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Final Project Notebook

Question/Explanation of Data:

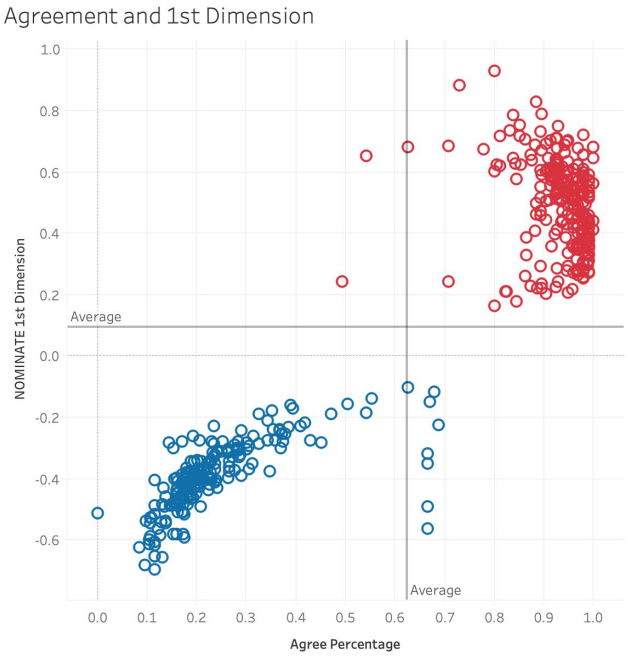
During the 2016 election, I remember intense news coverage about how then-candidate Donald Trump was not a “traditional” Republican in many ways, and many powerful Republicans such as both former Bush presidents and John McCain expressed disapproval. Democrats have also campaigned for 2020 solely on getting Trump out of the White House. However, I wanted to explore how often members of Congress actually agree or disagree with Trump.

I chose to analyze the House of Representatives in the 115th Congress because it would have more data points than the Senate and could provide data about individual districts’ preferences via their elected official rather than entire states, and also because the 115th Congress is the most recent Congress with complete data available. (The current Congress, the 116th, won’t be over until 2021.) I compiled two types of data: 1) the quantitative ratio percentage of times they voted on a bill in a way that aligned with President Trump’s taken stance on that bill, and 2) their DW-NOMINATE scores, which is an quantitative ratio interval variable from -1 to 1 describing ideology based on previous voting history, where -1 is extremely liberal, 1 is extremely conservative, and 0 represents moderate. DW-NOMINATE scores have two dimensions: the first dimension records votes on traditional liberal conservative issues, and the second dimension records votes on other issues that divide the two parties, such as nativism and civil rights. Finally, I also collected data about results of the 2018 election as a nominal variable of either re-elected, declined re-election, or voted out to see if there was a relationship between agreement with Trump and their 2018 election result.

My question was how often members of different parties and different places on the ideological spectrum agree with President Trump and whether that may have had an effect on voter preferences in their district based on whether they were re-elected or not.

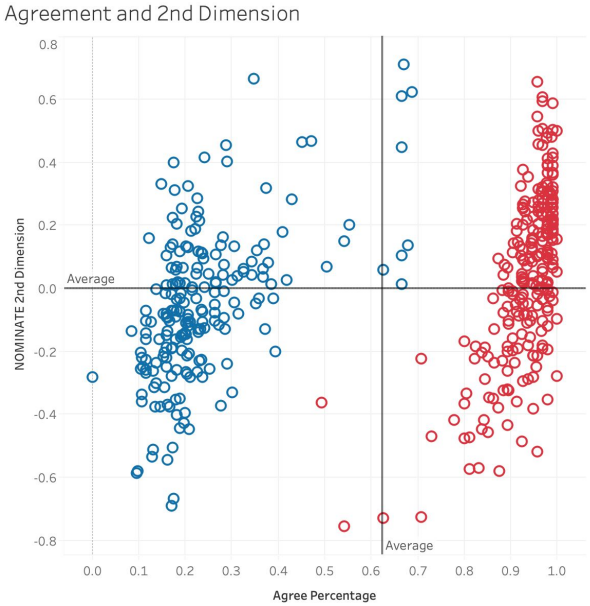
Visualizations:

First, I started by looking at the overall distribution of first dimension DW-NOMINATE scores compared to the Trump agreement percentage. Below I mapped DW-NOMINATE scores to position on the y-axis, agreement percentage to position on the x-axis, and party to color (blue and red). I wanted to use red and blue because people associate these two colors with the political parties so strongly, but I was concerned about color-blindness, so I ran each of my graphics through a color blindness simulator and found even if a reader might not be able to view the red, they can still differentiate it from the blue.



Using this, I confirmed two assumptions: 1) on a traditional liberal to conservative scale, all Republican members are above 0 and all Democrat members are below, 2) generally, members with higher DW-NOMINATE scores are more likely to agree with President Trump. Interestingly, at first there's seemingly a positive correlation between the DW-NOMINATE score and ther agreement percentage, but then it falls off around the 60% mark. This visualization suggests Democrats have more variance in whether they agree with Trump or not and that that variation is connected to their ideology, while the vast majority of Republicans agree heavily with Trump regardless of differences in their ideology. This could potentially be due to pressure from the executive office, party leaders and pro-Trump constituents to agree with the president and portray party unity.

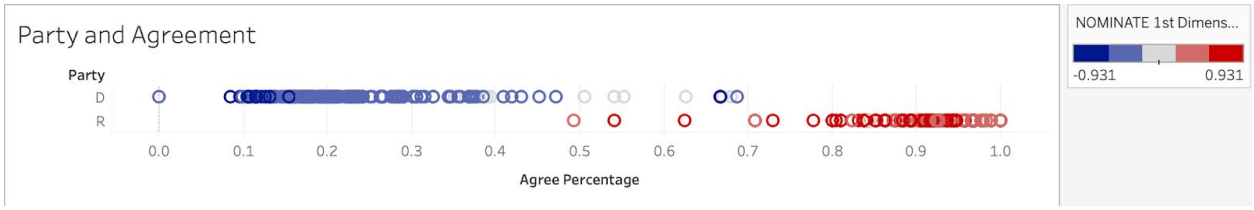
From this visualization, you can also see that the House on average skews very slightly conservative (0.1) — which corroborates the Republican majority in the 115th House — and on average, the House agrees with Trump about 62% of the time.



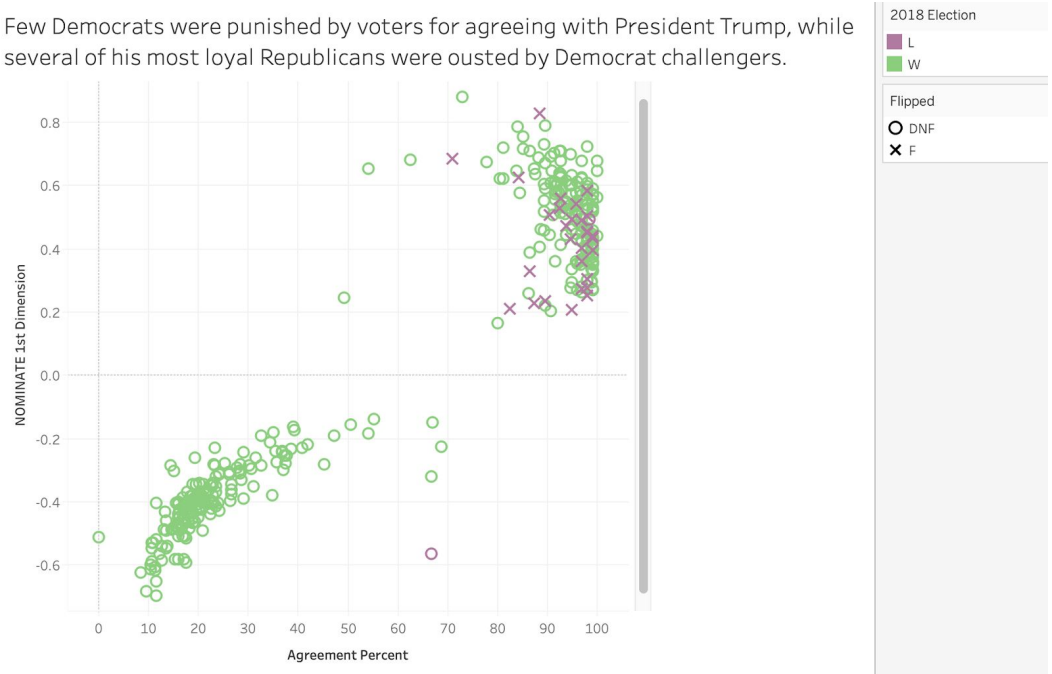
The next visualization I made was the same as the first, but mapping second dimension DW-NOMINATE scores instead of first dimension scores. In this case, members of both parties are well distributed vertically and the average score is exactly 0, which confirms that the issues that go into the second dimension score are ones that

traditionally divide both parties. In this visualization, it's interesting to observe that there is a very slightly steeply positive linear correlation within both parties between a higher second dimension DW-NOMINATE score and a higher percentage agreeing with Trump.

This visualization maps the same data as the first, but maps party to position and DW-NOMINATE score to color instead. In this, you can more clearly see the breakdown of ideology within the Republican party. Interestingly, in this view the reader can see that the right-most part of the Republican distribution is disproportionately lighter in color, and the left-most portion is much darker. This confirms that even though there isn't a clear relationship between ideology and agreement with Trump in the Republican party, it seems as though it is moderate members that are agreeing with him the most.



Next to see whether voters may be cognizant of these voting patterns and using it to influence their vote, I plotted the same visualization as the first, but this time I mapped the nominal variable of losing (L) or winning (W) re-election, filtering out members who did not run for re-election, and mapped the nominal variable flipped (F) or did not flip (DNF) to shape.

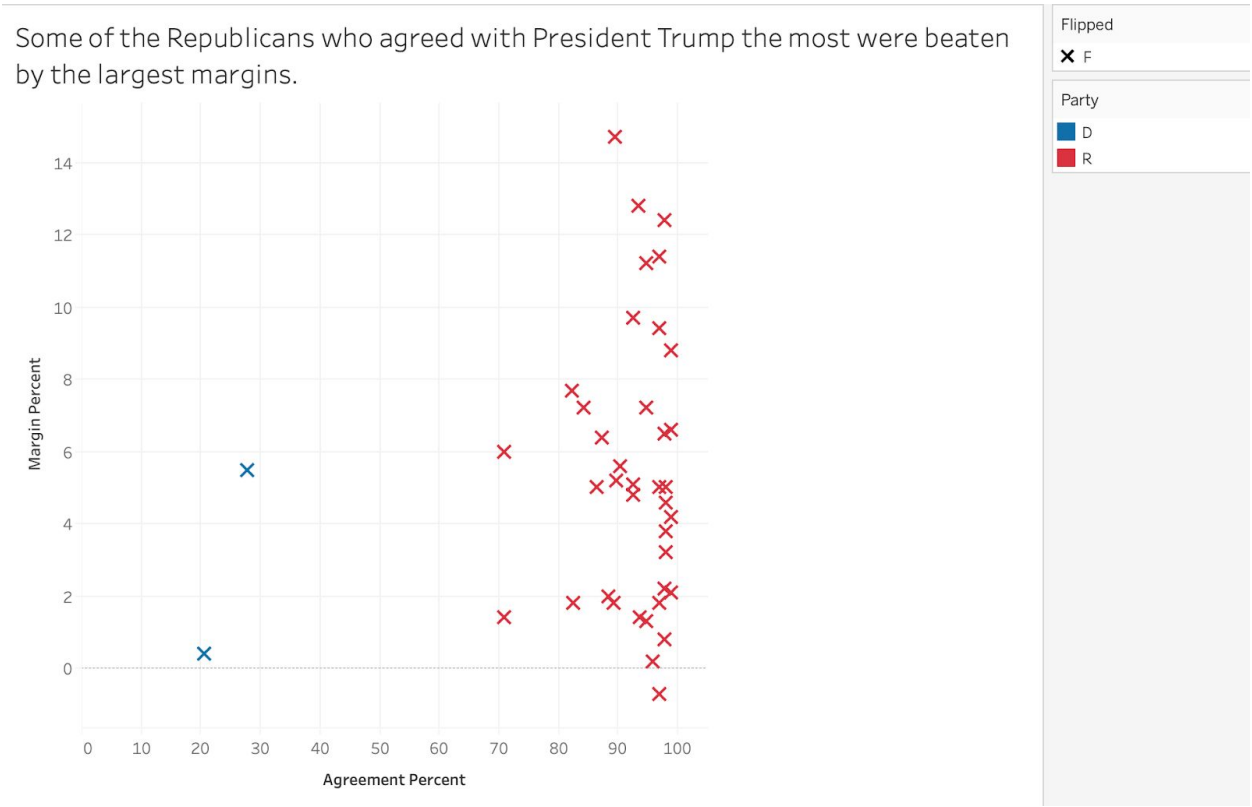


Doing this, it's clear that most of the Democrats who vote disproportionately often with Trump were not punished by their constituents for doing so. The one exception is the purple circle

towards the bottom of the plot. Looking further into this case in particular, the representative, Brenda Jones, was elected in a special election to finish the rest of the former representative's term after they resigned. In 2018, the next regular election, she was faced by a strong same-party challenger who hadn't run in the special election and was voted out. Because of these circumstances, it's unclear whether it was her voting behavior that affected her failure to be re-elected.

Meanwhile, several Republicans who voted extremely often with Donald Trump were both voted out and replaced with a Democratic challenger. There is only one case on the Republican side where an incumbent lost but was not replaced by a Democrat.

Below, I isolated it to just these cases where districts flipped and mapped the margins of their losses to y-position. I also filtered out results for Pennsylvania because the state underwent redistricting between 2016 and 2018 so the constituents in each district weren't voting for the same candidates each time around, so the results of their elections would portray a false relationship between vote outcome for that district and the performance of the candidate prior to 2018.



Initially I was confused at the two blue Xs since no Democrats in the previous visualization popped up, but these are two cases that were filtered out in the previous visualization because these Democrats chose not to run again, and were then replaced by Republicans. Therefore, it's

hard to know how constituents reacted to them personally, but replacing them with Republican candidates could be a backlash to these two members who voted on the lower end of agreement with Donald Trump.

On the Republican side, it's interesting to see that the Republicans that agreed with Trump the most often were the ones to lose by the biggest margins. There's one case where the margin is negative because the Republican candidate won a larger percentage of the overall vote, but lost because of ranked-choice voting.

Conclusion:

For Democrats, there appears to be a relationship between ideology on the first and second DW-NOMINATE dimension and the percent of vote cast in agreement with Trump. For Republicans, there isn't a relationship between the first dimension DW-NOMINATE score and agreement percentage, suggesting that there is either strong party unity or stronger party pressure for Republicans to vote in agreement with President Trump. For Republicans, there could be a slight relationship between being conservative on social issues and voting more often with Trump, however from the feedback the two dimensions are hard to understand and in my piece I'll talk solely about the first dimension since it aligns with the traditional liberal to conservative spectrum most people are familiar with.

As to whether voters punish their representatives for voting with Trump, there again seems to be different results for both parties. All but one Democrat who voted over 60 percent of the time with Trump chose to run again, and of those, only one lost, indicating voters overall either don't seem to be aware of this voting pattern or don't seem to care enough about it to vote the candidate out of office. On the Republican side, several extremely loyal Republicans were not only voted out, but also replaced by Democrats. This has interesting implications for the "Never Trumper Republicans" who might be willing to support Democrats despite their party identity in order to vote Trump out of office or vote out representatives that allow him to pursue his agenda.

Source List:

Trump Agreement Percentage:
https://projects.fivethirtyeight.com/congress-trump-score/

DW NOMINATE Score Data:
Lewis, Jeffrey B., Keith Poole, Howard Rosenthal, Adam Boche, Aaron Rudkin, and Luke Sonnet (2020). *Voteview: Congressional Roll-Call Votes Database*. https://voteview.com/data

2018 Election Results Data:
https://www.axios.com/incumbents-who-lost-reelection-2018-midterm-elections-f4cc0c57-77c3-4952-baa1-7a2e7128568c.html

https://www.axios.com/live-map-axios-2018-midterm-elections-results-e54da558-b5e9-4b09-ad1e-5663cc78f1b7.html
https://www.politico.com/story/2018/11/06/2018-midterm-election-results-incumbents-967438
https://www.theatlantic.com/politics/archive/2018/06/the-2018-congressional-retirement-tracker/545723/