# Political Donor Polarization

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American politics has recently been defined by unprecedented levels of partisan polarization. Given the concurrent rise of the amount of money in politics, many have suggested a connection between money in politics and polarization. However, it remains unclear if donors have become more polarized. Using political donation data from the Wisconsin Campaign Finance Information System (CFIS) and using the network science measure of modularity, this paper shows that political donor networks have polarized. This polarization is connected to new donors, large donors, and donors from geographic areas that are strong electorally for either party.

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American politics is increasingly defined by polarization (Layman, Carsey, and Horowitz 2006). Political polarization in American has recently increased more than other countries around the world (Boxell, Gentzkow, and Shapiro 2020). In addition, this polarization is found at both at the elite and mass levels (Hare and Poole 2014). Researchers have suggested a variety of potential causes of polarization in the United States, including changing party composition, growing racial divisions, the emergence of partisan cable news (Boxell, Gentzkow, and Shapiro 2020), social media (Allcott et al. 2020; Tucker et al. 2018), the form of American government (Pierson and Schickler 2020), and economics factors (Autor et al. 2020).

One other potential cause of polarization is political donors (Francia et al. 2005). Political donors play an outsized role in American politics. The amount of money spent and raised by political campaigns continues to grow with every election cycle (Goldmacher 2020). The rise in the amount of money in politics, along with a concurrent rise in polarization, have led to the idea that political donors are contributors to polarization in politics (McCarty, Poole, and Rosenthal 2006). Political donors do hold more extreme policy positions than the public and partisan citizens (broockman2020; Francia et al. 2005). Barber (2016) concluded that "the connection between donors and candidates is an important part of the story of the polarization of American politics."However, it is unclear if political donors themselves are becoming more polarized.

I ask the question: *Are political donors polarizing?*. To answer this question, I build networks of political donors, where candidates and donors are nodes and the donations connecting them are the edges, in the 2010, 2012, and 2014 election cycles in Wisconsin state government elections. Due to the attempted recall of the governor and members of the state legislature, the state experienced three concurrent election cycles with almost all of the same offices up for the election–a rarity in American politics. In addition, many scholars and commentators point to the attempted recall of then Governor Scott Walker as a critical point in turning Wisconsin into one of the most polarized states in the country.

This paper finds that political donors networks, compared to the 2010 election cycle, polarized during the 2012 election cycle and remained polarized in the 2014 cycle. While this research does not attempt to find any causal link between political donors and mass polarization, it does suggest that political donors themselves have become more polarized in time. In addition, the underlying data show potential connections between donor polarization and new donors, large donors, and geographic polarization in-line with electoral support.

**Wisconsin Context**

Both Wisconsin's legislators and mass public are among the most polarized in the nation (Cramer 2016), and the state has been used by academics to examine how political actions unfold in contentious and highly divisive environment (Bode et al. 2018). Although many state legislatures are also experiencing polarization (Shor 2015), Wisconsin is unique in that there is a single event that many point to in creating "the most politically divisive place in America" (Kaufman 2012).

In 2011, newly-elected Republican Governor Scott Walker introduced Act 10, a "budget reconciliation bill" that stripped public school teachers of collective bargaining via their union. Up to 100,000 people protested this "anti-union bill" at the State Capitol and even occupied the capitol building for a period of time (Sewell 2011). Democratic lawmakers fled to Illinois in an effort to delay or stop the bill from passing into law (Layton 2011). In 2012 there was an unsuccessful election to recall Governor Walker.

Wisconsin Governor Scott Walker's self-anointed "divide and conquer" politics (Blake 2012) has left a political divide in Wisconsin that persists to today. The result is that "divisive politics ruled Wisconsin over the last decade" (Marley and Beck 2019). The Marquette Law School poll headed by Charles Franklin has called public opinion in Wisconsin a "lesson in the two worlds of Wisconsin" where "it seems often as if people have not only differing opinions but differing views of facts and realities" (Borsuk 2017). This

discrete event and its long-lasting consequences provides a unique opportunity to study massively polarized politics that can be attributed back to a single event. In addition, Wisconsin is a competitive swing state that reflects a roughly 50-50 split similar to the country as a whole.

**Methodology & Results**

All data on political contributions came from the Wisconsin Campaign Finance Information System ("Wisconsin Campaign Information System," n.d.). I exported all contributions to State Assembly, State Senate, and Gubernatorial races from the 2010, 2012, and 2014 elections. This dataset does not include donations to party committees, although it does include disbursements from these committees. I manually created a table of the parties of each of all the campaigns receiving contributions in this timeframe and added the party of the campaign receiving the donation to this dataset.

To clean and analyze my data I used the statistical programming language R (R Core Team 2013; Wickham et al. 2019). I started with 1,499,603 donations. I then filtered out 3,503 unitemized/ anonymous donations, removed punctuation from the names of the donors, and used Open Refine (Kelli 2013) via the `refinr` R package (Muir 2018) to standardize names (for example, Jim versus James). Next, I created a unique identifier for donors by combining their standardized name with their zip code. This identifier was created to be able to link donors who contributed across multiple campaigns in multiple years without considering two different people, with the same name, from different locations to be the same person. Identity resolution is notoriously difficult and is the biggest limitation of this paper. This study uses some of the most advanced identity resolution techniques available, but there is always inevitable error. While this potential error is difficult to calculate, we expect that any error would be random distributed across the three election cycles. In other words, one can assume that the levels of error are the same across all three election cycles. So, the directional conclusions of this paper remain valid.

Next, I estimated the partisanship of each donor in each election cycle by taking the percent of donations that each donor gave to Republicans divided by their donations to Republicans and Democrats. I took that "percent donated to Republicans" and rescaled it from -1 to 1, where -1 represents the most Democratic donors, and 1 the most Republican donors. I also calculated each individual's party bin based on the party that they contributed a majority of their money to.

To quantify the levels of polarization in each election cycle, I calculated two statistics: network modularity and average absolute partisanship of donors.

First, political donations can be thought of as a network where donors and candidates are nodes and donations connecting donors and candidates are edges. This conceptualization of the political donor landscape as network allows us to examine the network structure and calculate network statistics on the graph of donors and candidates. One of the most useful network statistics for measuring polarization in a network is modularity (Newman 2006).

The modularity of a graph measures the strength of the division of groups (such as political parties) by calculating "the number of edges falling within groups minus the expected number in an equivalent network with edges placed at random" (Newman 2006). The modularity of a network falls in the range [-1/2, 1]. If the modularity is positive, the number of edges that remain within each group is greater than the expected number to remain in-group based on chance. The higher the modularity, the greater the concentration of edges within each groups. In other words, the higher the modularity of a network, the higher the polarization among the groups. Formally, the equation to calculate modularity Q is:

$$Q = \frac{1}{2m} \sum_{ij} \left[ A_{ij} - \frac{k_i k_j}{2m} \right] \delta(g_i, g_j)$$

In this equation $m = \frac{1}{2} \sum_i k_i$ is equal to the strength of all the ties in the network,

$k_i = \sum_j A_{ij}$ is the strength/ weighted degree of the $i$th node, $g_i$ is the group (in this case, party/ party bin) to which the $i$ belong, and $\delta(g_i, g_j) = 1$ if $i$ and $j$ belong to the same group (party/ party bin) and 0 if they do not belong to the same party/ party bin.

I calculated the modularity of the network graphs of each election cycle (2010, 2012, 2014) using the `igraph` R package (Csardi and Nepusz 2006). I used candidates' declared parties and donors' party bin as the groups for the modularity calculation. The modularity of the network graph of each election is in Table 1.

Table 1: Modularity calculation for the donor networks in each election cycle. Higher modularity means more polarization.

| Election Cycle | Modularity |
|---|---|
| 2010 | 0.4059429 |
| 2012 | 0.4918331 |
| 2014 | 0.4802608 |

In addition to calculating the change in modularity of each of the election cycles, I also analyzed the change in mean absolute partisanship of the donors in each election cycle (see Table 2).

I defined a donor's absolute partisanship as the absolute value of their partisanship score (which is on a scale from -1 to 1). Therefore, the larger a donor's absolute the partisanship, the higher percentage of their money that they contributed to a single party. To calculate the significance in the difference of the mean absolute partisanship, I use a bootstrap methodology with 1,000 replications using the `infer` R package (Bray et al. 2020). This paper uses a non-parametric permutation method because of the non-Normal distribution of partisanship of the donors (98% of donors across all election cycles only contribute to a single party).

Table 2: Bootstrapped difference-in-means test with 1,000 replications comparing mean partisanship of donors.

| Election Cycle | Diff. | CI | p |
|---|---|---|---|
| 2012 compared to 2010 | 0.04213 | 0.04033-0.04409 | <.001 |
| 2014 compared to 2012 | -0.00027 | -0.00086-0.00028 | 0.332 |

The results of this analysis show that political donors in Wisconsin polarized during the 2012 election cycle. This phenomenon is best visualized in Figure 1. This figure uses the Yifan Hu layout algorithm (Hu 2005) in the Gephi software (Bastian, Heymann, and Jacomy 2009), a force-directed graphical layout of networks that seeks to repulse clusters of nodes from one another. The Yifan Hu layout algorithm is a standard among social scientists studying networks such as online networks (Adalat, Niazi, and Vasilakos 2018; Hemsley et al. 2015; Khonsari et al. 2010; Rehman et al. 2020). This visual representation shows two distinct clusters of donors (Democrats and Republicans) that are reasonably close to one another in the 2010 election cycle and then polarize significantly in the 2012 election cycle and remain polarized in 2014. Table 3 includes the counts and percentages of that Democratic, Republican, and bipartisan donors comprise of each election cycle.

In addition, Figure 2 shows the partisan flow of political donors across the election cycles, including the massive influx of new donors in both the 2012 and 2014 election cycles. The counts and percentages of new and old (donors who contributed in the last election cycle) are summarized in Table 4.

Figure 3 shows the partisan shift of donors who contributed in both the 2010 and 2012 election cycles.

Figure 4 shows the distribution of the size of donors (amount contributed) by partisanship.

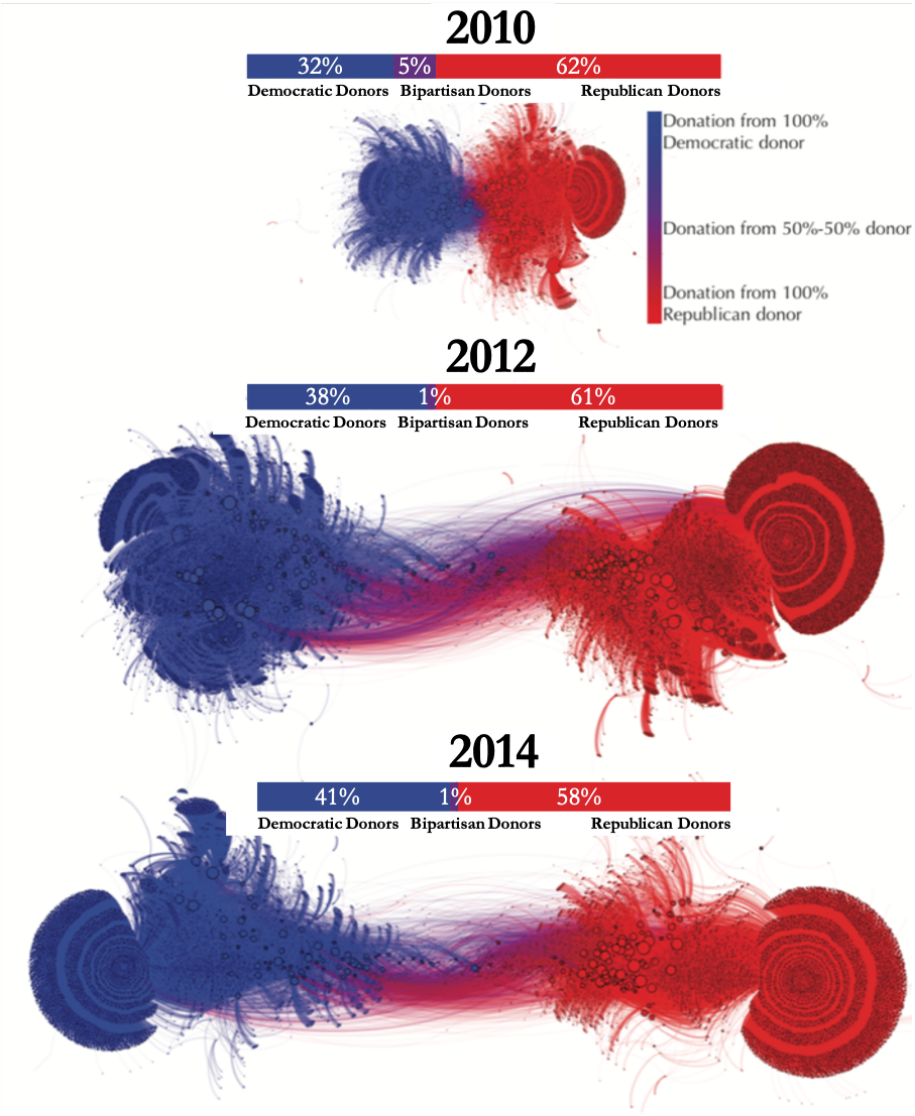


Figure 1: Visual representation of Wisconsin donor networks in the 2010, 2012 and 2014 election cycle using the Yifan Hu layout algorithm. Each dot/ node is a donor or campaign and lines/ edges connecting them are donations. Nodes sized by in-degree (incoming donations. Nodes and edges are colored by the partisanship of the donor. Percentages on the bars represent the percent of donors in each party bin.

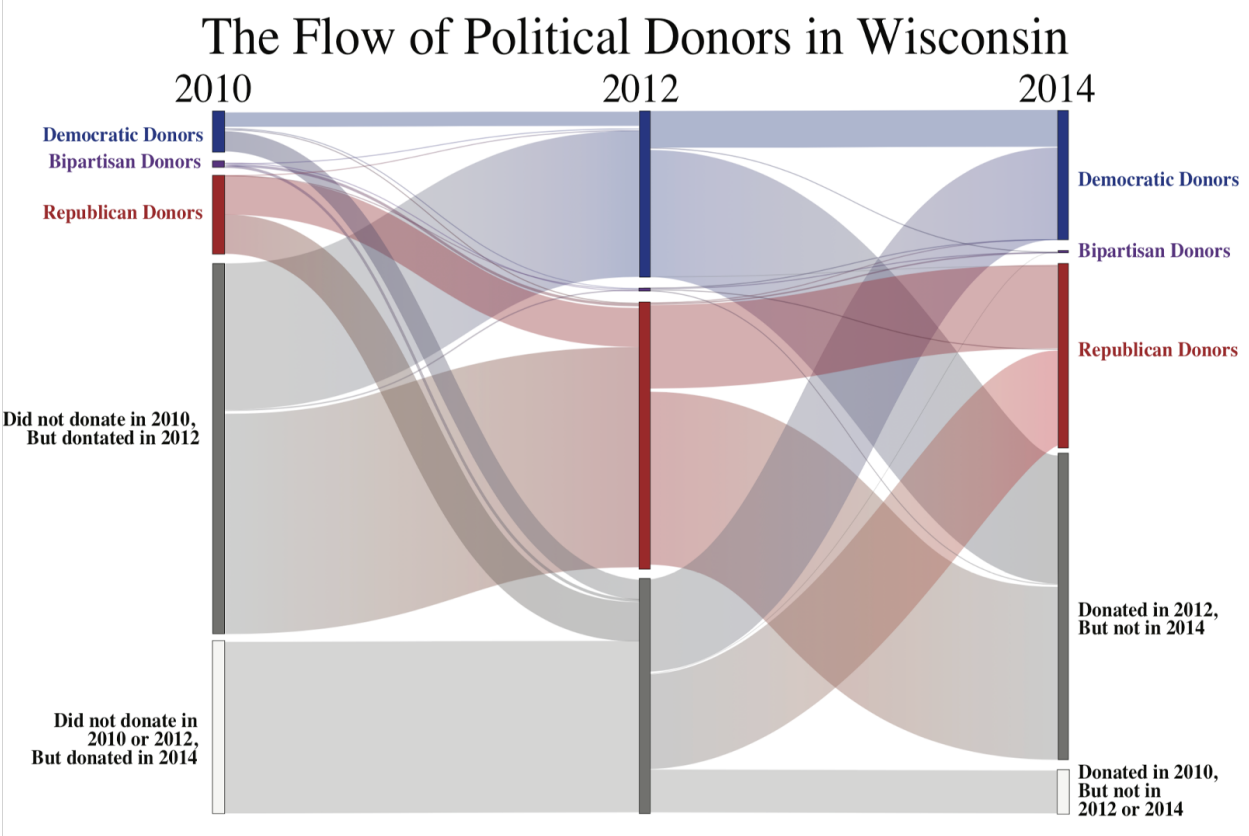


Figure 2: Sankey diagram of the flow of political donors in 2010, 2012, and 2014 election cycles in Wisconsin. The vertical bars are proportional to the number of donors in each bin.

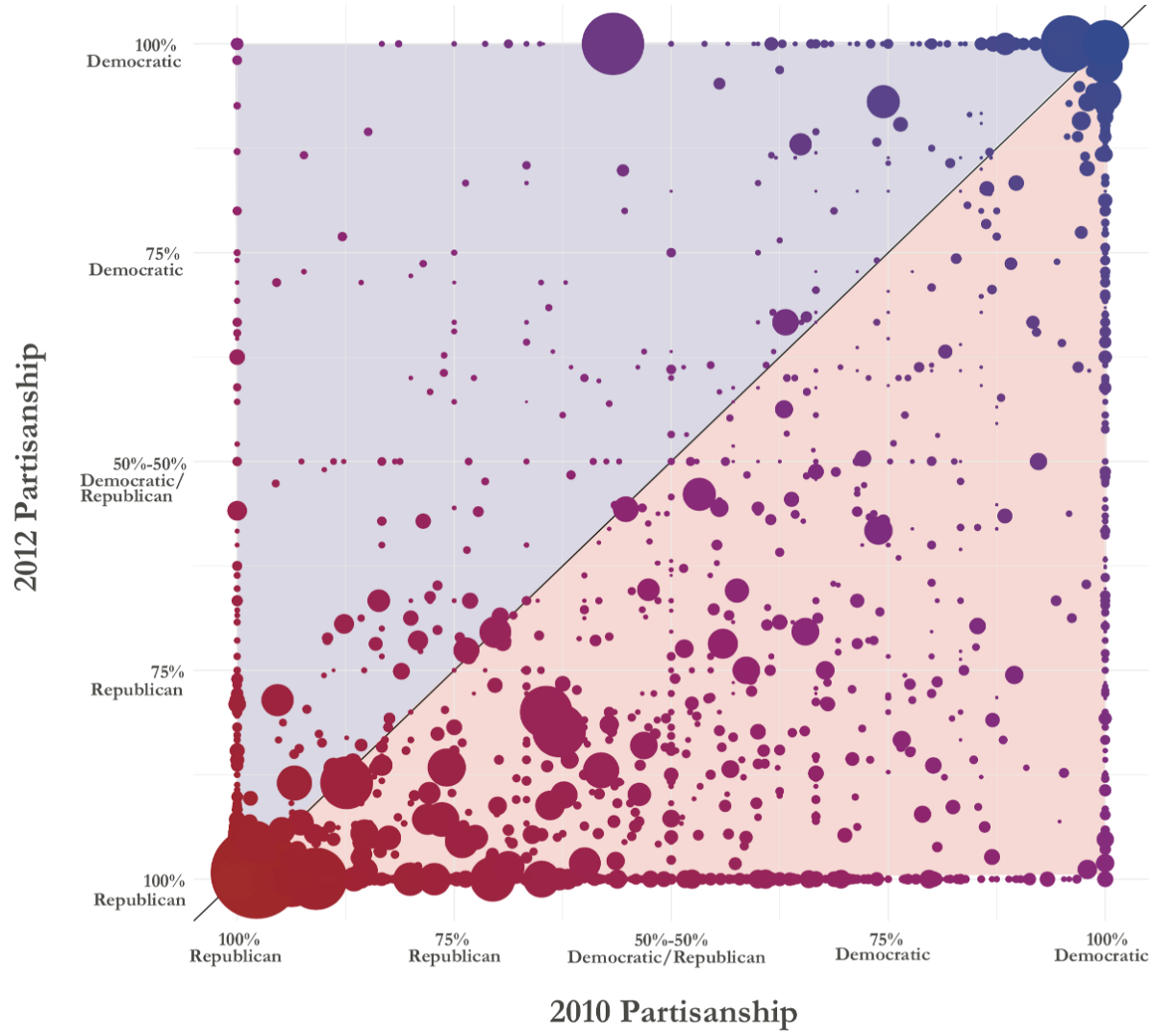


Figure 3: Every dot is a donor who contributed in 2010 and 2012. The bigger the dot, the more money they contribted. The x-axis is their partisanship in the 2010 election cycle and the y-axis is their partisanship in the 2012 election cycle. If the donor is to the right of the center diagonal line, they became more Republican. If they are to the left of the line, they became more Democratic.

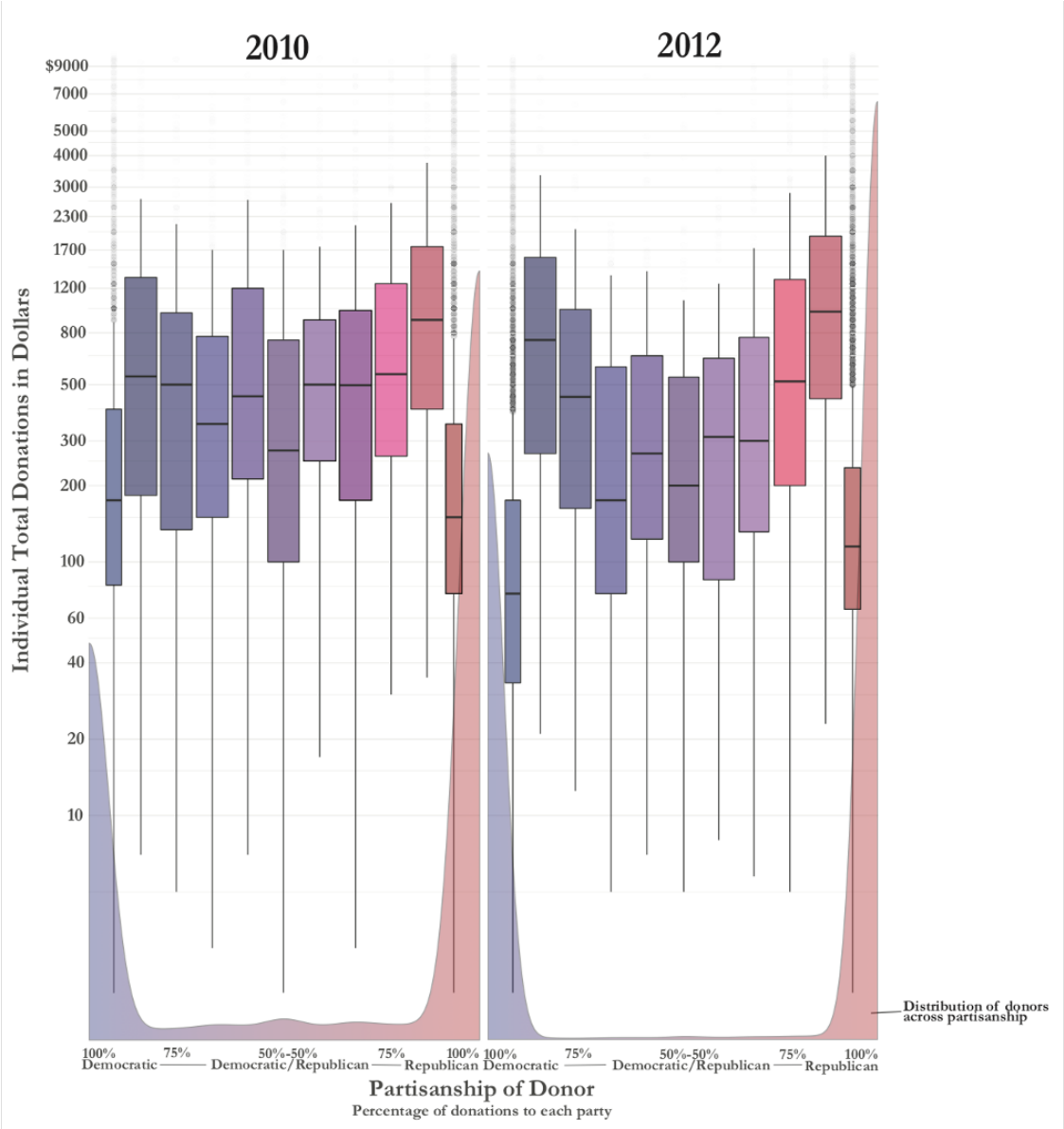


Figure 4: This box and whisker plot is grouped by the partisanship of the donors in the 2010 and 2012 election cycles. Note that the y-axis is shown on a log10 scale for clarity. The partisan distribution is shown along the bottom of the x-axis.

Figure 5 is a map representing the geographic polarization among political donors.

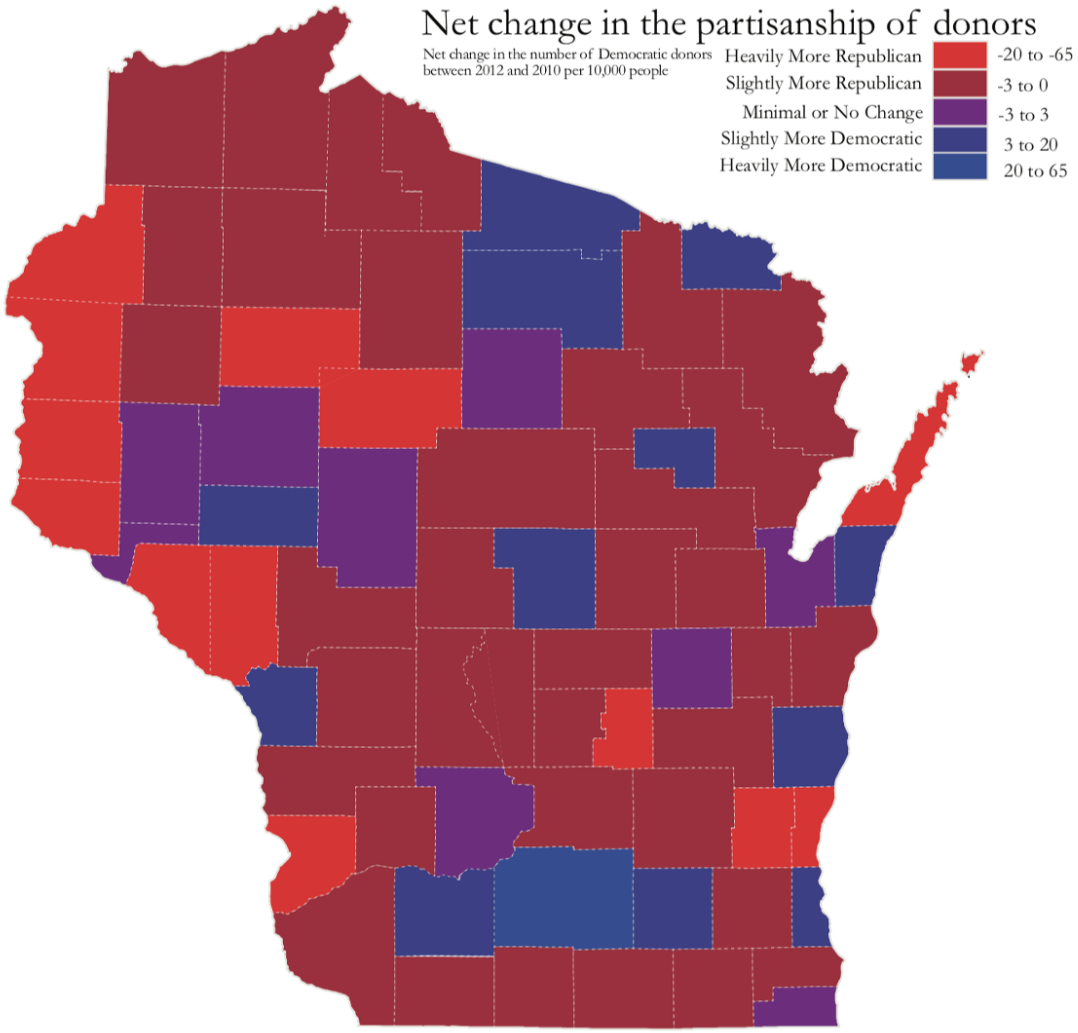


Figure 5: This map shows the polarization of donor networks across Wisconsin's counties based on the net change of donors in each county per 10,000 residents. The red counties had a net increase in Republican donors, blue counties had a net increase for Democrats, and the purple counties had little or no change.

**Discussion**

The results of this paper show that political donor networks polarized between the 2010 and 2012 election cycles and remained polarized in the 2014 cycle, as visualized in Figure 1. Further, during the time period of polarization, there was a large influx of new donors,

existing donors polarized, small and large donors in polarized positions, and geographic patterns emerged that are similar to electoral bases of support.

*New Donors*

Figure 2 shows that new donors overwhelmed the donorate in the 2012 and 2014 election cycles. The polarizing event of the attempted recall of then Governor Walker potentially spurred this growth in new donors. Previous research by Oklobzija (2016) reached a similar conclusion that "politically polarizing events bear dividends for extremist lawmakers" in California who raised more money as a result of polarizing political events.

*Existing Donors*

In addition to new donor overwhelming the donor networks, donors that contributed in both the 2010 and 2012 election cycles also showed polarized behavior, as visualized in Figure 3. Previously bi-partisan donors becoming single-party donors is very similar to the decreases in split-ticket voting (Bump 2016; Desilver 2016; Skelley 2018).

*Donor Sizes*

Both large and small donors potentially play a role in the polarization of donor networks and politics more broadly. Purely partisan donors were the smallest donors, but then the next most partisan donors were on average the largest donors. Further research should investigate the differences in purely-partisan donors and nearly-partisan donors. Potentially, these larger nearly-partisan donors are the ones who are the most strategic in their contributions.

In addition, small-dollar donors are playing an increasing role in campaign finance for both Democrats (Albert and Raja 2020) and Republicans (Lott 2019). Although small-dollar donors were not as prominent in the 2010, 2012, and 2014 state-level elections in Wisconsin as recent national politics, they certainly played a role in the data of this study.

Figure 4 shows that 100% partisan donors were on average much small donors than non-100% donors. Previous research into small-dollar donors has asked, "Are Small Donors Polarizing?" and came to the same conclusion as this paper of a more polarized politics as potentially spurring the rise of small-dollar donors and not the other way around (Keena and Knight-Finley 2019).

*Donor Geography*

Finally, a major theme of polarization studies is the rise of geographic sorting. There has been "an increased concentration of partisan behavior" that emphasizes "a local residential spatial pattern of geographic polarization" (Kinsella, McTague, and Raleigh 2015). "Partisan migrants" are found to "prefer to relocate in areas populated with copartisans" (Cho, Gimpel, and Hui 2012). The geography of political polarization in Wisconsin is well-studied by Cramer (2016) who uses the term "urban-rural divide" to explain the geographic polarization of the state. This divide that Cramer documents across Wisconsin manifests itself in the geography of polarization among political donors (Figure 5). Bases of strong Democratic support (mostly in urban centers) saw their donors become more Democratic. Conversely, areas that are strong bases of electoral support for Republicans also saw their donors become more Republican. Although the major sources of Democratic and Republican campaign money were once thought to occupy the same geographic area (Bramlett, Gimpel, and Lee 2011), the triumvirate of the rise of small-dollar donors, a decrease in bi-partisan donors across election cycles, and an urban-rural divide with geographic partisan sorting results in a geographic landscape of donor polarization that mirrors the polarization of the populous.

**Conclusion**

This paper asked: *Are political donors polarizing?*. In the case of Wisconsin, this paper finds that political donor networks are polarizing. During the time period of increasing

polarization, there was a massive influx of new donors, polarization of existing donors, polarized small and large donors, and geographic patterns matching bases of electoral support.

| Method | koRpus | stringi |
|---|---|---|
| Word count | 2370 | 2293 |
| Character count | 15304 | 15237 |
| Sentence count | 116 | Not available |
| Reading time | 11.8 minutes | 11.5 minutes |

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