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# The Left and the Right Speak Different Languages—Literally

A study analyzing patterns in online comments found that liberals and conservatives use different words to express similar ideas.



The language at a rally for President Trump would differ from that at a rally for Joe Biden.  PHOTOGRAPH: REY DEL RIO/GETTY IMAGES

**LIBERALS AND CONSERVATIVES** often seem to speak different languages. A new study using <u>artificial intelligence</u> says that is now literally true.

Researchers at Carnegie Mellon University collected more than 86.6 million comments from more than 6.5 million users on 200,000 YouTube videos, then analyzed them using an AI technique normally employed to translate between two languages.

The researchers found that people on opposing sides of the political divide often use different words to express similar ideas. For instance, the term "mask" among liberal commenters is roughly equivalent to the term "muzzle" for conservatives. Similar pairings were seen for "liberals" and "libtards" as well as "solar" and "fossil."

<u>Ashique KhudaBukhsh</u>, a project scientist at CMU involved with the study, says the polarization of American political discourse in recent years inspired him and colleagues to see if translation techniques might identify terms that were used in similar contexts by people with different views.

"We are practically speaking different languages—that's a worrisome thing," KhudaBukhsh says. "If 'mask' translates to 'muzzle,' you immediately know that there is a huge debate surrounding masks and freedom of speech."

In the study, the Carnegie Mellon researchers used a technique that has spurred big improvements in automated translation of words and phrases between different languages. It relies on examining how often a word appears close to other known words and comparing the pattern with another language. For instance, the relationship between the terms "car" and "road," expressed mathematically, may be the same in two different languages, allowing a computer to learn how to infer the correct translation of one of the terms.

Participants in a protest march. PHOTOGRAPH: ERIK MCGREGOR/GETTY IMAGES
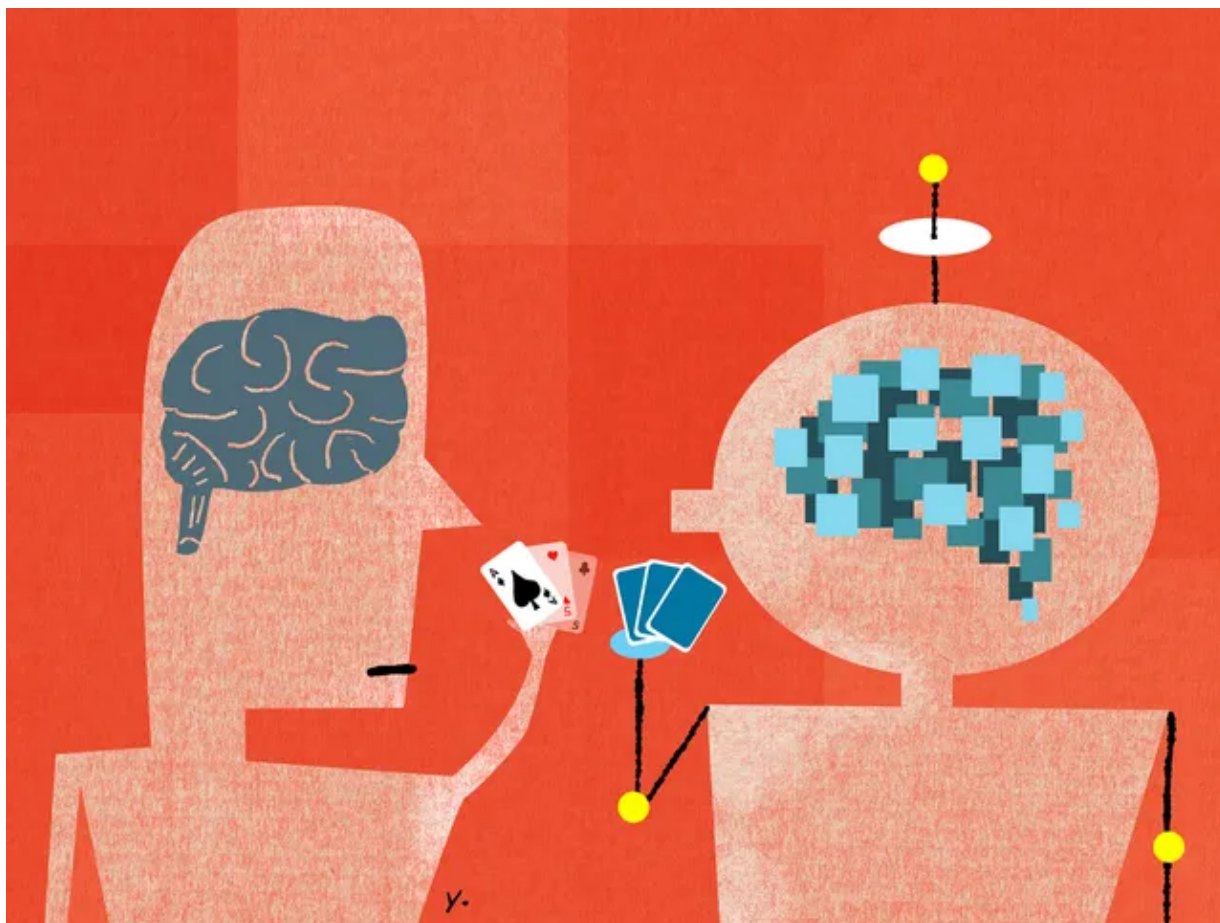
In the case of politically tinged comments, the researchers found that different words occupy a similar place in the lexicon of each community. The paper, which has been posted online but is not yet peer reviewed, looked at comments posted beneath the videos on four channels spanning left- and right-leaning US news—MSNBC, CNN, Fox News, and OANN.

KhudaBukhsh says social networks might use techniques like the one his team developed to build bridges between warring communities. A network could surface comments that avoid contentious or "foreign" terms, instead showing ones that represent common ground, he suggests. "Go to any social media platform; it has become so toxic, and it's almost like there is no known interaction" between users with different political viewpoints, he says.

But Morteza Dehghani, an associate professor at the University of Southern California who studies social media using computational methods, finds the approach problematic. He notes that the Carnegie Mellon paper considers "BLM" (Black Lives Matter) and "ALM" (all lives matter) a "translatable" pair, akin to "mask" and "muzzle."

"BLM and ALM are not translations of each other," he says. "One makes salient centuries of slavery, abuse, racism, discrimination, and fights for justice, while the other one tries to erase this history."

# The Secret to Machine Learning? Human Teachers

BY TOM SIMONITE

Dehghani says it would be a mistake to use computational methods that oversimplify issues and lack nuance. "What we need is not machine translation," he says. "What we need is perspective-taking and explanation—two things that AI algorithms are notoriously bad at."

Tom Mitchell, a Carnegie Mellon professor involved with the project, and a leading figure in machine learning, says the work aimed to highlight how some communities erroneously use certain terms as if they were equivalent. "Ascribing any equivalence between the concepts and philosophies these words embody is certainly not our intention," he says. "Our intention is to bring to light these real differences which do occur across these subcommunities."

Mitchell says recent progress in natural language processing holds significant promise for automating the analysis of written and spoken language, which could transform research in economics and sociology as well as political science.

Richard Socher, an expert on natural language processing who recently started a company that plans to use AI to tackle online "hate and misinformation," says the Carnegie Mellon study work is interesting but limited in how it views political discussion. "I would prefer an approach that is not binary"—treating

people as either on the left or the right, Socher says. "Analyzing the spectrum of political discourse makes more sense."

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Will Knight is a senior writer for WIRED, covering artificial intelligence. He was previously a senior editor at *MIT Technology Review*, where he wrote about fundamental advances in AI and China's AI boom. Before that, he was an editor and writer at *New Scientist*. He studied anthropology and journalism in... Read more

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