Researchers examine how the subtle choice of synonyms may tip your hand as to which political party you support

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Previous studies have shown people can identify the gender and race of a speaker based on the words chosen, but could a person identify something like political membership? A team of researchers at Carnegie

Mellon University found people are more successful at identifying language associated with Republican speech than Democratic speech patterns. The results are available in the February issue of the journal *PLOS*.

"While other studies have shown that people can detect social categories like the race and gender of a speaker based word choice, there hasn't been work on whether that's true for ideology ," said study contributor Danny Oppenheimer, professor of social and decision sciences in the Dietrich College of Humanities and Social Sciences. "[Political] ideology is a hidden variable, you can't tell by looking what party somebody identifies with, but many of these invisible categories are still detectable based on linguistic cues."

The team examined whether or not people can connect a political party to specific linguistic cues. The team did not examine politically tinged speech, like inheritance tax versus death tax, but how synonyms are used by each party. Examples include "financial versusmonetary," "colleague versus friend" or "folks versus people." To explore this concept, the research team conducted four experiments to evaluate how successfully participants could complete the task at a rate greater than chance.

"Democrats and Republicans select different words to discuss a topic," said Oppenheimer. "We wanted to see if people can pick up on this subtle speech pattern."

In the study, the researchers used machine learning to scan the Congressional Record (2012 to 2017) and the presidential debate corpora to isolate linguistic variation between the two political parties. They identified 8,345 words that were part of the Republican corpus and 7,873 with the Democratic corpus.

The results of the four studies showed that even controlling for the

dictionary definition of the word, the participants are more likely to associate "Republican language" with Republicans.

Oppenheimer believes the results of the study may skew more Republican because the five-year period of the study coincided with Republican control of the White House and Congress. He also noted that the majority of participants in the four studies self-identified as liberal, and the verbal cues may be stronger and more easily identifiable to those outside the party. In addition, the Congressional Record may not be representative of the variety of political speech people hear on a daily basis, which is more complex and adds context to the language used.

"The language we use is predictive, and humans are amazing at picking up on the subtle social cues of language," said Oppenheimer. "In a world where we are trying to create inclusion, if there are simple linguistic cues that we can [use] to make people feel less ostracized then that could be generally helpful to move toward these social goals."

Oppenheimer was joined by Sabina Sloman and Simon DeDeo also at Carnegie Mellon University on the project titled, "Can we detect conditioned variation in political speech? Two kinds of discussion and types of conversation."

Provided by Carnegie Mellon University