

# 'Likes' and 'shares' teach people to express more outrage online

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By Bill Hathaway

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Social media platforms like Twitter amplify expressions of moral outrage over time because users learn such language gets rewarded with an increased number of “likes” and “shares,” a new Yale University study shows.

And these rewards had the greatest influence on users connected with politically moderate networks.

“Social media’s incentives are changing the tone of our political conversations online,” said Yale’s William Brady, a postdoctoral researcher in the Yale Department of Psychology and first author of the study. He led the research with Molly Crockett, an associate professor of psychology at Yale.

The Yale team measured the expression of moral outrage on Twitter during real life controversial events and studied the behaviors of subjects in controlled experiments designed to test whether social media’s algorithms, which reward users for posting popular content, encourage outrage expressions.

“This is the first evidence that some people learn to express more outrage over time because they are rewarded by the basic design of social media,” Brady said.

The study was published Aug. 13 in the journal Science Advances.

Moral outrage can be a strong force for societal good, motivating punishment for moral transgressions, promoting social cooperation, and spurring social change. It also has a dark side, contributing to the harassment of minority groups, the spread of disinformation, and political polarization, researchers said.

Social media platforms like Facebook and Twitter argue that they merely provide a neutral platform for conversations that would otherwise happen elsewhere. But many have speculated that social media amplifies outrage. Hard evidence for this claim was missing, however, because measuring complex social expressions like moral outrage with precision poses a technical challenge, the researchers said.

To compile that evidence, Brady and Crockett assembled a team which built machine learning software capable of tracking moral outrage in Twitter posts. In observational studies of 12.7 million tweets from 7,331 Twitter users, they used the software to test whether users expressed more outrage over time, and if so, why.

The team found that the incentives of social media platforms like Twitter really do change how people post. Users who received more “likes” and “retweets” when they expressed outrage in a tweet were more likely to express outrage in later posts. To back up these

findings, the researchers conducted controlled behavioral experiments to demonstrate that being rewarded for expressing outrage caused users to increase their expression of outrage over time.

The results also suggest a troubling link to current debates on social media's role in political polarization. Brady and his colleagues found that members of politically extreme networks expressed more outrage than members of politically moderate networks. However, members of politically moderate networks were actually more influenced by social rewards.

“Our studies find that people with politically moderate friends and followers are more sensitive to social feedback that reinforces their outrage expressions,” Crockett said. “This suggests a mechanism for how moderate groups can become politically radicalized over time — the rewards of social media create positive feedback loops that exacerbate outrage.”

The study did not aim to say whether amplifying moral outrage is good or bad for society, Crockett stressed. But the findings do have implications for leaders who use the platforms and policy makers who are considering whether to regulate them.

“Amplification of moral outrage is a clear consequence of social media's business model, which optimizes for user engagement,” Crockett said. “Given that moral outrage plays a crucial role in social and political change, we should be aware that tech companies, through the design of their platforms, have the ability to influence the success or failure of collective movements.”

She added, “Our data show that social media platforms do not merely reflect what is happening in society. Platforms create incentives that change how users react to political events over time.”

Those wishing to learn more about the research and participate in future studies can follow the research team's account on Twitter: [@sms\\_researchers](#).