasing disproportionality. Through unified governmental control Republicans were finally able to increase disproportionality by packing and cracking democratic support (Herbert & Jenkins, 2011). However, while independent redistricting commissions may be intended to remove "partisanship" from redistricting, in the right electoral conditions such as budding one-party systemwide dominance, the transfer away from partisanship to independent commissions may increase disproportionality by removing opposition party veto power. In California, the loss of veto power by Republicans with the establishment of an independent commission saw increased disproportionality when compared prior to the change (Table 5&6). Thus, through qualitative analysis in the redistricting changes of California and Arizona, I'll examine the previous electoral conditions prior to the redistricting change and analyze their effects on aggregate disproportionality and incumbency within an electoral system.

4. Research Design

The purpose of this design is to analyze whether variations in aggregate partisan disproportionality, incumbency re-election and voter turnout exist due to the specific dimensions of redistricting institutions while controlling for alternative explanations and institutional variation (SMD run-off majoritarian and multiparty systems) using country fixed effects. In this design I first define and operationalize my dependent variables. I then specify the elections measured in the study and justify why the regimes are chosen. I next operationalize the descriptive variables, and specify the controls, the alternative explanations and country fixed effects. Lastly, I go over the specific regressions and qualitative analysis I perform on California and Arizona's independent redistricting commissions.

Aggregate Partisan Disproportionality theoretically reflects the degree to which an electoral system produces results that are not equal to the vote share systemwide. Simply this can be understood as the difference between the percent of seats a major party wins in the legislature minus the percent of votes that party receives systemwide (Gelman and King, 1990). The greater the disproportionality, the greater degree that systems legislative makeup is different from the systemwide percentage of the vote. The measure of aggregate partisan disproportionality is created from the Gallagher Index. Operationally, this will be measured as aggregate partisan disproportionality for each major party to create a Gallagher index representing the redistricting regimes disproportionality for each election measured. First, individual disproportionality for a single party is measured by squaring the absolute value difference between the percentage of seats a party receives (Si) by the percent of votes they receive systemwide (Vi) (Gallagher, 1991). I will thus repeat this process for any major party (n). After summing (**Σ**) the major

party's values once (i=1), I take half of that value and then take the square root of the result to get aggregate partisan disproportionality (LSq).

$$LSq = \sqrt{\frac{1}{2}\sum_{i=1}^{n}(|Si - Vi|)^2}$$

Aggregate partisan disproportionality will be measured for each redistricting regime in each election year measured. This measure will not include special elections or redo elections and will only look at elections if all seats within the electoral system are being voted on. Further in the following regressions, I will also measure disproportionality for France's 1st and 2nd ballots with other regimes disproportionality as pair the 1st and 2nd ballot's disproportionality with the other regime's disproportionality into two separate dependent variables.

The measure of incumbency re-election percentages (β), is measured simply by the percentage of all incumbents who were re-elected in a particular election year.

$$\beta = \frac{x}{y} * 100$$

x= number of incumbents who win re-election in a measured election year

y= total number of seats within an electoral system in the measured election year

Operationally, this measure does not include incumbent retirements, non-incumbent party holds, or special election or by-election results. An incumbent will be solely defined as a legislator who was elected in the prior general election, and then re-elected in the measured election. When dealing with thousands of legislators across 30 years, death, entries or exits due to resignation or appointment were beyond the scope of this study and were therefore not tracked. New seats added by reapportionment will be counted in (y) for the measure of incumbency re-election in the given electoral year measured. This is such because strategic

retirement of incumbents reflects an electoral decision as new district boundaries through redistricting and reapportionment can affect that decision (Martin et.al, 2020). This measure of incumbency reelection percentage will be measured in each redistricting regime, per election year.

On voter turnout, theoretically and operationally I define as the percentage of registered voters in a regime who cast a ballot in an election year. I use the voter turnout rates directly from official governmental results, so I do not calculate them individually. All states like Arizona have their own distinct turnout rates, except for England in elections post 2001. For these elections, I use the UK wide turnout rate which I assert is usable since English constituencies make up more than 80 percent of all UK wide constituencies and I expect the other constituencies to have similar turnout rates. Voter turnout will be measured in every redistricting regime, per election year.

This study examines the electoral systems of California, Arizona, Wisconsin, Texas, France, and England. I only look at U.S. House of Representatives, House of Commons and French National Assembly results. Elections measured in California will be: 1990, 1992, 1994, 1996, 1998, 2000, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016, 2018 and 2020. Redistricting measured in California occurred in 1992, 2002, and 2012. Elections measured in Arizona will be: 1990, 1992, 1994, 1996, 1998, 2000, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016, 2018 and 2020. Redistricting measured in Arizona occurred in 1992, 2002, and 2012. Elections measured in Wisconsin will be: 1990, 1992, 1994, 1996, 1998, 2000, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016, 2018 and 2020. Redistricting measured in Wisconsin occurred in 1992, 2002, and 2012. Elections measured in Texas will be: 1990, 1992, 1994, 1996, 1998, 2000, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016, 2018 and 2020. Redistricting

occurred in 1992, 2002, 2003, and 2012. Elections measured in France are 1993, 1997, 2002, 2007, 2012, 2017. Redistricting occurred in 2009. Elections measured in England will be 1992, 1997, 2001, 2005, 2010, 2015, 2017, and 2019. Redistricting occurred in 1997 and 2005.[1] None of the testable and descriptive variables have a correlation with each other at 0.7 or above to be concerning.

These redistricting institutions are chosen because they all have strong democratic norms and represent the diversity of SMD redistricting systems. France and the United Kingdom are of most similar design in their redistricting institutions, except for their difference in SMD electoral systems where England has a plurality system and France a majority run-off system, in which only candidates who receive a minimum of 12.5% of all their districts eligible voters in the first-ballot vote are eligible for the second ballot. The American States of California and Arizona are chosen as they are the states with the longest history of independent commissions. I added the states of Texas and Wisconsin as they have partisan redistricting systems similar to those of California and Arizona prior to their shift to independent commissions, have comparable populations, and similar access to incumbent resources. In my dataset, each redistricting regime will have one observation for each system-wide election since 1990 of aggregate disproportionality, incumbency re-election rates (minus France in four elections due to lack of data) and voter turnout. Descriptive statistics will also be incorporated for each electoral system in a given election year. These descriptive statistics will include years since the last redistricting, the natural logarithm of total number of seats in a system, whether the government was

[1] Due to losing access to STATA, I am not able to display a datasheet of all my data and descriptive variables in the appendix. As such I included this paragraph to indicate the elections measured and when redistrictings occurred.

controlled by a majority party at the time of redistricting (unified or bipartisan), and whether the redistricting regime is a partisan institution or an independent commission.

Within each of the regressions, years since last redistricting is added as a possible explanatory variable to each of the regressions along with Voter Volatility added to the regression on incumbency, while a logarithmic measure on number of seats in an electoral system will be added for the aggregate disproportionality regressions. First, concerning the years since redistricting there are conflicting expectations of the effect on aggregate disproportionality and incumbency re-election rates. Under the traditional model, incumbents initially after redistricting are most vulnerable to losing as new districts often result in less of a personal vote attributed to knowledge of the district (Fenno, 2002); (Desposato & Petrocik, 2003). However, others point to lower incumbency re-election rates later into a redistricting plan in a dummymander model where districts move away from their original partisan intentions due to changing demographics and political preferences. This change ultimately renders incumbents more vulnerable to loss in elections years after redistricting (Seabrook, 2017). On aggregate disproportionality the theories intuitively differ as disproportionality would increase in the traditional model as incumbents' increased advantage further into redistricting adds to disproportionality as incumbents are more likely to survive elections due to a higher level of personal vote. Under the dummymander model disproportionality is highest years after redistricting as changing political attitudes move districts away from their pre-intended results. This in turn mitigates disproportionality in seat-maximization gerrymanders in greater years after redistricting. These conflicting theories give me cause to add them into the regressions to determine the true directional relationship.

Voter volatility is included within the incumbency regression as a control. Intuitively redistricting regimes with high levels of voter volatility are associated with lower levels of incumbency as voters often change their minds. As such, volatility is included to make sure that a statistically low or high level of incumbency re-election is in fact due to the dimension of the redistricting institution, the testable hypothesis, not just associated with high or low volatility. In addition, each dependent variable will be displayed in a timeline plot. This cross-national comparison will help me, and the reader visualize the data directly comparing the tested relationships across redistricting institutions and time.

I calculate Voter Volatility, as a party's change in vote between elections, through the Pedersen index (Pedersen, 1979). The index is simply calculated by:

$$|(x1 - x2) + (y1 - y2)|/2$$

x1= percentage of party 1's share of vote systemwide in election before measured election year

x2= percentage of party 1's share of vote systemwide in election year measured

y1= percentage of party 2's share of vote systemwide in election before measured election year

y2= percentage of party 2's share of vote systemwide in election year measured

The Pedersen Index of Voter volatility is calculated for 3rd party systems (France 2017 & England) by repeating the x1-x2 step for that party as gains and losses. The result will be comparable as the results even out since the index is calculated using absolute value.

For disproportionality, a natural logarithm for number of total seats in a given redistricting system is included since lower numbers of seats may negatively affect aggregate partisan disproportionality. For example, one result in a redistricting institution with a small

number of seats like Arizona has greater effect on the level of aggregate disproportionality than in a larger redistricting system like France. The results of one individual race in Arizona greatly effects the disproportionality within the system. Therefore, this measure as a possible control and explanatory variable is accounted for in the regressions. The measure of seats is logged to mitigate the high discrepancy between large assemblies such as France with 577 seats compared with Arizona with just 9 seats.

For H1, H3, and H5, multivariate regressions will directly compare partisan redistricting institutions to independent redistricting institutions. Regressions were run for all testable variables: aggregate partisan disproportionality, incumbency re-election and voter turnout. I first run the basic model with just the testable variables. Then, I run a full result where these regressions will include alternative explanations and controls such as country fixed effects, dummy variables for England and France. By using country fixed effects, I determine to what degree do SMD majoritarian run-off and multiparty systems affect the dependent variables. Without accounting for institutional variance with country fixed effects, a hypothetical low incumbency in France for example, could bias our regression results by not being accounted for and controlled. Further, by including institutional variance in the regression, I can determine whether a potential relationship exists due to a partisan redistricting institution or is determined solely by the SMD majoritarian system of France or the multiparty system of England.

For H2 and H4 regression's, I only use data from partisan redistricting regimes. Dropping results from independent redistricting commissions, regressions on both aggregate disproportionality and incumbency re-election rates will be run comparing unified and bipartisan redistricting regimes. Like before, I first run a basic regression with just the testable variables and then a full model with controls. These regressions will include the same explanatory

variables and controls, years since redistricting, voter volatility and logged number of seats. Each redistricting regime per year will be either labeled unified or divided government based upon the regime's governmental control at the time of redistricting. While states could indeed transform from unified to divided government or vice versa during the redistricting plan, the unified or bipartisan variable will continue to be categorized based on the governmental control at the time of the map's creation because the effects of that map remain in place. Simply variable will persist for each election result within that redistricting plan unless a change in governmental control brings about new redistricting like the Texas 2003 example. These regressions allow me to observe the testable relationship within partisan systems to see whether control of government affects incumbency or aggregate disproportionality.

After the regressions and their analysis, I turn my attention to the redistricting systems of California and Arizona looking at their change from partisan regimes to independent redistricting commissions. Within both redistricting institutions, the establishment of independent redistricting commissions was promoted to directly mitigate the effects of partisan gerrymanders to either reduce partisan disproportionality or high incumbency reelection rates (Grainger, 2010), (McGhee & Krimm, 2012). Due to this fact, I would expect these systems', pre-commission, will be associated with higher levels of aggregate disproportionality and incumbency re-election. However, through further unpacking, including regressions, I examine the institutional design, motives and political preconditions of these commissions. As a result, I assert that the change in redistricting to independent commissions either creates an opportunity or boundary to greater disproportionality. This study is advantageous as possible alternative explanations are anticipated and controlled for in regressions on aggregate disproportionality and incumbency reelection. Further other controls like incumbents' access to resources, are inherently accounted for as I test

American states where the incumbents enjoy similar access to resources. I hope to be able to unpack the political realities determine a change to an independent redistricting commission on aggregate partisan disproportionality.

5. Findings/Discussion

Table 1 Regression Results: Basic Model (Including Independent Commissions) 1990-2020

	Aggregate Partisan Disproportionality	Aggregate Partisan Disproportionality (Second Ballot)	Incumbency Re-Election	Voter turnout
Partisan Redistricting Institution	1.321 (0.448)	0.808 (0.622)	2.422 (0.581)	-7.657 (0.030)**
Constant	9.877 (0.000)***	9.877 (0.000)***	81.887 (0.000)***	66.872 (0.000)***
Observations	78	78	74	78
R^2	0.0076	0.0032	0.0043	0.0606
Adjusted R^2	-0.0055	-0.0099	-0.0096	0.0482

Estimation procedure: Standard OLS regression (STATA)
Significance: *** p<.01, ** p<.05, * p<.1 (Represented by parenthesis)
Source: University of Michigan Constituency Level Archive, Congressional Quarter U.S. House Elections Database, Arizona Secretary of State's Office, California Secretary of State's Office, Texas Secretary of State's Office Wisconsin Elections Commission

Table 2 Regression Results: Basic Model Partisan Redistricting Regimes

	Aggregate Partisan Disproportionality	Aggregate Partisan Disproportionality (Incl. Second Ballot)	Incumbency Re-Election
Unified Government	1.986 (0.223)	1.158 (0.448)	-3.959 (0.310)
Partisan Redistricting			
Constant	9.969 (0.000)***	9.699 (0.000)***	86.478 (0.000)***
Observations	63	63	59
R^2	0.0243	0.0045	0.0181
Adjusted R^2	0.0083	-0.0068	0.0008

Estimation procedure: Standard OLS regression (STATA)
Significance: *** p<.01, ** p<.05, * p<.1 (Represented by parenthesis)
Source: University of Michigan Constituency Level Archive, Congressional Quarter U.S. House Elections Database, Arizona Secretary of State's Office, California Secretary of State's Office, Texas Secretary of States Office Wisconsin Elections Commission,

Table 3 Regression Results: Full Model with Controls (Including Independent Commissions) 1990-2020

	Aggregate Partisan Disproportionality	Aggregate Partisan Disproportionality (Incl. Second Ballot)	Incumbency Re-Election	Voter turnout
Partisan Redistricting Institution	0.482 (0.778)	0.465 (0.781)	5.946 (0.045)**	-9.432 (0.009)***
Unified Governmental Control	1.029 (0.530)	1.047 (0.514)	2.159 (0.388)	-0.325 (0.914)
Years since last redistricting	-0.040 (0.839)	0.070 (0.715)	0.922 (0.019)**	0.163 (0.692)
Logged Number of Seats in regime	-1.773 (0.066)*	-1.761 (0.062)*		
Voter Volatility			-1.259 (0.000)***	
England (Multi-partisan)	10.651 (0.004)***	10.481 (0.004)***	-12.560 (0.003)***	10.990 (0.025)**
France (Majoritarian)	12.866 (0.002)***	6.661 (0.100)*	-27.818 (0.004)***	2.159 (0.724)
Constant	14.225 (0.000)***	13.740 (0.000)***	81.981 (0.000)***	66.457 (0.000)***
Observations	78	78	74	78
R^2	0.1919	0.1274	0.5460	0.1348
Adjusted R^2	0.1236	0.0537	0.5054	0.0747

Estimation procedure: Standard OLS regression (STATA)
Significance: *** p<.01, ** p<.05, * p<.1 (Represented by parenthesis)
Source: University of Michigan Constituency Level Archive, Congressional Quarter U.S. House Elections Database
Arizona Secretary of State's Office, California Secretary of State's Office, Texas Secretary of State's Office
Wisconsin Elections Commission

Table 4 Regression Results: Full Model with Controls Partisan Redistricting Regimes (1990-2020)

	Aggregate Partisan Disproportionality	Aggregate Partisan Disproportionality (Incl. Second Ballot)	Incumbency Re-Election
Unified Government	2.726 (0.117)	2.676 (0.118)	2.982 (0.288)
Partisan Redistricting			
Years Since Last Redistricting	0.008 (0.966)	0.104 (0.595)	0.935 (0.030)**
Logged Number of Seats in Regime	-3.825 (0.000)***	-3.601 (0.001)***	
Voter Volatility			-1.259 (0.000)***
England	12.523 (0.001)***	15.800 (0.000)***	-13.003 (0.003)***
France	15.850 (0.000)***	11.933 (0.005)***	-27.418 (0.004)***
Constant	19.400 (0.000)***	18.620 (0.000)***	87.417 (0.000)***
Observations	63	63	59
R^2	0.2376	0.2633	0.5964
Adjusted R^2	0.1690	0.1987	0.5583

Estimation procedure: OLS Regression (STATA)
Significance: *** p<.01, ** p<.05, * p<.1 (Represented by parenthesis)
Source: University of Michigan Constituency Level Archive, Congressional Quarter U.S. House Elections Database Arizona Secretary of State's Office, California Secretary of State's Office, Texas Secretary of State's Office Wisconsin Elections Commission

Table 5 Regression Results: Basic Model Disproportionality in California and Arizona

	California (Disproportionality)	Arizona (Disproportionality)
Partisan Redistricting	-7.716 (0.000)***	11.287 (0.002)***
Constant	13.606 (0.000)***	8.013 (0.000)***
Observations	16	16
R^2	0.6174	0.5227
Adjusted R^2	0.5900	0.4887

Estimation procedure: Standard OLS regression (STATA)
Significance: *** p<.01, ** p<.05, * p<.1 (Represented by parenthesis)
Source: University of Michigan Constituency Level Archive, Congressional Quarter U.S. House Elections Database, Arizona Secretary of State's Office, California Secretary of State's Office, Texas Secretary of State's Office Wisconsin Elections Commission,

Table 6 Regression Results: Full Model with Controls Disproportionality in California and Arizona

	California (Disproportionality)	Arizona (Disproportionality)
Unified Government	2.709 (0.147)	-5.53 (0.136)
Partisan Redistricting	-6.561 (0.003)***	8.469 (0.026)**
Years Since Last Redistricting	0.211 (0.413)	0.079 (0.870)
Constant	10.055 (0.001)***	10.462 (0.005)***
Observations	16	16
R^2	0.7020	0.6073
Adjusted R^2	0.6275	0.5091

Estimation procedure: OLS Regression (STATA)
Significance: *** p<.01, ** p<.05, * p<.1 (Represented by parenthesis)
Source: University of Michigan Constituency Level Archive, Congressional Quarter U.S. House Elections Database Arizona Secretary of State's Office, California Secretary of State's Office, Texas Secretary of State's Office Wisconsin Elections Commission

On aggregate partisan disproportionality, I find a small positive increase within partisan redistricting institutions compared to independent redistricting commissions which is consistent with my prediction but not large enough for conventional levels of statistical significance.

Tables 1 and 3 directly compares the levels of aggregate partisan disproportionality in partisan redistricting institutions to independent redistricting commissions. The regressions show under partisan institutions aggregate partisan disproportionality is nominally higher although this effect does not reach conventional statistical significance. Within all observations, and across countries, the inherent difference in disproportionality in partisan redistricting regimes when compared to an independent redistricting commissions, is associated with a .48-point increase (Table 3). However, this increase is minimal compared to the mean disproportionality of 10.035 and highest observed levels of disproportionality measured at 30.49. A less than 1 point increase in disproportionality attributed to partisan redistricting regimes is minimal and could easily be a true negative directional correlation showing decreased disproportionality. In the basic model (Table 1) and in results including France's 2nd ballot disproportionality still show a below a 1.5-point correlated increase in disproportionality associated with partisan redistricting institutions compared to independent redistricting commissions. As such the regression does not meet conventional levels of statistical significance with demonstrated significance at the 0.78 level. Therefore, I cannot from these estimates confirm that inherently partisan redistricting regimes are associated with higher levels of disproportionality than independent redistricting commissions due to partisan gerrymanders.

Nevertheless, country fixed effects show interesting and predictable results. England and France (1st ballot) are indeed associated with statistically significant higher levels of disproportionality when compared to the American states. This follows my prediction as

increased multipartisanship and mechanical decrease in strategic voting increases third party voting systemwide but does not result in proportionate representation. This is further seen in France's substantial decrease in increased disproportionality compared to American states as France's disproportionality in relation to American states is nearly halved after including second ballot results from a 12.866-point increase to a 6.661-point increase (Table 3). This decrease in disproportionality is predictable since third parties often do not make runoff elections, as a result French voters will more likely vote for truly viable candidates in the 2nd ballot as a consequence decreasing disproportionality when compared to the 1st ballot.

Given that my observations are limited in number and sequential within each state, it is also useful to visualize the data as shown in Figure 2 and beyond. Such visualizations show that independent commissions are shown to increase or decrease aggregate partisan disproportionality within a redistricting institution. This detracts from evaluating partisan effects on aggregate disproportionality in regressions as independent commissions are associated with increases and decreases to disproportionality. Figure 2 shows California's change in aggregate partisan disproportionality adjacent to its comparable state in population and partisan control, Texas. This timeline indicates California's change from a partisan redistricting regime to an independent redistricting commission, is associated with an increase in disproportionality. In fact, for every one of the five elections after the reform, disproportionality was higher than in any of the eleven elections proceeding the shift to an independent commission. Moreover, for every one of the post-reform elections, disproportionality in California was higher than in non-reformed Texas.

Figure 3 similarly compares Arizona to similarly sized and situated Wisconsin. Note again that Arizona switched to an independent commission beginning with the 2002 election whereas Wisconsin has remained a partisan redistricting institution. Figure 3 demonstrates the decrease in

aggregate disproportionality within Arizona after its institutional change to an independent redistricting commission, whereas disproportionality in Wisconsin has generally increased over the same period. These relative increases and decreases in disproportionality have in sum created a net neutral effect for independent commissions within regressions. As a result, I am unable to confirm H1 as the varied results of independent redistricting commissions do not uniformly depress aggregate disproportionality as predicted in my theory. However, both graphs show significant changes in levels of disproportionality as a redistricting institution transfers from a partisan redistricting institution to an independent redistricting commission (Tables 5 & 6). These significant changes give cause to investigate the specifics of California and Arizona's independent redistricting commissions as I eventually assert that the preconditions, institutional design and motives a commission either increases or decreases aggregate partisan disproportionality within their respected redistricting regimes.

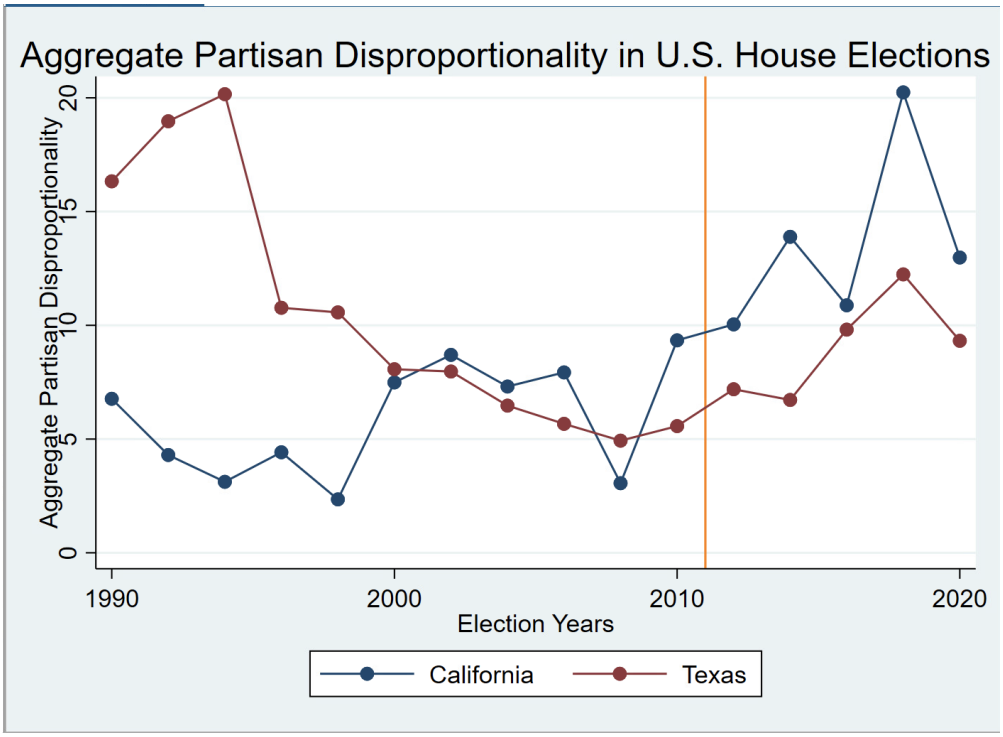

Figure 2 Source: Congressional Quarterly U.S. House Elections Database

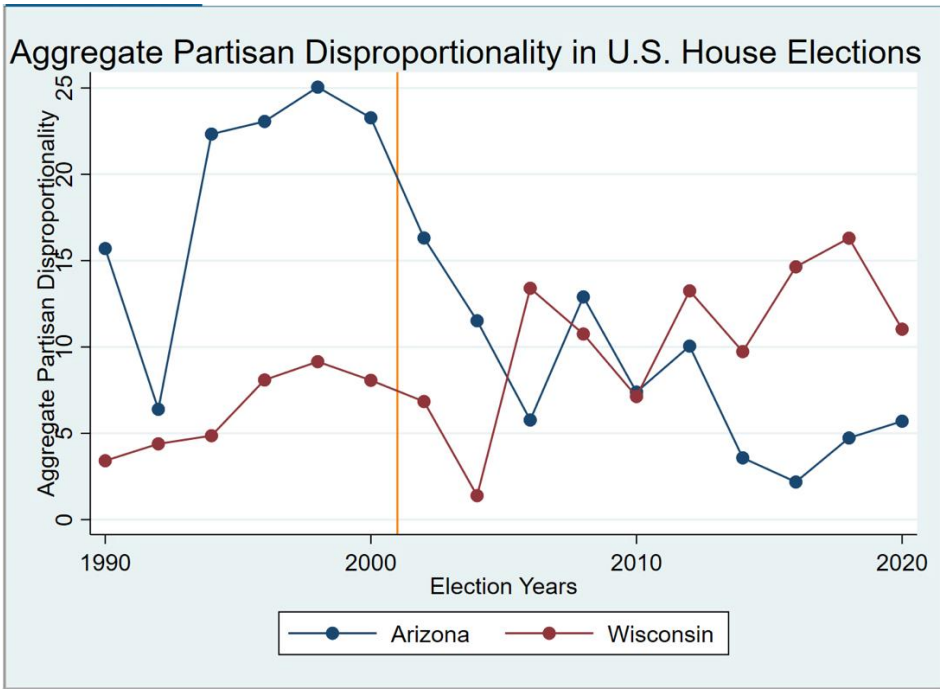

Figure 3 Source: Congressional Quarterly U.S. House Elections Database

After accounting for alternative explanatory variables and controls within my regression including country fixed effects for England and France, I find support for the expectation that lower numbers of seats will favor higher levels of disproportionality. This is likely to be a mechanical effect, as a lower number of seats within a redistricting institution makes it more difficult to achieve proportionality. A couple of close results within a district in a small state can foster great disproportionality by drastically changing the percentage of seats won by a party systemwide. Examining the country fixed effects for England (multiparty system) and France (1st and 2nd ballot disproportionality) I find that controlling for the large number of seats in both countries, these regimes have higher levels of disproportionality than the US states.

Once again, France's levels of disproportionality are significantly less in the second ballot as 2nd ballots typically have only two viable candidates mechanically preventing them from voting for unsuccessful third-party candidates. Recalling that England and France's institutional make-

up as Multiparty and SMD majority run-off systems respectively, my results are thus consistent with the expectation that these institutional features are associated with greater disproportionality. Multiparty and SMD majoritarian systems facilitates disproportionality as greater levels of third party voting that ultimately don't receive proportional representation increases aggregate partisan disproportionality within the system. Disproportionality in England could also in part be exacerbated by poor information due to domination of results based on national politics. Intuitively the number of constituencies make it difficult for voters to know who the viable candidates are, more voters likely "waste their votes" by voting sincerely for candidates that aren't truly viable (Smith, 2013).

Turning to Tables 2 and 4, I exclude all observations under independent commissions and find evidence that within partisan redistricting regimes, unified redistricting regimes are correlated with higher levels of aggregate partisan disproportionality than divided redistricting regimes.

On H2 when we drop the paradoxical results on aggregate disproportionality of the independent redistricting commissions of Arizona and California, aggregate disproportionality shows higher levels of statistical significance associated with a stronger positive relationship with unified partisan control. Previous explanatory variables and controls, England, France and logged number of seats continue to demonstrate statistical significance consistent with the previously detailed expectations. Following the theoretical implications, unified redistricting regimes' disposition to partisan-maximization gerrymanders seems to have translated into higher levels of aggregate partisan disproportionality. A unified redistricting regime according to the data is associated with a 2.73-point increase in aggregate partisan disproportionality when compared to a bipartisan redistricting institution (Table 4). With a mean of 10.9, a nearly 3-point

difference in aggregate disproportionality due to the type of partisan control during redistricting, shows a notable effect a redistricting institution has on aggregate partisan disproportionality stemming from a redistricting regime's incentives.

However, with a small N of 63 the result is only significant at the .12 level. Nevertheless, due to my small N and the associated limitations, I feel confident reporting a notable positive correlation of increased aggregate partisan disproportionality within unified redistricting regimes controlling for seats and distinct institutional voting systems, along with the caveat that the results come just shy of conventional levels of statistical significance and that further study should be determined to see if this relationship holds.

We now turn to the second of my dependent variables: Incumbency re-election rates. Recall that the dependent variable here is the percentage of all incumbents who were re-elected in a particular election year and that my expectation is that partisan institutions are correlated with higher levels of incumbency re-election. On incumbency re-election rates, the evidence supports my hypothesis that partisan redistricting regimes are correlated with higher levels of incumbency re-election than independent redistricting commissions.

On incumbency re-election, evidence supports a statistically significant relationship between partisan control of a redistricting regime and higher levels of incumbency re-election. As previously detailed, the inherent difference attributed to partisan control of a redistricting institution compared to independent redistricting institutions is the final institutional power of direct approval of redistricting plans. This inherent difference within redistricting institutions results in a nearly 6 percent increase in incumbency. With a partisan coefficient of 5.95, a partisan redistricting regime has a significantly higher level of incumbency compared to independent redistricting regimes controlling for institutional variance using country fixed

effects, years since redistricting and voter volatility (Table 3). Without controlling for France's and England's statistically significant lower levels of incumbency and the other controls, increased incumbency attributed to partisan regimes would not reach conventional statistical significance as in the basic model without controls it is associated with only a 2.42 percent increase in incumbency. In the full model I find that partisan redistricting regimes higher levels of incumbency re-election satisfies conventional levels of statistical significance at the .05 level. Even with a limited N and controls for cross-national institutional variance using country fixed effects and for voter volatility, I confirm H3.

Further Table 3 clarifies that incumbency increases with years since redistricting, which is consistent with the traditional incumbency resource model but not with the dummymander model in which incumbency decreases as years since redistricting increases. To quickly reiterate the incumbency resource model, a fresh redistricting often significantly reduces an incumbent's name recognition, as it brings a number of new voters into the district who are unfamiliar with the incumbent. This decreases an incumbent's personal vote which is often needed to win re-election (Fenno, 2002). This, coupled with the fact that incumbents initially after redistricting have less political knowledge of their district and constituents; makes incumbents most vulnerable in the elections closest to redistricting (Desposato & Petrocik, 2003). With a positive and highly significant coefficient on the number of years passed since redistricting, this electoral explanation is supported by the data at a significance level of 0.019. Further for every year that passes since the most recent redistricting, the incumbency re-election rate increases by .9 for a near 1% increase per year. This relationship appears to exist cross-nationally when controlling for country fixed effects.

Addressing the controls, each of them reach levels of statistical significance as predicted. France and England's lower personal vote when compared to the United States is theoretically consistent with lower incumbency re-election rates as individual legislators are less likely to survive due to a lower personal vote and lower incumbency advantage (Smith, 2013);(Rozenberg & Surel, 2018). Further, institutions with higher levels of voter volatility reach negative significance as intuitively, regimes with more voter volatility are strongly and significantly associated with lower levels of incumbency re-election as voters more often change their party vote.

When looking at only partisan redistricting regimes on incumbency re-election, contrary to my theoretical prediction, Table 4 demonstrates a weak positive association between unified partisan redistricting institutions and higher levels of incumbency when compared to bipartisan redistricting institutions with controls.

Table 4, which again excludes independent commissions, shows a slight positive increase in incumbency re-election for unified regimes when compared to bipartisan regimes. Without country fixed effects and institutional controls, unified redistricting institutions showed a predicted negative relationship demonstrating a near 4-point decrease in incumbency re-election associated with unified systems (Table 2). However, as shown in Table 4, when adding controls, a positive coefficient of 2.66 for unified redistricting (compared to bipartisan) is demonstrated which strikes against the predicted negative relationship between unified redistricting and lower incumbency re-election. Theoretically, the incentive in unified partisan redistricting institutions to create partisan-maximization gerrymanders should dilute the voter base of the majority party's incumbents making them susceptible for loss (Seabrook, 2017); (Lyons & Galderisi, 1995). Coupled with the incentive for bipartisan redistricting institutions to favor incumbency

protection gerrymanders, leads us to expect a negative effect for unified redistricting institutions on incumbency re-election rates when compared to bipartisan redistricting institutions. However, when controlling for country fixed effects, alternative explanations such as voter volatility, the opposite directional result is shown as a 2.66% increase in incumbency re-election for unified regimes is demonstrated when compared to bipartisan redistricting institutions.

While this demonstrated relationship does not meet conventional levels of statistical significance, these results nevertheless run counter to Lyons and Galderisi's theoretical and empirical results. The result is additionally insightful, as a positive direction is uncovered only when controls where implemented. As demonstrated in Table 4, the redistricting regimes of France and England, both unified partisan redistricting regimes exhibit statistically significant lower levels of incumbency re-election rates when compared to bipartisan redistricting regimes of the US. Even when controlling for low incumbency re-election rates in the unified redistricting institutions of France and England, unified redistricting institutions show a positive association with increased incumbency when compared to bipartisan regimes. This shows that even when taking into account France and England's low levels of incumbency re-election rates as unified partisan redistricting institutions, unified regimes are still characterized with higher levels of incumbency re-election rates than bipartisan regimes. Overall, this result appears to strike against the theory that partisan-maximization gerrymanders common in unified partisan redistricting regimes will dilute incumbency re-election rates when compared to bipartisan regimes cross-nationally. As a result, I reject H4.

My final dependent variable is voter turnout. On voter turnout, the evidence strongly supports my expectation that partisan redistricting institutions will be correlated with lower levels of voter turnout when compared to independent redistricting commissions.

The results in Table 3 clearly shows partisan control over a redistricting process is inherently associated with a strong negative correlation on voter turnout. With a coefficient of -9.43, a partisan redistricting regime inherently depresses voter turnout by nearly 10% on average when compared to independent redistricting commissions (Table 3). With mean voter turnout across systems at just above 60%, the simple difference in institutional oversight of maps is a near standard deviations worth difference in voter turnout and meets conventional statistical significance at the 0.009 level. This relationship appears to exist cross-nationally accounting for institutional variance by using country fixed effects. This strong negative correlation with partisan redistricting institutions is in line with the theoretical explanation that partisan gerrymanders result in decreased partisan competition and therefore lessens incentives for parties to mobilize and voters to participate. To further reiterate, partisan gerrymanders associated with partisan redistricting regimes minimize the competitiveness of elections as partisan actors secure more certain electoral outcomes (Lyons & Galderisi, 1995). To the extent that voter participation rests on a cost-benefit analysis, the benefits from voting are severely hampered as electoral competitiveness drops which increases voter apathy while lowering turnout rates (Hayes and McKee, 2009). Further, this evidence appears to push back in part against Blais as decreased voter turnout correlated to partisan institutions is present cross-nationally which inherently takes into account different electoral conditions and systems that reflects the institutional diversity of SMD redistricting regimes.

This theoretical explanation coupled with the finding of statistically significant lower levels of incumbency re-election prevalent under independent redistricting commissions appear to demonstrate higher levels of electoral competitiveness within independent redistricting institutions. Like specifically marketed in California, independent redistricting commissions

appear to prevent higher levels of incumbency re-election prevalent in incumbency protection gerrymanders in partisan regimes (McGhee & Krimm, 2012); (Cohen et.al, 2015). This mitigation of political gerrymanders by independent commissions logically reduces the prevalence of predictable electoral results which theoretically and empirically appear to increase voter turnout. All in all, the results appear to validate independent redistricting commissions do indeed produce more competitive electoral results that increase benefits to voting which overall increases voter turnout when compared to partisan institutions. I therefore confirm H5.

Overall, on aggregate partisan disproportionality I fail to demonstrate a statistically significant positive correlation between partisan redistricting institutions and higher levels of aggregate disproportionality (Tables 1 & 3). However, excluding independent commissions from my analysis, I find that compared to bipartisan control, unified partisan control is associated with greater disproportionality, a 2.73-point increase, just shy of conventional statistical significance (Tables 2 & 4). On incumbency re-election, I found stronger results as I demonstrate that partisan redistricting regimes are correlated with statistically significant higher levels of incumbency, a near 6% increase when compared to independent redistricting commissions (Table 3). Nevertheless, I fail to demonstrate any negative correlation between unified redistricting institutions and lower levels of incumbency when compared to bipartisan redistricting institutions as the expected negative relationship without controls demonstrated in the basic model in Table 2 turns into a slight positive relationship with controls shown in Table 4. Lastly, I demonstrate statistically significant evidence that partisan redistricting regimes are correlated with lower levels of voter turnout, more than 9% lower, when compared to independent redistricting commissions when taking into account controls and cross-national variance (Table 3).

However, when specifically analyzing disproportionality within the states of California and Arizona, which have replaced partisan redistricting institutions with independent redistricting commissions, I find mixed and counterintuitive results. It assert that the different political preconditions, institutional design and motivations of the commission directly influences changes in aggregate partisan disproportionality within a redistricting regime. The next section will explore these issues.

6. Analysis of California and Arizona's Independent Commissions

California's political history since the 1990s while being characterized by Democratic party dominance in presidential elections, statewide control has often been divided resulting in the adoption of incumbency-protection gerrymanders. From 1992-2000, California's redistricting regime was characterized as a divided partisan regime due to the election of Republican Governor Pete Wilson in 1990, giving Republicans a veto power in ratification. Governor Wilson used this to block a previously proposed gerrymander by Democrats for fear of political disadvantage (Grainger, 2010). This led to a common consequence of divided government, delegation of redistricting to a politically neutral court commission to introduce a special map that neither party objected to. Further, the presence of divided government led to a "gentlemen's agreement" between both major parties concerning the 2002 redistricting as the map maintained the status quo (Cohen et.al, 2015). This was done by drawing non-contiguous districts to protect their parties' incumbents as shown in Figure 4 (Wildermuth, 2012);(Cohen et. al 2015).

This period of political competitiveness under a partisan redistricting regime was characterized by low levels of disproportionality. The highest recorded disproportionality during this period was 9.34, lower than the cross-institutional mean, and was the last election year under the last partisan redistricting institution. As shown in Tables 5 & 6, in California aggregate partisan disproportionality was nearly 8 points lower during partisan redistricting than under the independent commission. This occurs despite the fact that California's redistricting regime was an inherently a partisan redistricting institution which is expected to be associated with higher disproportionality when compared to independent comissions.

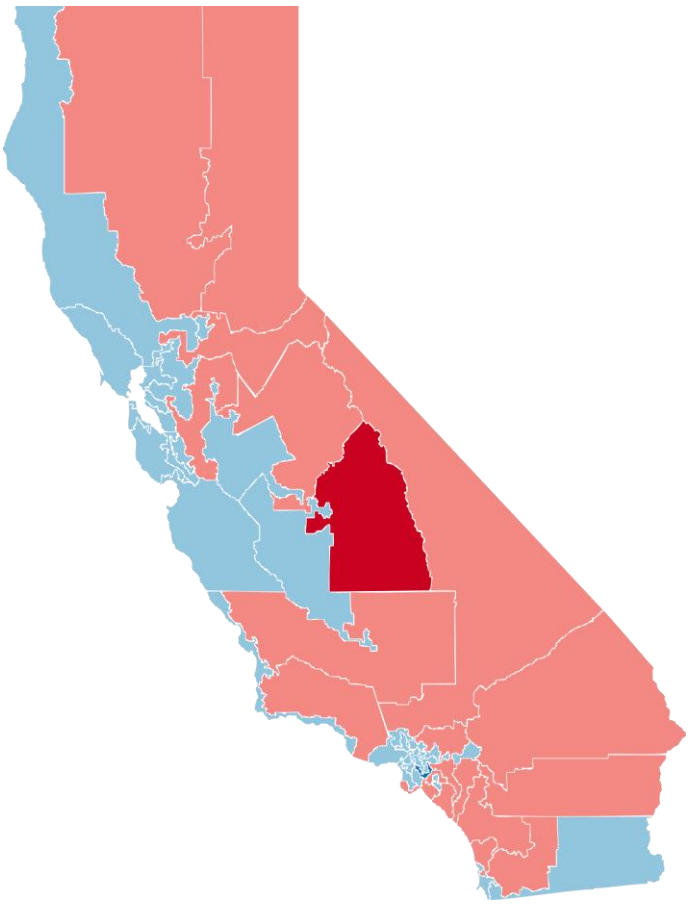

Figure 4: California 2002 Redistricting and Election Results Source: Wikipedia Commons

California's partisan redistricting institutions succeeded in facilitating high levels of incumbency and utilized the incumbency protection gerrymander for this purpose. In the redistricting regime above, geographic continuity is obviously avoided in favor of partisan results (Figure 4). One only has to look at the non-contiguous elongated district boundary for California's 23rd district on the central coast that appears to insulate or pack democratic leaning voters from further inland Republican voting districts (Barone & Cohen, 2006). These incumbency protection gerrymanders were so successful that the Proposition 20 campaigned on such high incumbency citing the fact that only one incumbent who had run for re-election lost within 30 years of California Congressional elections (Wildermuth, 2012) (Cohen et. al, 2015).

California's rapid transition to Democratic party dominance statewide in the early 2000s along with the removal of previously divided government redistricting plans through the transfer to independent commissions, removed a partisan barrier for California's Citizen Redistricting Commission (CCRC) to foster increased aggregate partisan disproportionality in favor of Democrats. Despite not voting for a Republican presidential candidate since George H.W Bush in 1988, Republicans electoral competitiveness statewide persisted throughout the 1990s and 2000s with multiple two-term Republican governors who oversaw redistricting and consequently had respectable levels of representation, achieving at least 35% of California's seats in the U.S. House of Representatives up until 2012, the first election under districts created by the CCRC. The divided governmental control of redistricting in 1992 and commitment to an incumbency protection gerrymander in 2002 maintained a commitment to higher incumbency at the expense of increased disproportionality (Grainger, 2010); (Figure 5). However, this commitment to incumbency protection created a barrier for an ever-growing dominant party from maximizing their seat totals which would in turn render higher levels of aggregate partisan disproportionality. Yet, this barrier to disproportionality attributed to the previous political state of redistricting was removed with institutional redistricting change. The independent redistricting commission's lack of a partisan competitiveness criteria and direct partisan veto facilitated increased disproportionality in favor of Democrats.

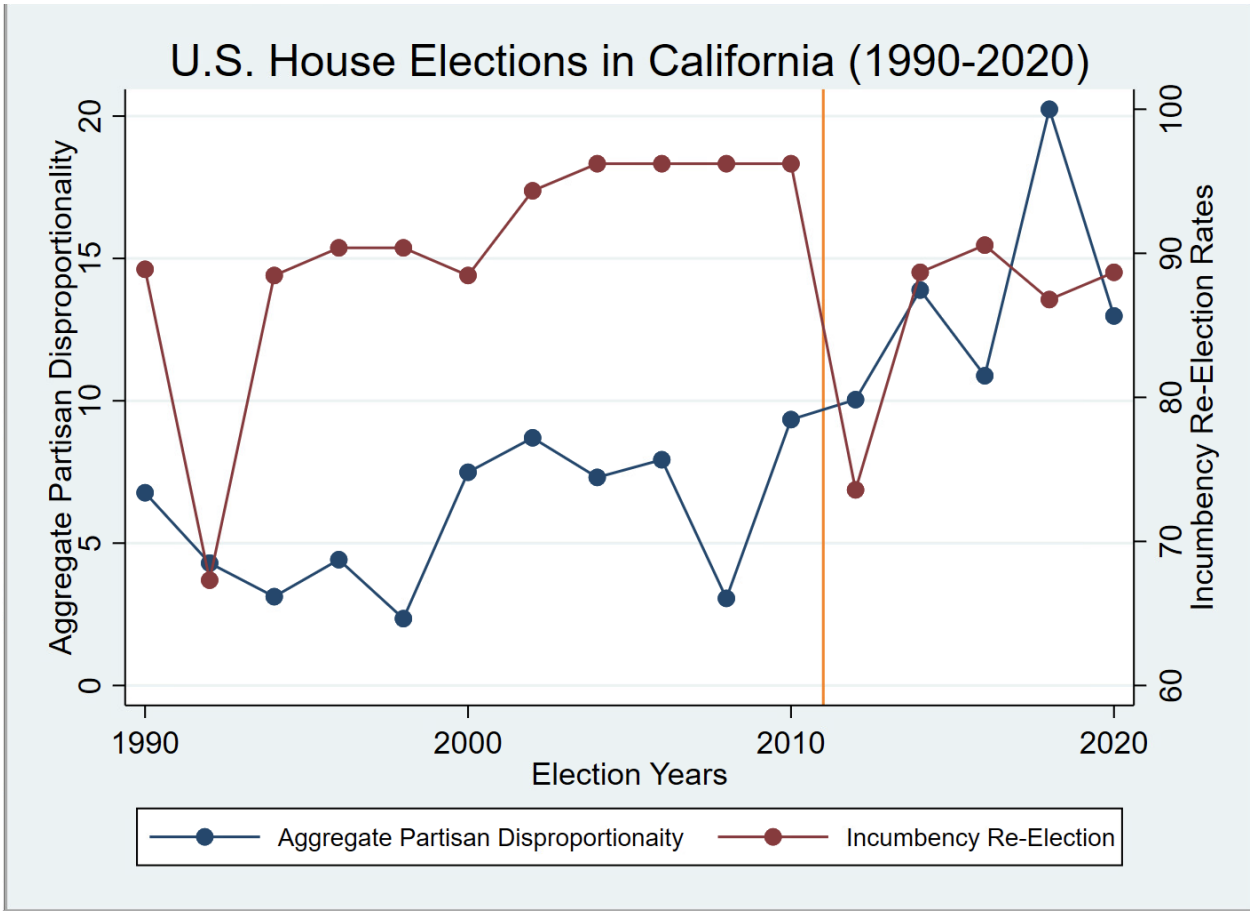

Figure 5 Source: Congressional Quarterly U.S. House Elections Database, Timeline indicates year of change to independent commission

Despite removing direct partisan control and oversight from the redistricting regime, the presence of independent commissions does not completely protect a redistricting institution from partisan influence. First, applicants for the CCRCs commissioners are interviewed and selected by the statewide auditor general's office. With minor limitations that bar elected officials, immediate family members of elected officials, federal lobbyists and frequent donors; any active registered voter in the state of California who has been registered with the same party for at least five years is eligible to submit an application to the State Auditors Panel (California Bureau of State Audits). It is however up to the discretion of the State Auditor panel to select the final 60 applicants, 20 Registered Democrats, 20 Registered Republicans, 20 Decline Party Preference

individuals based upon an undefined measure of qualifications. While there is limited veto power in selecting commissioners as party leaders can remove four of the sixty finalists from consideration, the partisan actors have no direct oversight in selecting the commissioners. With a random draw of the first eight commissioners, the remaining six are chosen by their future colleagues (California Bureau of State Audits). This process undoubtedly reduces direct partisan oversight over who is authorized to draw districts. However, indirect partisan influence can still persist as potential commissioners are not asked to report their specific political beliefs and have the power if selected to choose their own staff. This fact in theory could lead to a disproportionate partisan influence within the commission. For example, if the sample of applicants or those selected were of heavily partisan Democrats and left-leaning non-party preference voters, they would be incentivized to disproportionate redistricting that could advantage the Democrats as the commission does not require unanimity. In reality, while the CCRC significantly reduces the partisan motives and control over redistricting, the selection process can still render a committee that gives a party a political advantage within a redistricting institution that is advertised to voters to reduce partisan advantage within redistricting.

Further, a lack of concrete district requirements given to commissioners of the CCRC adds to California's spike in disproportionality after its institutional change in redistricting. The fourteen CCRC commissioners and staff that they personally appoint, are given general ranked order criteria that the state emphasizes its commissioners to follow in its redistricting plans. These ranked criteria in order are 1. population equality (districts must be similar in population in accordance with the U.S. Constitution). 2. Compliance with the Voting Rights Act of 1965 3. Geographic continuity: all districts should be territorially contiguous except for islands 4. Geographic integrity: districts should minimize division of cities and or communities of interest

and 5. Geographic compactness: to extent practicable districts must not bypass nearby communities for more distant communities (California State Constitution). These ranked criteria give some deference to commissioners on the intentions of an independent redistricting commission and represent the state's motivation to mitigate the lack of geographic continuity and geographic integrity commonplace in the prior incumbency protection gerrymanders (Figure 4). However, the recommendations of geographic continuity, integrity and compactness are simply priorities of the commission given by the state, they are not de jure requirements of the commission (California State Constitution). This fact coupled with the lack of a political competitiveness criteria commonplace in other independent redistricting regimes such as Arizona's has left open the ability to create a redistricting plan that fosters increased aggregate partisan disproportionality. While commissioners are not allowed to district based on partisan data, politically motivated districts still exist.

To see this political reality, I turn to my home county of San Diego County where the subtle makeup of the districts demonstrates potential partisan maximization tactics that strike against the criteria imposed by the state to commissioners. Shown in Figure 6, districts on the surface appear to be consistent with the commission's message of geographic continuity and integrity through protecting communities of interest by dividing districts along recognizable communities, the 49th district, coastal San Diego county and north Orange County, the 50th district, East San Diego County, and the 51st, South San Diego county and all of Imperial county (Cohen et. al, 2015). However, upon further examination districts include key precincts that are out of step with the overall geographic character of the district.

First looking directly at the 49th Congressional district, the coastal strip goes just enough south to paradoxically include the entire campus of the University of California-San Diego, my

home university. This inclusion of the university campus, commonly known to host many student Democratic voters registered on campus, is included at the very-edge of the previous right leaning political district that ultimately proved consequential for Democrats as they would pick up the coastal leaning 49th district in 2018 where aggregate partisan disproportionality was at its highest level within the state at 20.2. Further, in a more immediate partisan maximization tactic, California's newly created 52nd district (Northern San Diego neighborhoods and Poway), includes under further inspection in Figure 7, a densely populated Democratic stronghold of Little Italy located within downtown San Diego. This inclusion of densely populated political areas appears consistent with partisan redistricting methods of cracking to maximize seat gain by incorporating an area outside the intended community of interest for a district in the then more affluent Republican leaning northern San Diego and its suburbs, simply for its political makeup. The inclusion proved critical as in 2012 Democrat Scott Peters unseated longtime Republican Incumbent Brian Bilbray by less than 3% (Cohen et. al 2015). Overall, the removal of direct partisan oversight through independent redistricting has reduced significantly the ability for partisan actors to induce partisan gerrymanders. However, the lack of direct institutional requirements within the independent redistricting commission has in some cases proven compatible with partisan-maximization tactics that have increased disproportionality within California's elections to the U.S. House of Representatives.

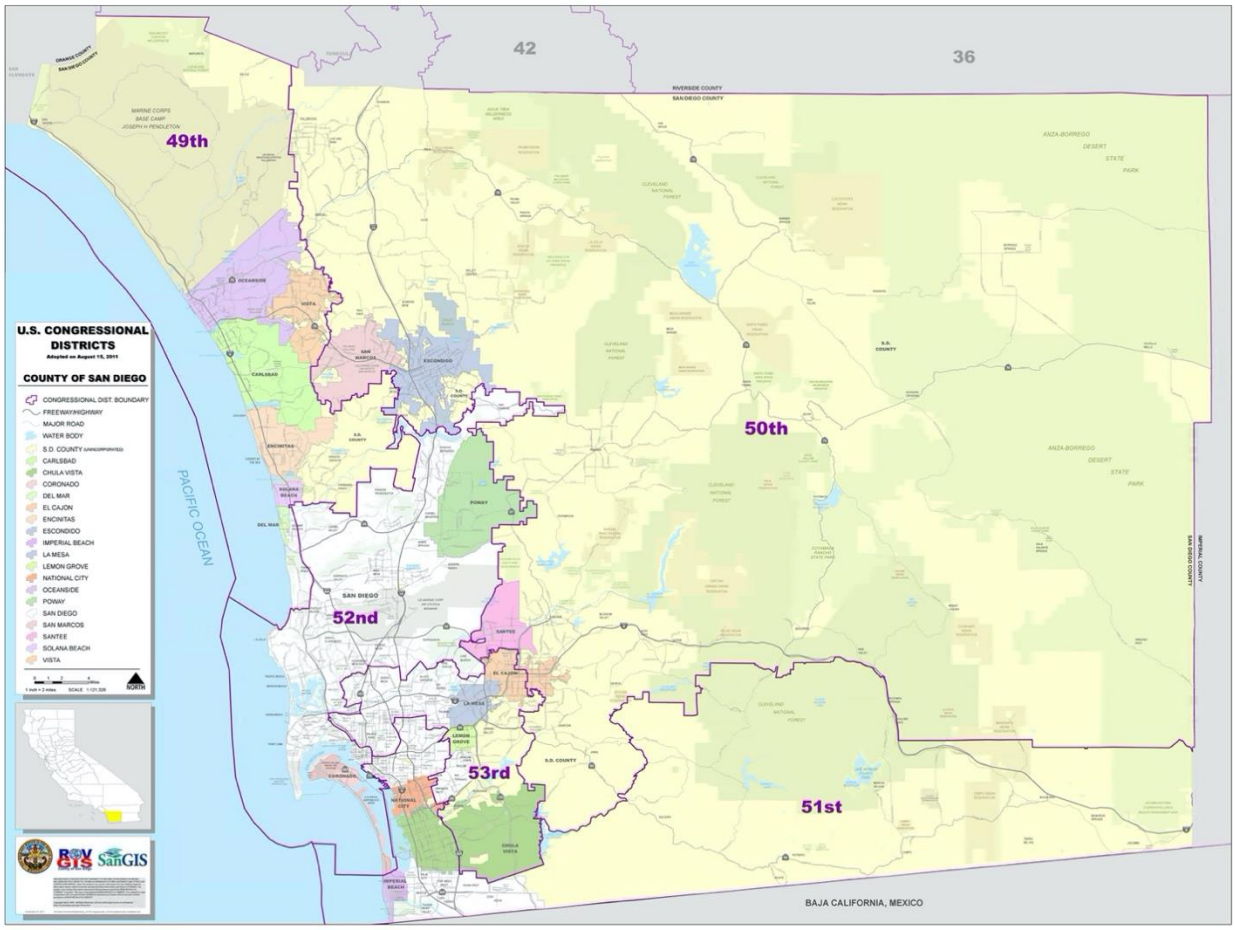

Figure 6: 2012-Present California Congressional Districts in San Diego County Source: San Diego County Register of Voters

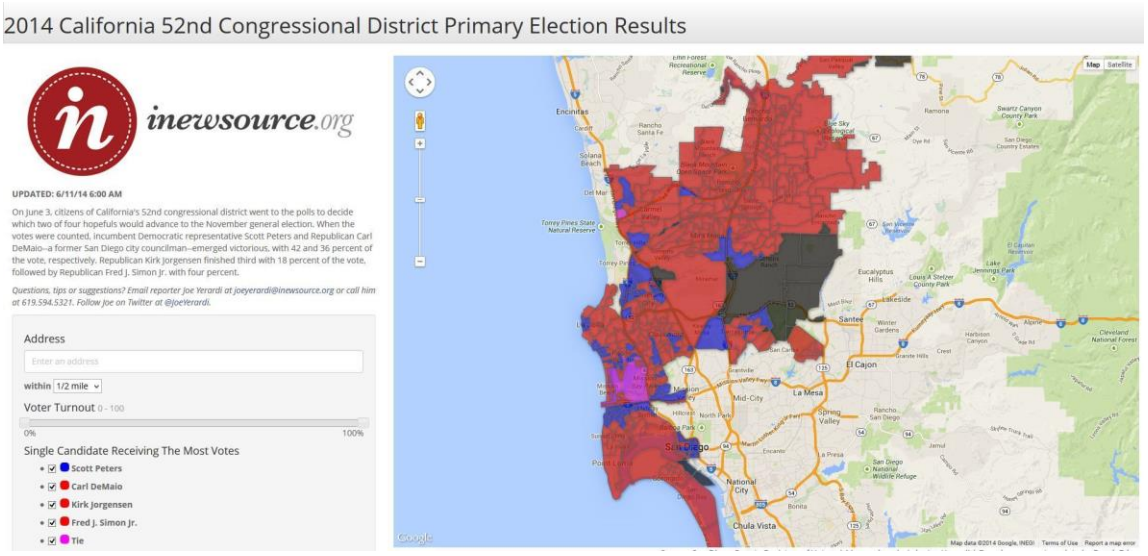

Figure 7: California 52nd Congressional District by precinct

Overall, California's institutional change to independent commissions whose lack partisan veto present in previous divided government regimes has put Republicans at a further electoral disadvantage as political districting tactics persist. The lack of partisan veto power exacerbates disproportionality as prior to institutional reform, divided statewide control pushed California into an incumbency protection-gerrymanders that limited disproportionality (Figure 5). After reform, without an opposition party veto and a lack of a political competitiveness criteria, California has experienced increased disproportionality as partisan tactics seem to persist in an institutionally non-partisan regime. In California due to the removal of the institutional barriers such as the partisan veto that previously prevented disproportionality and increased opportunity to foster disproportionality with increased democratic dominance in the state and lack of a partisan competitiveness criteria, likely contributed to the paradoxical increase in aggregate disproportionality. While the intention of the CCRC was explicitly mentioned to weaken incumbency, a lack of competitive district requirement coupled with the political disposition of the state facilitated the increase in aggregate disproportionality. Further, decreasing disproportionality was not the explicit motivation of the redistricting institution. The institutional makeup of the commission further disadvantages Republicans as in California no-party preference voters overwhelmingly favor Democrats and cannot be removed after being appointed (Baldassare et. al, 2018). The simple political preconditions, institutional makeup and intention of the CCRC proves consequential as I assert these conditions facilitates the increase in aggregate partisan disproportionality in California.

Contrary to California, the different political preconditions and greater partisan institutional makeup of the Arizona Independent Redistricting Commission (AIRC) appears to have facilitated a decrease in aggregate partisan disproportionality contrary to California. In

2000, Arizona voters passed statewide Proposition 106 to establish the AIRC. The AIRC is composed of 2 Democrats, 2 Republicans and 1 Registered Independent to serve as Chair of the commission. The AIRC like the previously discussed CCRC has similar institutional requirements including the ultimate institutional authority of the state auditor's office to determine finalists for the commissioners (Arizona State Constitution). Arizona nevertheless has greater partisan control of their independent commission. Unlike California, the AIRC has the explicit criteria of creating partisan competitiveness along with greater partisan control as commissioners are selected by the four party leaders in the state legislature. Further, partisan actors even have the ability to remove a commissioner for "substantial neglect of duty" or "gross misconduct in office", as utilized by Governor Jan Brewer (R-AZ). This removal however was prevented by the courts as it viewed to be "subject to manipulation by the very people that the commission was designed to insulate from." (Vasilogambros, 2019). Within the AIRC's six criteria, five of which are similar to California, the AIRC adds the criteria of partisan competitiveness as a stated goal of the commissions redistricting. While similar to aforementioned commission in California, commissioners are not obliged to follow the recommendations of the state on this criteria. Nevertheless, the stated goal of increasing partisan competitiveness I assert relays a specific state interest in reducing aggregate partisan disproportionality.

Along with a stated institutional motive to increase electoral competitiveness and greater partisan control of the commission, the political preconditions before the establishment of the AIRC, statewide Republican dominance in a further electorally competitive state, made the transfer to an independent redistricting commission depress aggregate partisan disproportionality. Throughout the 1990s, with the exception of Bill Clinton in 1996,

Republicans won all statewide presidential and gubernatorial elections and dominated congressional elections within the state (Cohen et. al, 2015). However, Democrats managed to scrape divided control of redistricting with a small majority in the Arizona State Senate for the 1992 redistricting. Nevertheless, Republicans' strong electoral performances in such a small state rendered high levels of disproportionality throughout the 1990s as detailed in Figure 7. As Republicans were well positioned to at least maintain the high disproportionality with near unified state control before the 2002 redistricting, the transfer of authority to an independent commission whose state guidelines emphasized improving electoral competitiveness proved consequential. After establishment of the commission, there was a sharp decline in aggregate partisan disproportionality following the adoption of independent redistricting commission in 2002 that I contend created a barrier to disproportionality.

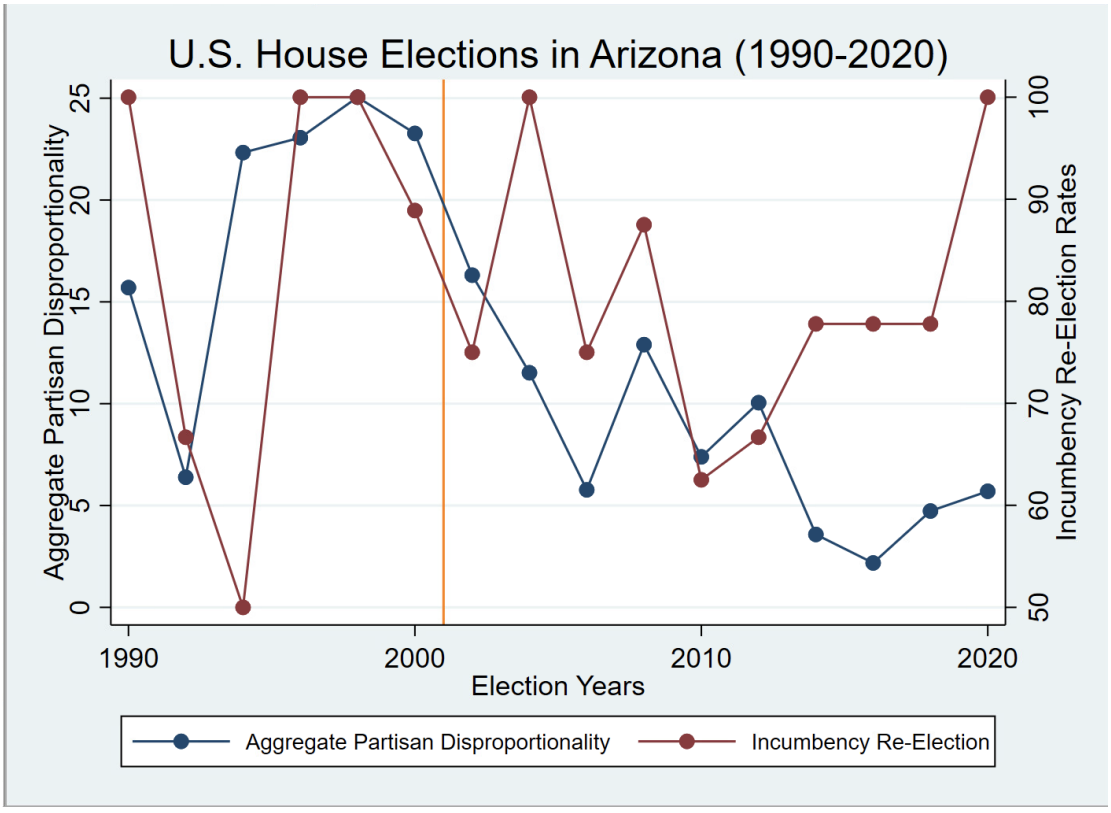

Figure 8: Source: Congressional Quarterly U.S. House Elections Database, Timeline indicates year of change to independent commission

Further evidence of the AIRC's commitment to creating politically competitive results can be seen in map of the 2002 redistricting. While geographic compactness remains a higher stated criteria of the AIRC, evidence shown in Figure 9 clearly demonstrates a gerrymandered district. Immediately looking at the redistricting map, Arizona 2nd Congressional districts' vast size and questionable continuity are explained by historical ethnic tensions between the Navajo and Hopi Native American tribes and as both tribes desired not to be represented by the same congressman (Barone & Cohen, 2006). However, this division was in tune with the commissions desire to increase electoral competitiveness. The division of democratically voting Native American tribes rendered both the 1st and 2nd congressional districts more electorally competitive with the exurban 1st Congressional district being picked up by the Democrats during the 2008 Election (Cohen et. al, 2015). The proposed split of Native American populations was fixed in the 2012 redistricting as both tribes currently reside in the same electoral district making the current 1st district more competitive. Like in California, these outside motivations that have resulted in competitive redistricting, and questioned political impartiality of the AIRC Chairwoman who was attempted to be removed, shows that political redistricting tactics can occur in the AIRC. However, this greater partisan opportunity has decreased disproportionality as partisan actors' greater level of control has instated a de facto veto power that has prevented seat-maximization redistricting from occurring.

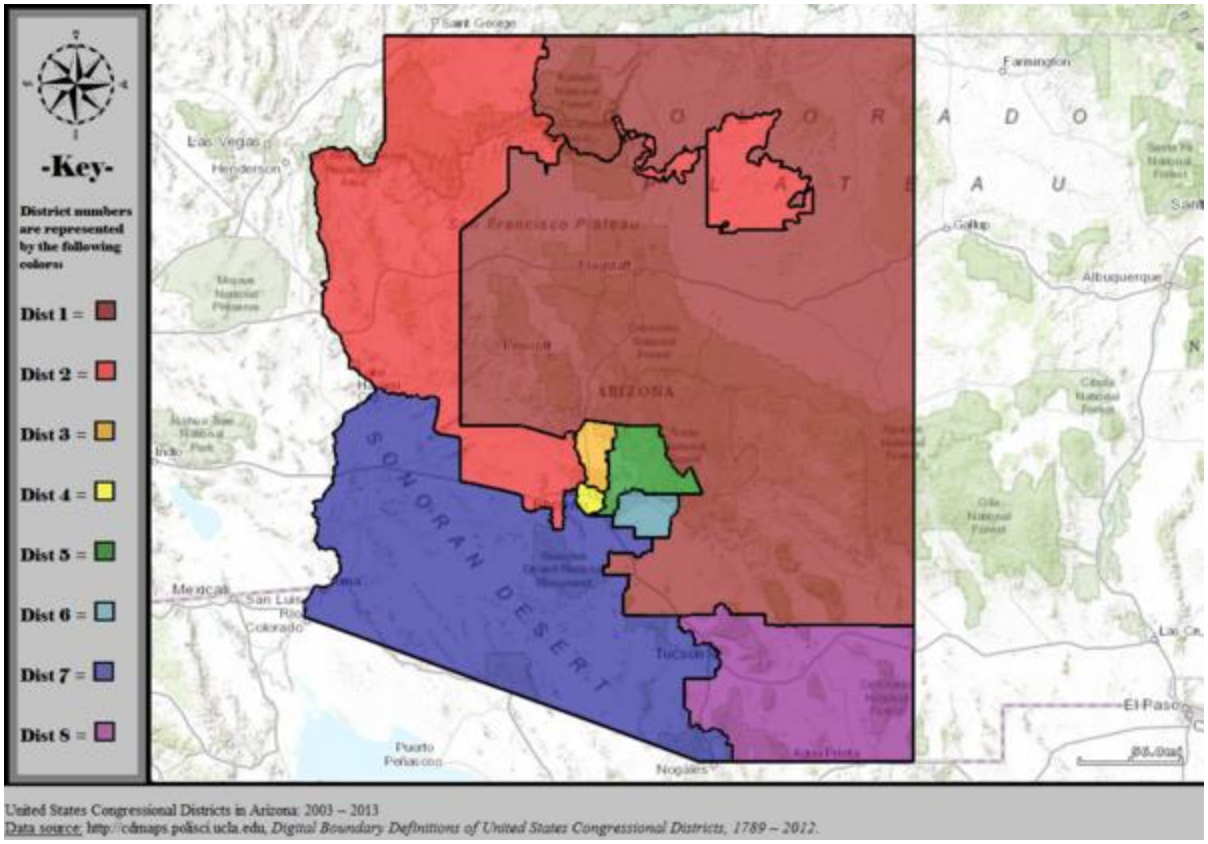

Figure 9: 2002-2010 Arizona Congressional Districts Source: UCLA Department of Political Science

Further evidence of increased political competitiveness stemming from the AIRC's partisan competitiveness mandate is seen in the steady increase in Arizona's voter turnout. As previously established in my regressions and theory, independent redistricting regimes see an increase in voter turnout from increased electoral competitiveness as competition creates an incentive for voters to turnout (Table 3) (Hayes and McKee, 2009). This relationship is clearly demonstrated in Figure 10 where voter turnout in all of Arizona's Presidential elections under the commission exceeded turnout in all other Presidential election years barring one. This differs dramatically when compared to California in Figure 11 whose independent commission does not have a partisan competitiveness criteria and did not see as significant rise in voter turnout. Further, the mean midterm election turnout in Arizona's increased turnout by nearly 4% from 53.36% to 56.96% after changing to an independent commission while California's mean

midterm voter turnout fell nearly 4% from 57.27% to 53.47%. Due to my own regression results supporting that independent commissions are correlated with higher levels of turnout when compared to partisan regimes and the theoretical explanation that voter turnout is increased by electoral competitiveness gives reason to believe the AIRC's specific institutional makeup increased voter turnout through electoral competitiveness. This is supported further by the fact that California and Arizona's commissions have similar institutional criteria except for the AIRC's partisan competitiveness criteria and yet have different results on voter turnout. This leads me to believe that Arizona's partisan competitiveness criteria does indeed increase electoral competitiveness which increases voter turnout and decreases aggregate partisan disproportionality.

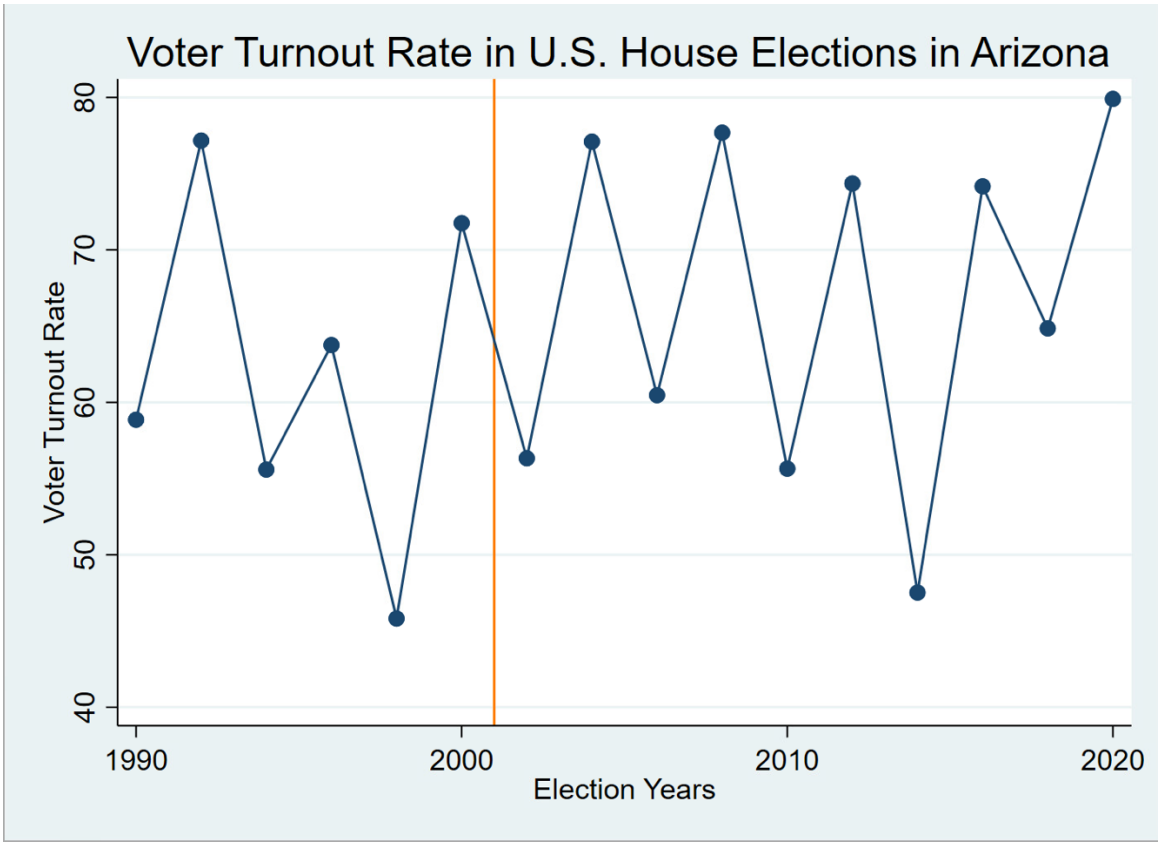

Figure 10: Source: Congressional Quarterly U.S. House Elections Database & University of Michigan Constituency Level Archive, Orange Timeline indicates year of change to independent commission

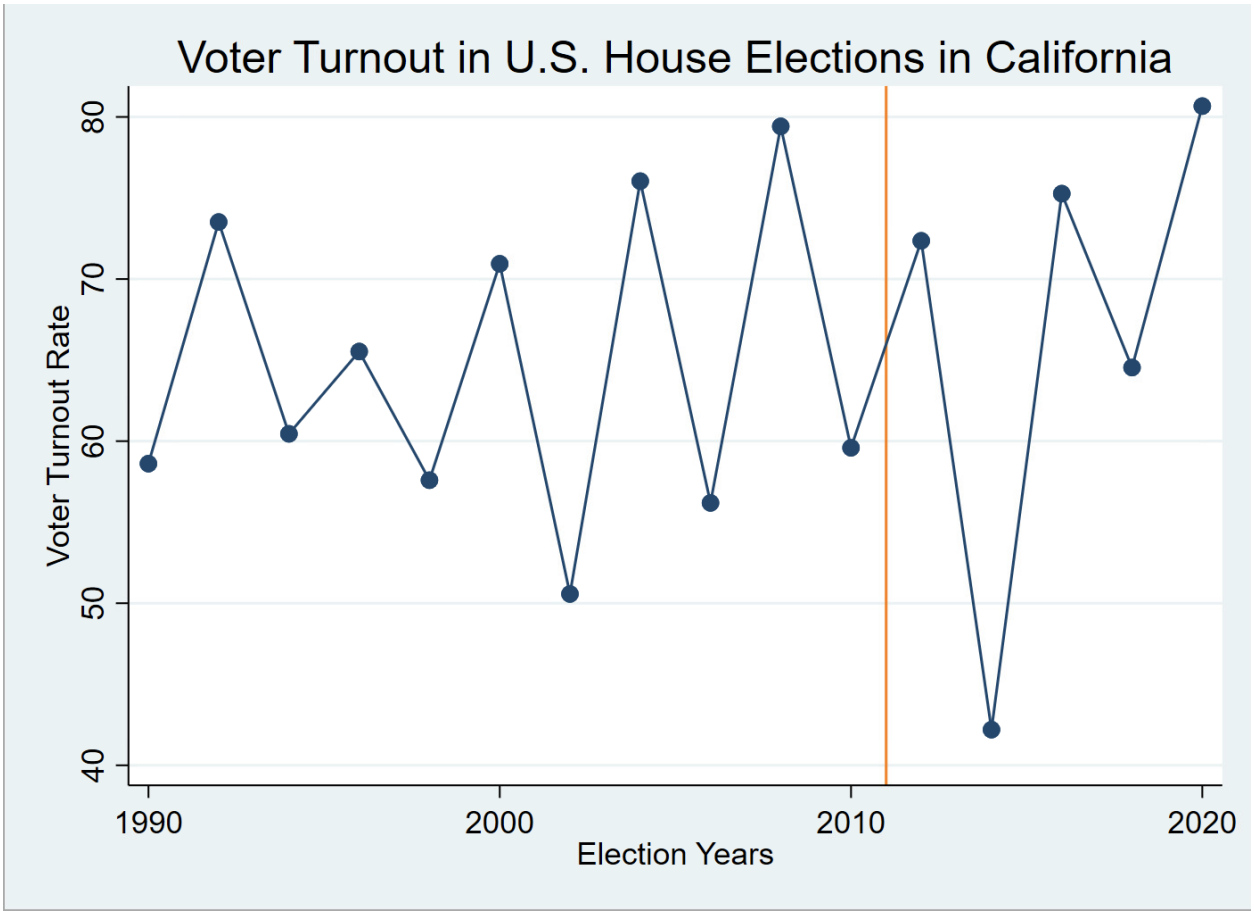

Figure 11: Source: Congressional Quarterly U.S. House Elections Database & University of Michigan Constituency Level Archive, Orange Timeline indicates year of change to independent commission

Overall, through my analysis of California and Arizona, I assert that the political preconditions, intentions, and institutional design of an independent redistricting commission can either foster or mitigate aggregate partisan disproportionality. In independent redistricting regimes such as California, the institutional intention to mitigate high levels of incumbency protection, growing statewide dominance by Democrats and removal of direct political oversight that created a barrier to increased partisan disproportionality through incumbency protection gerrymanders, fosters increased disproportionality. In independent redistricting regimes like Arizona, its stated intention to increase electoral competitiveness, prior political dominance by

Republicans in a more competitive state, and greater partisan control over the commission inherently resulted in lower levels of aggregate partisan disproportionality by institutionally preventing, albeit not completely, seat-maximization redistricting from occurring.

7. Conclusion

Electoral systems and redistricting institutions have become an important political issue in democracies across the globe. Within the UK for example, the occurrence of a hung parliament resulting in a coalition government of 2010 between the Conservatives and Liberal Democrats whose coalition was predicated on holding a nationwide referendum on Alternative Voting, a more theoretically proportional system (Curtice, 2013). However, this referendum was rejected overwhelmingly by the voters in 2011 as political self-interest was the key motivating factor for rejection as only third parties stand to benefit from scrapping the SMD plurality system (Curtice, 2013). France has successfully amended their electoral system by moving away from the institutional instability of France's coalitions under party list PR system in the Fourth Republic which increased paradoxical voting by inhibiting expression of voters' actual preferences (Browne & Hamm, 1996). France as a result switched to an SMD run-off system. These historical realities reflect current political concerns over the electoral realities of SMD redistricting regimes, as voters' concerns over the "politicization of districts" associated with partisan regimes currently strikes against majority parties' inherent interest to protect legislative majorities through gerrymandering (Courtney, 2008) ; (Seabrook, 2017). This political strife has led me to examine what electoral realities do exist as result of different SMD redistricting regimes and whether these relationships exist cross-nationally.

I find that while aggregate partisan disproportionality is nominally higher in partisan redistricting institutions when compared to independent redistricting institutions, it does not reach traditional levels of statistical significance. Under the natural experiments of California and Arizona, the change to an independent commission demonstrated that the specific political preconditions, motives and institutional design of independent redistricting commissions can

either increase or decrease aggregate disproportionality. I find a much stronger relationship in unified partisan redistricting regimes when compared to bipartisan regimes as they are correlated with a near 3-point increase in aggregate partisan disproportionality. On incumbency re-election, partisan redistricting regimes are positively correlated with a near 6 percent increase in incumbency re-election when compared to independent redistricting commissions whose result meets conventional levels of statistical significance. However, I fail to demonstrate a predicted negative correlation between unified partisan regimes and incumbency re-election rates when compared to bipartisan redistricting regimes as country fixed effects and controls mask the initial negative relationship demonstrating a slight positive relationship. In addition, evidence appears to confirm the traditional resource theory not the dummymander theory as incumbency re-election increases as years since redistricting increases. Lastly, on voter turnout, I demonstrate a statistically significant negative relationship as partisan redistricting institutions are correlated with a near 10% lower voter turnout when compared to independent redistricting commissions in line with my prediction.

My conclusions and explanatory significance may be limited due to some institutional constraints of my design. First, since each election gives only one dependent variable measure, my sample size is smaller than others with only an N of 78. This small sample size may have limited my ability to get true explanatory variance. A smaller sample size may exaggerate the importance of a few cases that are not representative of redistricting regimes overall. In addition, some may point to a lack of country variance as I only compare specific American States to France and England. I concede that within all redistricting institutions there are further variables to be studied as I strictly make contentions based solely on the redistricting institutions studied.

Nevertheless, the direct comparison between American states and countries is significant and impactful as it allowed me to test my dependent variables while accounting for institutional variance in multiparty and majoritarian redistricting institutions. Further by examining the natural experiments of California and Arizona looking directly at their specific independent redistricting commissions and diverse results on aggregate partisan disproportionality, adds to further understanding through a natural experiment. While other authors have studied the relationship of incumbency advantage as result of American redistricting institutions, my work detailing a statistically significant positive result of incumbency re-election while accounting for other institutions, volatile multiparty and majoritarian run-off systems, adds to further understanding by taking into account previously overlooked institutional dimensions. By including England and France, I also get estimates of the importance that run-off majoritarian and multiparty systems have on disproportionality and incumbency, as evidenced by France's dramatic decrease in disproportionality on the 2nd ballot when compared to the 1st and England's statistically significant higher levels of disproportionality likely stemming from prominent third-party vote share. Furthermore, by uncovering that a change in redistricting to an independent redistricting commission can produce diverse results on aggregate partisan disproportionality depending upon the political preconditions, institutional motivations and design of the regime adds to the greater understanding of independent redistricting commissions and their impact on disproportionality.

To summarize, this cross-national quantitative and qualitative study of redistricting institutions adds to our collective understanding. First it shows how the effects of an independent commission can vary depending upon its institutional design, motivations and political preconditions. In addition, it helps us examine the effects of run-off elections and multiparty

systems have on aggregate partisan disproportionality, incumbency protection and voter turnout. These results I hope inspires further work examining these relationships more broadly and within different redistricting institutions across the world. In addition, further research should be conducted on analyzing partisan competitiveness and its relationship to aggregate partisan disproportionality outside of independent commissions. Since I found than an independent redistricting commission's political preconditions appear to impact aggregate partisan disproportionality within the regime, does political competitiveness aside from control of the redistricting institution itself limit aggregate disproportionality within an electoral system? Theoretically I could foresee this being possible as while unified partisan redistricting regimes would have the institutional ability to increase disproportionality with partisan-seat maximization gerrymanders, the political realities would create an informal limitation on partisan seat maximization gerrymanders as strong systemwide support by both parties would make it difficult to pack districts. However, there is evidence that opposition party competitiveness would not mitigate partisan gerrymanders as Texas Democrats with unified control of redistricting were able to win a majority of Texas seats in the U.S. House of Representatives throughout the early 1990s in a state where Republicans had dominated statewide (Bickerstaff & DeLay, 2007). As such further research on this question would be welcomed.

Readdressing the current political question as to what redistricting system should a country adopt, I assert that answer depends upon which conditions the voters want to induce. Going back to the data, independent commissions appear to not uniformly decrease aggregate partisan disproportionality. Removing final partisan approval does not remove a regime from inducing partisan effects as shown in California. Thus, if a voter's goal is to limit disproportionality, they should create a bipartisan redistricting institution where all parties' elected leaders must agree on

a new map. While increasing partisan strife, a bipartisan redistricting institution will likely adopt incumbency protection maps that do not disproportionately increase a party's representation at the expense of others. If a redistricting regime is mainly concerned with decreasing incumbency re-election and improving turnout rates, then an independent commission with a partisan competitiveness mandate would be ideal. As in Arizona's independent commission, bipartisan selection of commissioners and a partisan competitiveness criteria resulted in decreased incumbency re-election rates and increased voter turnout through generally competitive electoral districts. In conclusion, while the general type of redistricting system can induce specific electoral results, voters should be aware that the political realities of their states and specific institutional requirements of redistricting regimes are consequential. As such, voters and states should exercise caution before changing their redistricting regimes as theoretical expectations don't always apply and more research into this subject matter is required.

APPENDIX:

Summary Statistics

	Number of Observations	Mean	Standard Deviation	Minimum Observed	Maximum Observed
Aggregate Partisan Disproportionality	78	10.9456	6.0168	1.39	30.49
Aggregate Partisan Disproportionality (Incl. 2nd Ballot)	78	10.5303	5.6608	1.39	25.05
Incumbency Re-election rates	74	83.6747	13.9025	22.36	100
Voter Turnout	78	60.6872	12.3435	32.4	80.67
Logged Number of Seats	78	3.5010	1.5336	1.6094	6.3578
Voter Volatility	78	5.0906	4.7351	0.53	37.89

STATA Summary Statistics Source: University of Michigan Constituency Level Archive, Congressional Quarter U.S. House Elections Database

Collinearity Test

	Aggregate Partisan Disproportionality	Incumbency Re-Election	Voter Volatility	Logged Number of Seats	Voter Turnout
Aggregate Partisan Disproportionality	X				
Incumbency Re-Election	-0.1946	X			
Voter Volatility	0.1419	-0.6374	X		
Logged Number of Seats	0.1600	-0.3388	0.3288	X	
Voter Turnout	0.0535	-0.0312	-0.1208	0.0878	X

STATA Collinearity Test Source: University of Michigan Constituency Level Archive, Congressional Quarter U.S. House Elections Database

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