

You create your own false information, study finds

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Along with partisan news outlets and political blogs, there's another surprising source of misinformation on controversial topics—it's you.

A new study found that people given accurate statistics on a controversial issue tended to misremember those numbers to fit commonly held beliefs.

For example, when people are shown that the number of Mexican immigrants in the United States declined recently—which is true but goes against many people's beliefs—they tend to remember the opposite.

And when people pass along this misinformation they created, the numbers can get further and further from the truth.

"People can self-generate their own misinformation. It doesn't all come from external sources," said Jason Coronel, lead author of the study and assistant professor of communication at The Ohio State University.

"They may not be doing it purposely, but their own biases can lead them astray. And the problem becomes larger when they share their self-generated misinformation with others."

Coronel conducted the study with Shannon Poulsen and Matthew Sweitzer, both doctoral students in communication at Ohio State. The study was published online in the journal *Human Communication Research* and will appear in a future print edition.

The researchers conducted two studies.

In the first study, the researchers presented 110 participants with short written descriptions of four societal issues that involved numerical information.

On two of those societal issues, the researchers did pre-tests and found that the factually accurate numerical relationship fit with many people's understanding of the issue. For example, many people generally expect

more Americans to support same-sex marriage than oppose it, which coincides with public opinion polls.

But the researchers also presented participants with two issues for which the numbers didn't fit with how most people viewed the topics.

For example, most people believe that the number of Mexican immigrants in the United States grew between 2007 and 2014. But in fact, the number declined from 12.8 million in 2007 to 11.7 million in 2014.

After reading all the descriptions of the issues, the participants got a surprise. They were asked to write down the numbers that were in the descriptions of the four issues. They were not told in advance they would have to memorize the numbers.

The researchers found that people usually got the numerical relationship right on the issues for which the stats were consistent with how many people viewed the world. For example, participants typically wrote down a larger number for the percentage of people who supported same-sex marriage than for those who opposed it—which is the true relationship.

But when it came to the issues where the numbers went against many people's beliefs—such as whether the number of Mexican immigrants had gone up or down—participants were much more likely to remember the numbers in a way that agreed with their probable biases rather than the truth.

"We had instances where participants got the numbers exactly correct—11.7 and 12.8—but they would flip them around," Coronel said.

"They weren't guessing—they got the numbers right. But their biases

were leading them to misremember the direction they were going."

By using eye-tracking technology on participants while they read the descriptions of the issues, the researchers had additional evidence that people really were paying attention when they viewed the statistics.

"We could tell when participants got to numbers that didn't fit their expectations. Their eyes went back and forth between the numbers, as if they were asking 'what's going on.' They generally didn't do that when the numbers confirmed their expectations," Coronel said.

"You would think that if they were paying more attention to the numbers that went against their expectations, they would have a better memory for them. But that's not what we found."

In the second study, the researchers investigated how these memory distortions could spread and grow more distorted in everyday life. They designed a study similar to the childhood game of "telephone."

For example, the first person in the "telephone chain" in this study saw the accurate statistics about the trend in Mexican immigrants living in the United States (that it went down from 12.8 million to 11.7 million). They had to write those numbers down from memory, which were then passed along to the second person in the chain, who had to remember them and write them down. The second person's estimates were then sent to a third participant.

Results showed that, on average, the first person flipped the numbers, saying that the number of Mexican immigrants increased by 900,000 from 2007 to 2014 instead of the truth, which was that it decreased by about 1.1 million.

By the end of the chain, the average participant had said the number of

Mexican immigrants had increased in those 7 years by about 4.6 million.

"These memory errors tended to get bigger and bigger as they were transmitted between people," Sweitzer said.

Coronel said the study did have limitations. For example, it is possible that the participants would have been less likely to misremember if they were given explanations as to why the numbers didn't fit expectations. And the researchers didn't measure each person's biases going in—they used the biases that had been identified by pre-tests they conducted.

Finally, the telephone game study did not capture important features of real-life conversations that may have limited the spread of misinformation.

But the results did suggest that we shouldn't worry only about the misinformation that we run into in the outside world, Poulsen said.

"We need to realize that internal sources of misinformation can possibly be as significant as or more significant than external sources," she said.

"We live with our biases all day, but we only come into contact with [false information](#) occasionally."

More information: *Human Communication Research* (2019). [academic.oup.com/hcr/advance-a ... 3/hcr/hqz012/5652186](https://academic.oup.com/hcr/advance-article-abstract/doi/10.1093/hcr/hqz012/5652186)

Provided by The Ohio State University

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