

COVID-19 Polarization

Analyzing political division surrounding a pandemic

■ SOCIAL SCIENCES

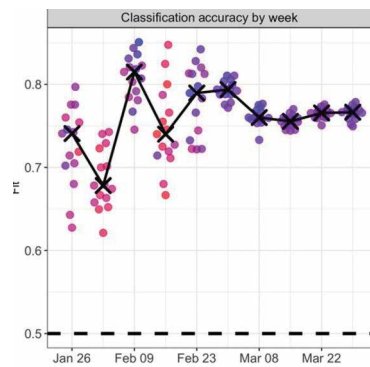
An election year in the United States is marked by incisive campaign ads, heated debates and get-out-the-vote messaging. The bombast of the 2020 presidential election was further amplified by the heavily politicized COVID-19 pandemic. With the help of the Ohio Supercomputer Center (OSC), The Ohio State University's Skyler Cranmer used Twitter data to examine the extent of this partisan polarization.

Cranmer, the Carter Phillips and Sue Henry Associate Professor of Political Science in Ohio State's College of Arts and Sciences, specializes in political methodology and the development of new statistical methods for network analyses. As COVID-19 became the main topic of conversation in the United States, Cranmer and four of his colleagues were interested to see if the topic had become politically polarized, especially among politicians on Twitter.

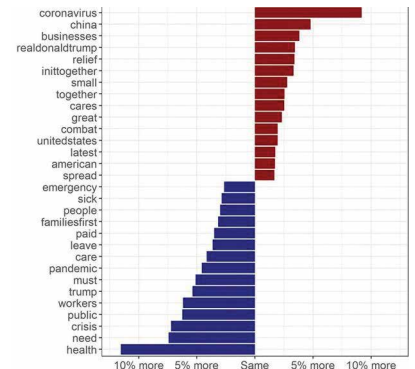
"Political science has documented the fact that people tend to take cues from political elites and modify their behavior accordingly," Cranmer said. "While this hasn't been specifically studied with COVID-19, there is a whole literature to suggest this is happening.

"In this case, it is important, because if your partisans are sending cues to not wear a mask, not place a lot of emphasis on washing your hands or social distancing, then you as an individual are less likely to adopt those behaviors. And the earlier in the crisis this happens, the earlier those attitudes are formed and are harder to unform."

Cranmer and his team collected tweets from members of the House of Representatives and the Senate, beginning with the arrival of COVID-19 in the United States. While collecting the data was straightforward, the text analysis was computationally intensive, so Cranmer turned to OSC and its vast analytical capabilities for help.



A Points represent accuracy rate in the given week for each fold of cross-validation



B Absolute difference in words used by party

Figure (L): As time went on, the researchers' predictions became more accurate, suggesting increased polarization over time.

Figure (R): Key words in tweets were tracked and noted if they were used more by one party.

"The first interesting thing we found was that polarization occurred very, very quickly," Cranmer said. "There were also substantial differences in the word choices that were used by different parties. Democrats were framing the issue in terms of things like health and safety, aid to workers, direct aid to citizens, whereas Republicans tended to frame the issue in terms of a battle, so more militaristic language, to have greater calls for national unity and to blame China specifically."

Using models developed through his analysis on the OSC clusters, Cranmer can now predict with more than 75% accuracy whether a Republican or Democrat sent a particular tweet based solely on its text and date. This predictive rate was used as a measure for how divided Congress was: if a tweet could be attributed to the correct party based on the text of the tweet, then the parties are relatively divided. Cranmer credits OSC for helping to enable these results.

"OSC was incredibly responsive, certainly in our case. They were very quick to get our special account created, and we were able to get this research pushed through really quickly. Computing was definitely not bottlenecked here, even though it had the potential to be." •

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