

Gentzkow, Shapiro and Taddy (2018)'s article, *Measuring Group Differences in High Dimensional Choices: Method and Application to Congressional Speech*, aims to investigate the following research question: Has political partisanship increased over the recent years? Specifically, as they argue that the previous models studying political polarization trends in political speeches experience finite sample bias, they developed a new machine learning model to address this bias, and overall conclude find that political polarization has increased exponentially from the early 1990s.

I believe that the authors have given a compelling answer to their hypothesis as they have identified a gap in the methodology in the field and have sufficiently sought to address it- they argue that the MLE estimators used in previous models investigating this research question, have a positive bias because the 'number of phrases is large relative to the volume of speech observed' (11), that is, even though these phrases are spoken a couple of times and perhaps even by chance, the results would overestimate the measure of polarization. To address this issue, they used a leave-out estimator and a penalized estimator (their preferred estimator) in their models (3). Additionally, they even sought to validate their models and compared them to the previous models that do not account for finite sample bias, by testing it via a permutation test, with two types of simulated data and also performing out of sample validation, suggesting that their models are thoroughly tested and verified to decrease bias. In their results, they found an obvious distinction between the results using these previous models and their current model, suggesting the large effects of the previously unaccounted finite sample bias. Specifically, they also found that the rise of partisanship was driven mainly by a divergence in how the parties talk about a substantive topic, for example, framing a tax policy as "estate tax" or "death tax", rather than by a divergence in which topics they talk about. Going further, they also found that partisanship is evidenced mostly in the topics of immigration, crime and religion (12-14). They also mapped their results on to the polarization of roll-call votes to investigate this research question further, and found that although both indicate a large increase in polarization over the recent years, the polarization of the roll call series is about as high in the late nineteenth century, and its current upward trend begins around 1950 instead of 1990, suggesting that speech and roll-call votes respond to different constraints and incentives. When mapping to individual members, they also found that members who vote more conservatively also use more conservative language on average (19-22), and this relationship was highly statistically significant, suggesting that there is an internal ideological coherence within politicians- specifically their roll call votes and their speeches.

Although their method is sufficient in answering their specific research hypothesis on political polarization in language in speeches and within congress members specifically, I believe that they too heavily assume that the language used by members of congress is an indicator of political polarization. That is, as they confined their analysis on congress members only and not the electorate, I believe that they might not have adequately answered the research question. Specifically, although they briefly addressed the assumption that political polarization among congress members is reflective of political polarization among the electorate (25), and therefore we can sufficiently conclude about political polarization on the whole based on their analysis, this core assumption may not be a completely valid one, as some studies have shown that this may not be the case. For example, Fiorina, Abrams, Pope (2008) analyzed surveys tracking individual issues over time to suggest that the ideological opinion distribution among the electorate has remained a normal distribution, with a centrist shape, for the past fifty years, as the electorate is ‘not very well informed about politics, do not hold many of their views very strongly and are not ideological’. With this argument in mind, even if speeches in congress reveal a more extreme partisan divide, assuming that the electorate remains apathetic about politics, language framing in congress speeches might not have an effect on the electorate and they remain ideologically unchanged. Additionally, within the assumption that the political polarization of congress accurately reflects the polarization of the electorate, Gentzkow, Shapiro and Taddy also do not address the direction of this persuasion. Although they implicitly do assume that politicians are influencing their voters on political partisanship, as they suggest that the way political issues are framed can have large effects on public opinions, they do not address if this could be in a reverse direction- that is, perhaps the electorate is more polarized and this, in turn, influences how politicians frame these issues. For example, one study found that learning about their constituency’s opinions about a tax proposal affected how the legislator voted (Butler 2011), suggesting that politicians, especially if they are running for office, are responsive to the opinions of the electorate. As such, to make a more convincing argument about the validity of their hypothesis, I believe they should have also addressed these concerns.

Furthermore, I also argue that their evidence arguing that the politicians can persuade the electorate using language, is a little weak (25, 3<sup>rd</sup> paragraph) – Firstly, they cite studies that were conducted in the laboratory to suggest that framing an issue changes opinions of participants in issues on marriage, for example. However, these studies have issues of external validity that is not addressed by the writers, that is, can we generalize from these laboratory evidence that this effect is seen in “real life”? Secondly, they also cite how

politicians hire consultants to help them craft messages for election campaigns as evidence for the persuasion effects of language on the electorate. However, just because politicians *perceive* that there is a framing effect on their electorate, does not mean that there is a *real* effect. For example, although politicians seek to buy TV advertisements in their campaign elections to convince others to vote for them, it is well established in the literature that there is close to zero effect of TV campaign advertisements on persuasion (Kalla & Broockman, 2018), which suggests that the actions of the politicians that is, whether they choose to buy TV advertisements, or learn how to frame their policies) only reflect their perception of the persuasive effects, and is not a valid indicator of *real* effects. Lastly, although their last evidence on field experiments reflecting language on outcomes do seem to serve as stronger evidence in their argument, the first two citations on laboratory experiments and the perceptions of politicians do not serve to strongly substantiate their argument. Although I do not believe these citations are unnecessary per se, I suggest that they should find other evidence that could better serve their overall argument. For example,

Although there are no clear grammatical mistakes or spelling errors, one paragraph that the writers could better develop is on page 4, 4<sup>th</sup> paragraph. Specifically, the writers note that they built on other research, citing various authors. However, in the last sentence, they only noted the authors and did not develop how the work of these authors have contributed to their study. A short blurb or a sentence or two about how the work of each author has contributed to their study would be helpful for the reader to understand how these authors have developed their research.

In terms of how this paper contributes to existing literature, as stated earlier by the authors, previous models did not account for the finite sample bias. Additionally, this paper contributes to the existing literature as it serves as a useful general overview of how polarization has changed over time. Specifically, there are some papers that looked exclusively at certain topics, such as climate change (Fisher, Waggle, Leiffield, 2002). For example, one study found that despite framing from the media, there is a consensus about the science of climate change. These papers, although useful, only provide a small, detailed look at an issue, and this paper specifically is useful in tracking polarization over time.

A possible extension of the paper that can also be used to supplement the above critique- that the political polarization of congress may not affect the polarization of the electorate, would be to look at social media. Specifically, using the same method that they described, the researchers could scrape comments made in the subreddit, r/ChangeMyView. Similar to congress speeches, the data that they could scrape from this subreddit “fits” the

type of data this model can account for – that is, each reddit users have different frequencies of their phrases as well. More specifically, they could look at how reddit users in this subreddit post about political topics, such as immigration or religion, that are considered controversial, and if others can change their views. For example, one study looked at a sample of 5918 tweets posted by 193 Twitter users during the 2011 Canadian Federal elections and observed the evidence of political polarization (Gruzd & Roy, 2014) – users who engaged in cross-ideological discourse through twitter were unlikely to change their ideology, suggesting the “strength” of this politically polarization. In this case, looking at social media platforms like reddit would supplement their argument and have a more indepth perspective on how and if the electorate is also experiencing political polarization.

## References

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