Brain imaging shows what happens when we question fake news

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Misinformation on social media may seem like an intractable problem, but a new study from business researchers at The University of Texas at Austin shows that asking a single question can be a powerful weapon

against fake news.

Simply asking, "How do I know this is true?" and attempting to answer the question based on personal knowledge activates the brain's critical thinking centers and challenges biases, according to the McCombs School of Business researchers.

"We're all at risk of believing misinformation," said the study's lead author, Tricia Moravec, an assistant professor of information, risk and operations management. "When we ask people these so-called self-referential questions, it helps them think more critically, not only about the headlines they see but also subsequent headlines."

The findings are forthcoming, online in advance, in *Information Systems Research*.

Moravec and her colleagues, Antino Kim and Alan R. Dennis of Indiana University and Randall K. Minas of the University of Hawaii, found that when people don't ask the question, they tend to accept articles that fit their beliefs.

In the study, the researchers asked participants to rate randomly assigned headlines on their truthfulness and believability. Using a mocked up social media page, with both left- and right-leaning headlines from a fabricated news source, researchers then asked participants to rate their personal knowledge of a given news story: "How truthful is this story?"

Participants selected from choices, including:

- I have personal knowledge of this story and it's true
- I have personal knowledge and it's false
- I have no personal knowledge, but it seems true
- I have no personal knowledge, but it seems false

- I cannot tell whether it's true or false

Study participants wore an EEG headset so researchers could measure neurophysiological changes as they evaluated the headlines, half of which were true and half false. Researchers found those who rated articles while questioning their own knowledge of the topic had increased activation in several parts of the brain associated with deliberate cognitive activity.

The question caused some participants to realize they had no firsthand way to evaluate the credibility of the news story. They thought more deeply about the news piece, versus automatically assuming articles that aligned with their beliefs were true. Moreover, the researchers found a lingering effect: Participants continued to critically analyze content even when they weren't prompted to do so by asking a self-referential question.

For social media companies, the researchers said adding a question about the readers' knowledge of an article's truthfulness could help curb the spread of misinformation and encourage a more critical evaluation of content. Yet, they note that people tend to turn to social media for entertainment, connecting with friends, or escapism, and asking them a self-referential question that requires cognitive effort might not be enjoyable. Social media companies are unlikely to pursue anything that could annoy users and cut into their profits, she said.

More information: Patricia L. Moravec et al, Do You Really Know if It's True? How Asking Users to Rate Stories Affects Belief in Fake News on Social Media, *Information Systems Research* (2022). DOI: 10.1287/isre.2021.1090