

Computer analysis shows that political speeches use simpler language and express more sentiments over time

MANHATTAN, KS, UNITED STATES, August 18, 2020 /EINPresswire.com/ -- While nearly every aspect of our lives has changed in the past one hundred years, it sometimes seems that the only thing that has not changed is the way politicians communicate with each other. But computer analysis of congressional speeches made between 1873 and 2010 shows that political speeches today are in fact very different in their style from political speeches made in Congress several decades ago. Computer scientists at Kansas State University analyzed nearly two million congressional speeches made by Republican and Democrat legislators. The research results show that more recent speeches use a smaller vocabulary, simpler language, express more sentiments, and have more noticeable differences between Democrat and Republican speakers.

In a [research paper](#) published recently in the journal Heliyon, Ethan Tucker, Colton Capps, and [Lior Shamir](#) used automatic text analysis algorithms to analyze congressional speeches in different years. The algorithms measured different aspects of the speeches such as the vocabulary, the reading level, the frequency in which different topics are discussed, and more. The analysis also used artificial intelligence to measure the sentiments expressed in each speech, rating the speeches as positive, very positive, negative, very negative, or neutral. These quantitative speech elements were computed from thousands of congressional speeches made in each year, and the average of each year allowed to measure the changes in the language and topics discussed in Congress during a period of 138 years.

The research showed that the frequency of words related to women's identity has been increasing consistently since the early 1980s, while the frequency of men's identity words has been decreasing. During most of the 20th century, expressions of women's identity were about 10 times less frequent than expressions of men's identity. In the 21st century women's identity in speeches is five times more frequent than in the 1950s, but still lower than men's identity words.

The research also showed that the reading level of the speeches changed significantly over the years. The analysis measured the Coleman-Liau readability index, which estimates the reading level of a certain text, and associates it with the appropriate school grade. The analysis showed that the reading level of congressional speeches made by both Republican and Democrat legislators increased consistently from 8th grade reading level in the 19th century, to 10th grade

level in the 1970s. But since 1976 the reading level of political speeches have been declining consistently, and as of the 21st century it is below 9th grade reading level. The same trend was also observed with the vocabulary used in speeches. The vocabulary used by members of Congress in their speeches has been increasing consistently until the early 1970s, and then started to decline, and it is still declining.

The analysis of the speeches also showed that more recent congressional speeches express more sentiments than the speeches made in Congress during the 19th century and early 20th century. The sentiments in political speeches became gradually more positive and peaked in the 1960s, but declined sharply during the 1970s. Since the 1970s the sentiments expressed in congressional speeches have been becoming more positive.

According to the study, the decline in reading level and vocabulary of the speeches can be related to the increasing presence of media in Congress. Until the 1970s, Congress largely resisted to radio and television broadcasting of congressional sessions. But as the resistance started to decline since the 1970s, members of Congress gradually adjust their speech style, addressing the public through the media rather than addressing their fellow legislators.

Another aspect reflected through the analysis was the partisan split. Starting the mid-1990s, Republican and Democratic speeches became increasingly more different from each other, and also correlated with the political affiliation of the president. For instance, during the George W. Bush administration speeches of Democratic legislators expressed more negative sentiments compared to their Republican counterparts. That difference flipped immediately after 2008, with the beginning of the Obama administration, during which Republican speeches became more negative. "With natural language processing we can extract new knowledge from old data," says Lior Shamir, who participated in the research. "There is no practical way to quantify and profile such a large number of speeches without using computers."

+1 248-318-5373

[email us here](#)

Lior Shamir

Kansas State University

This press release can be viewed online at: <https://www.einpresswire.com/article/524292204>

EIN Presswire's priority is source transparency. We do not allow opaque clients, and our editors try to be careful about weeding out false and misleading content. As a user, if you see something we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire™, tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information.

© 1995-2020 IPD Group, Inc. All Right Reserved.