

Lecture 19: Social media and society

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Sociology 204: Social Networks
Princeton University

1/2 What's happening on social media?



- ▶ What is going viral? Lies and outrage

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- ▶ Who is more responsible algorithms or people? Hard to say

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- ▶ Who is more responsible algorithms or people? Hard to say
- ▶ I'll try to mix in some other studies that help put these results in context.

Background

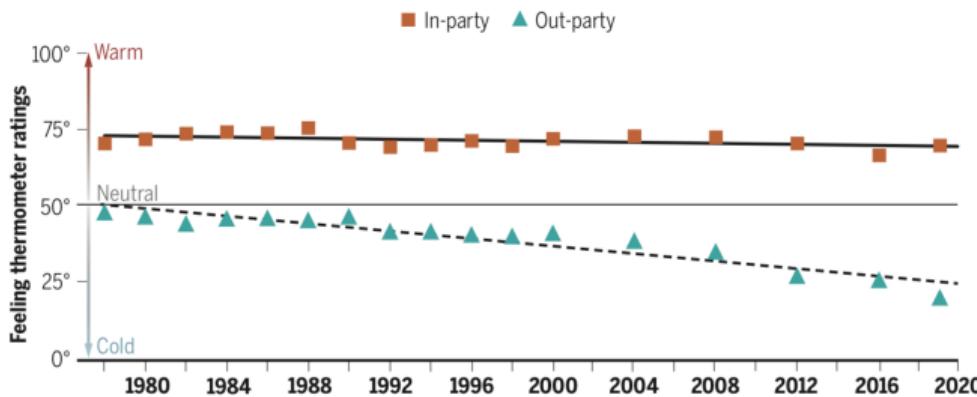
SOCIAL SCIENCE

Political sectarianism in America

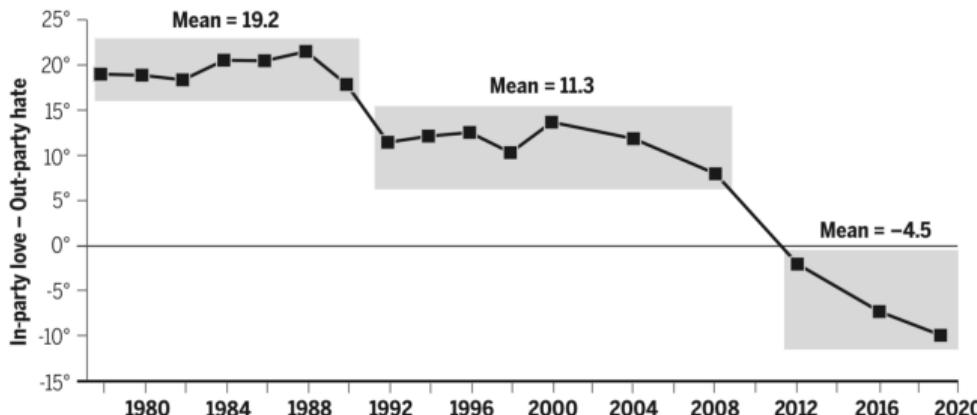
A poisonous cocktail of othering, aversion, and moralization poses a threat to democracy

By Eli J. Finkel¹, Christopher A. Bail², Mina Cikara³, Peter H. Ditto⁴, Shanto Iyengar⁵, Samara Klar⁶, Lilliana Mason⁷, Mary C. McGrath¹, Brendan Nyhan⁸, David G. Rand⁹, Linda J. Skitka¹⁰, Joshua A. Tucker¹¹, Jay J. Van Bavel¹¹, Cynthia S. Wang¹, James N. Druckman¹

Warmth toward the opposing party (out-party) has diminished for decades



Out-party hate has emerged as a stronger force than in-party love



The Filter Bubble

What [REDACTED] the [REDACTED]

[REDACTED]
[REDACTED] Internet [REDACTED]

[REDACTED]
Is [REDACTED]

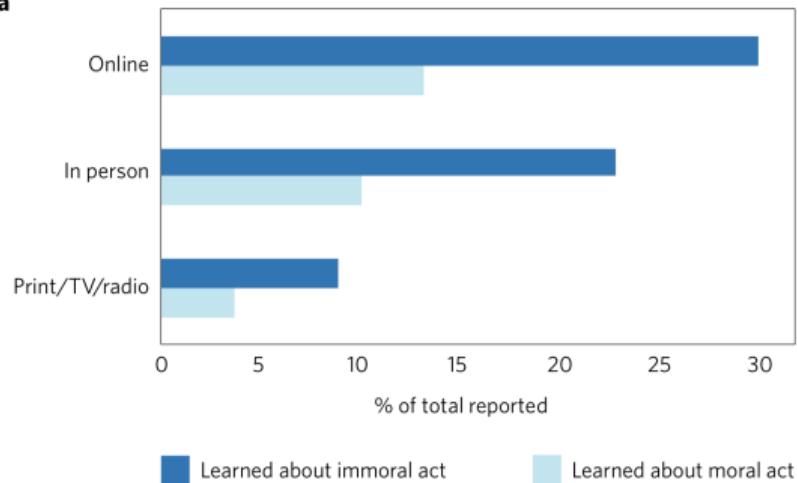
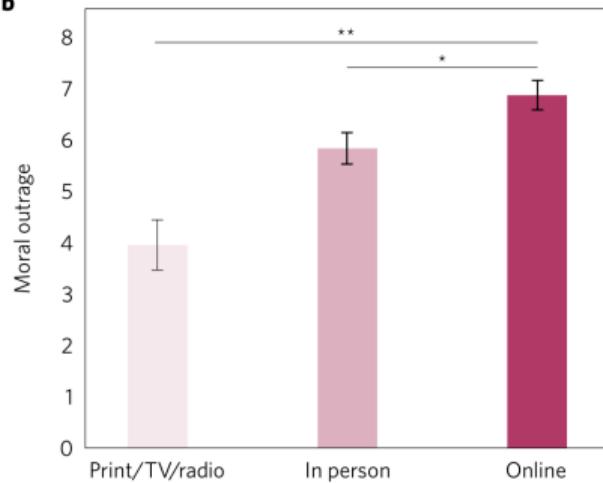
[REDACTED]
Hiding [REDACTED]

[REDACTED]
From [REDACTED]

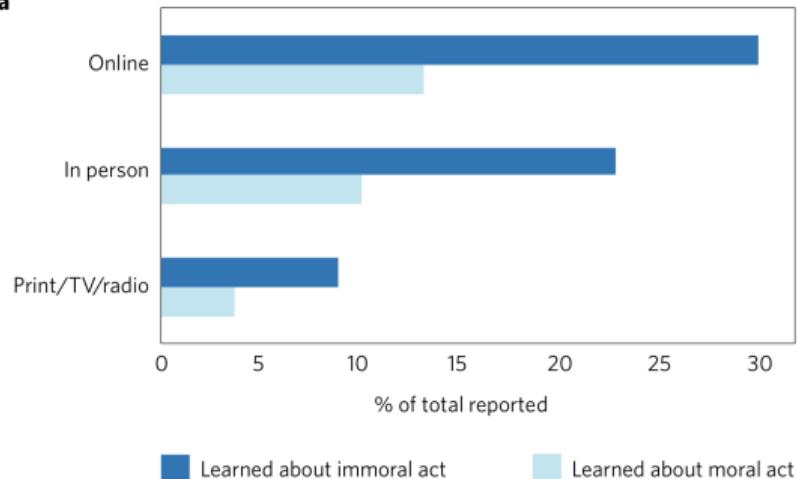
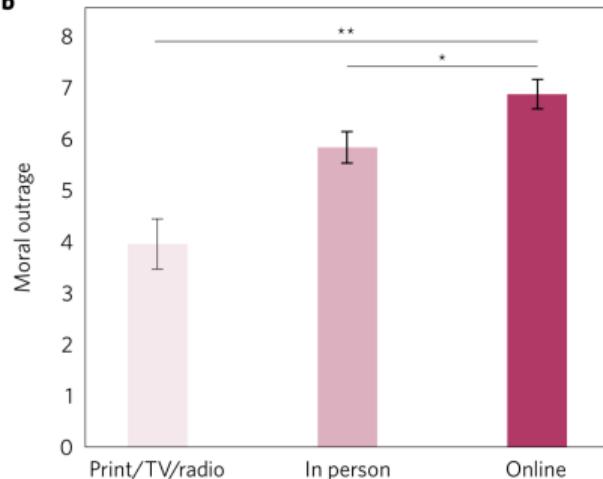
[REDACTED]
You [REDACTED]

Eli Pariser

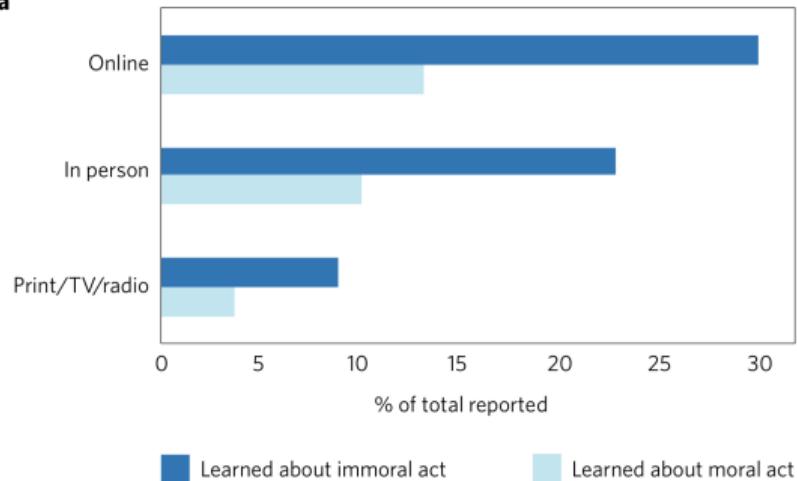
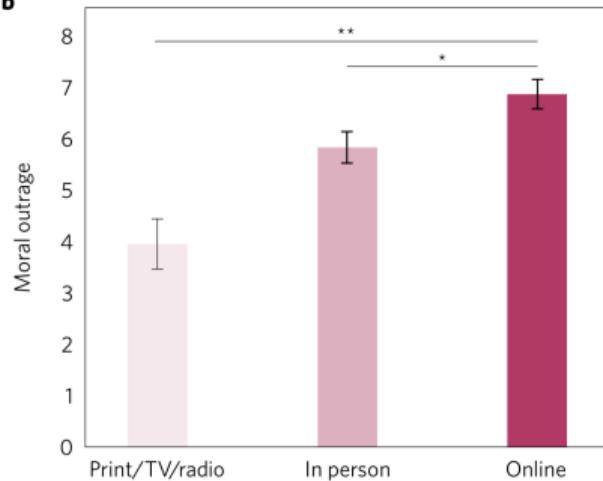
What goes viral? Moral outrage and lies

a**b**

- ▶ People more likely to learn about immoral acts online than through other media

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- ▶ People more likely to learn about immoral acts online than through other media
- ▶ Outrageous acts that people see online lead to more outrage
- ▶ “Digital media transform moral outrage by changing both the nature and prevalence of the stimuli that trigger it.”

***THIS PAPER IS CURRENTLY UNDER REVIEW IN PEER REVIEW**

SUPPLEMENTARY ONLINE MATERIALS (SOM) ARE AVAILABLE [HERE](#)

Title

How social learning amplifies moral outrage expression in online social networks

Short title: Social learning of outrage in online networks

Authors

W.J. Brady,^{1*} K. McLoughlin¹, T.N. Doan², & M.J. Crockett^{1*}

- ▶ two observational studies and two experiments (all preregistered)

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- ▶ two observational studies and two experiments (all preregistered)
- ▶ reinforcement learning and norm learning, both of which are controlled in part by design of social media platforms

"A person can be viewed as expressing moral outrage if:

- ▶ they have feelings in response to a perceived violation of their personal morals
- ▶ their feelings are comprised of emotions such as anger, disgust, and contempt
- ▶ the feelings are associated with specific reactions including blaming people/events/things, holding them responsible or wanting to punish them."

They labeled many example tweets and then built a Digital Outrage Classifier



MOLLY CROCKETT

YALE UNIVERSITY

▶ ▶ 🔍 0:09 / 18:28

▶ 🔍 🎧 🎵 🎥 🎞

<https://www.youtube.com/watch?v=b2AYlD8ReeA&t=11m26s>

Supporting our hypotheses, we found that daily outrage expression was significantly and positively associated with the amount of social feedback received for the previous day's outrage expression (Study 1: $b = 0.03, p < .001, 95\% \text{ CI} = [0.03, 0.03]$; Study 2: $b = 0.02, p < .001, 95\% \text{ CI} = [0.02, 0.03]$). For our model, this effect size translates to an expected 2-3% increase in outrage expression on the following day of tweeting if a user received a 100% increase in feedback for expressing outrage on a given day. For instance, a user who averaged 5 likes/shares per tweet, and then received 10 likes/shares when they expressed outrage, would be expected to increase their outrage expression on the next day by 2-3%. While this effect size is small, it can easily scale on social media over time, become notable at scale at the network level, or for users who maintain a larger followership and could experience much higher than 100% increases in social feedback for tweeting outrage content (e.g., political leaders). For other model specifications to test the robustness of the effect, see SOM, Section 2.0.

Three main findings from observational studies

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- ▶ “users are more likely to express outrage in more ideologically extreme social networks”
- ▶ “in more ideologically extreme social networks, users’ outrage expression behavior is less sensitive to social feedback.”

Finding are consistent with reinforcement learning and norm learning, but there are limits to what they can learn just from watching without controlling the environment

Experimental evidence of massive-scale emotional contagion through social networks

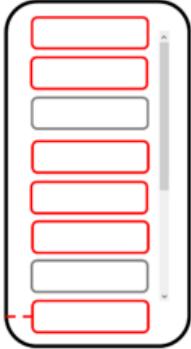
Adam D. I. Kramer^{a,1}, Jamie E. Guillory^{b,2}, and Jeffrey T. Hancock^{b,c}

^aCore Data Science Team, Facebook, Inc., Menlo Park, CA 94025; and Departments of ^bCommunication and ^cInformation Science, Cornell University, Ithaca, NY 14853

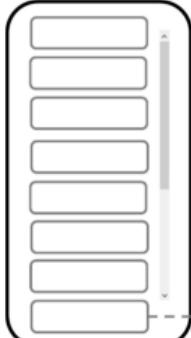
We also observed a withdrawal effect: People who were exposed to fewer emotional posts (of either valence) in their News Feed were less expressive overall on the following days, addressing the question about how emotional expression affects social engagement online. This observation, and the fact that

Scrolling Stage

Outrage Norm Condition

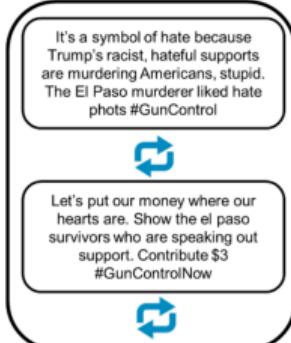


Neutral Norm Condition



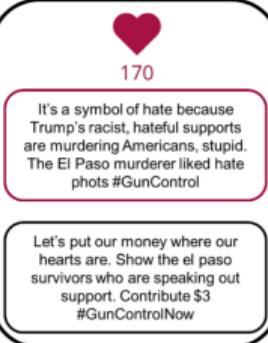
Learning Stage

Choose Tweet

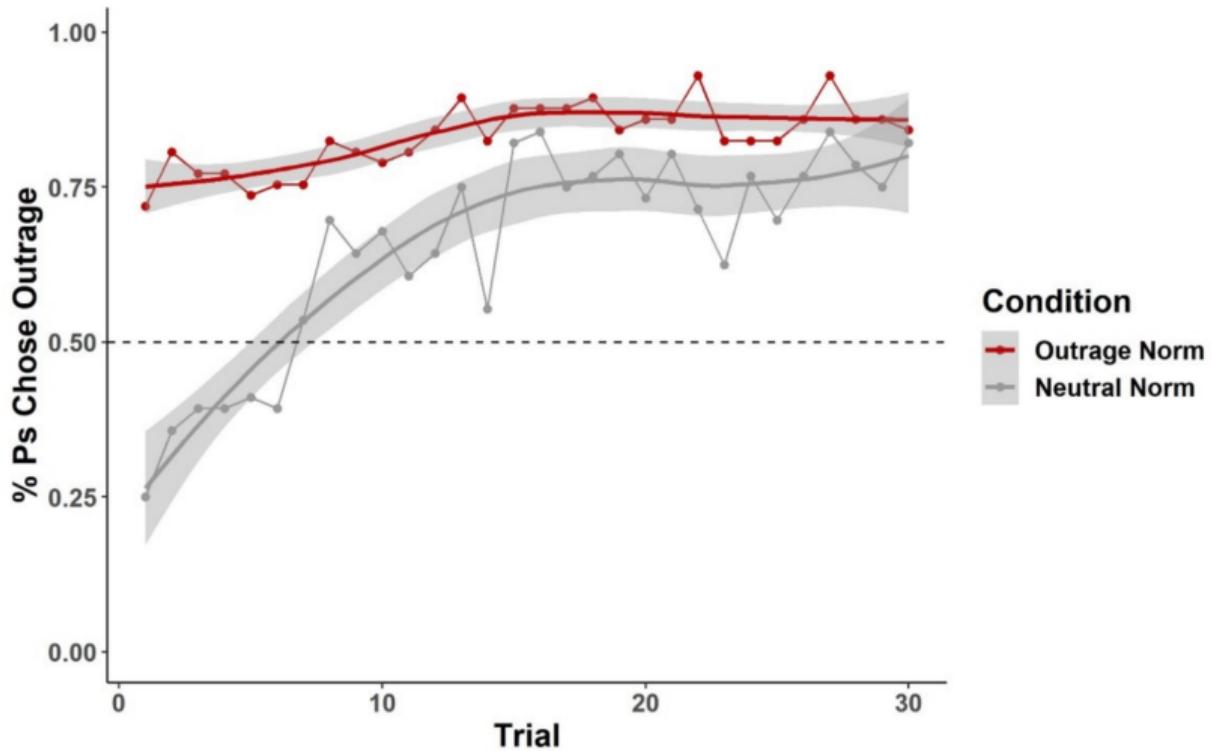


30 trials

Receive Feedback



- Now researchers can vary the environment (norms) and feedback (reinforcement)



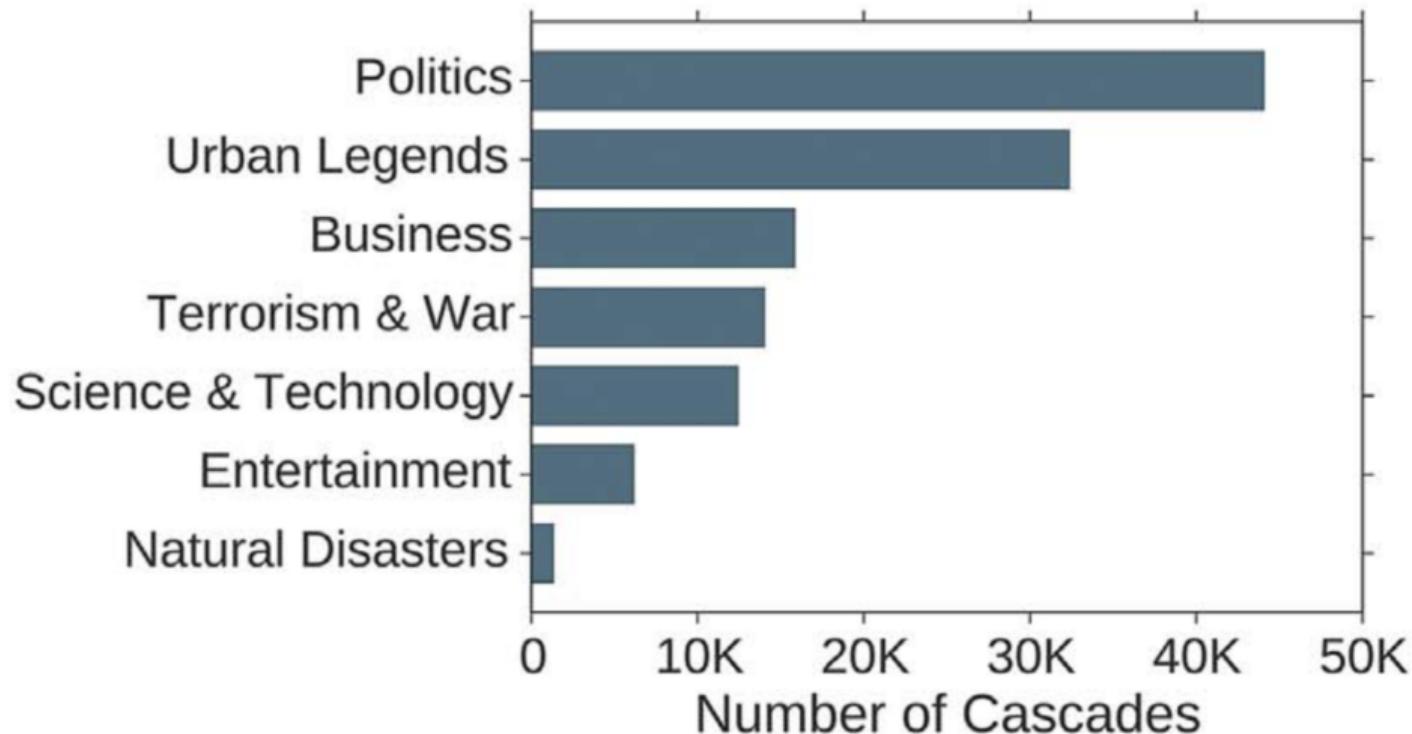
- ▶ Norms matter and people learn to choose outrage

Who is responsible? People are doing it, but what about the architects?

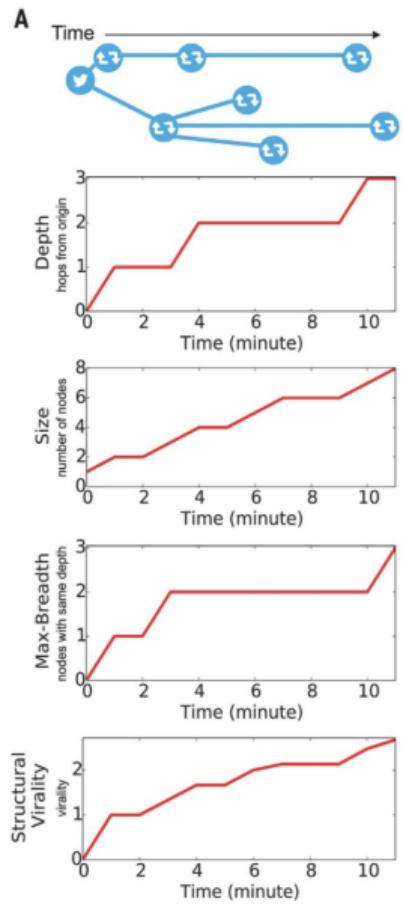
What goes viral? Moral outrage and lies

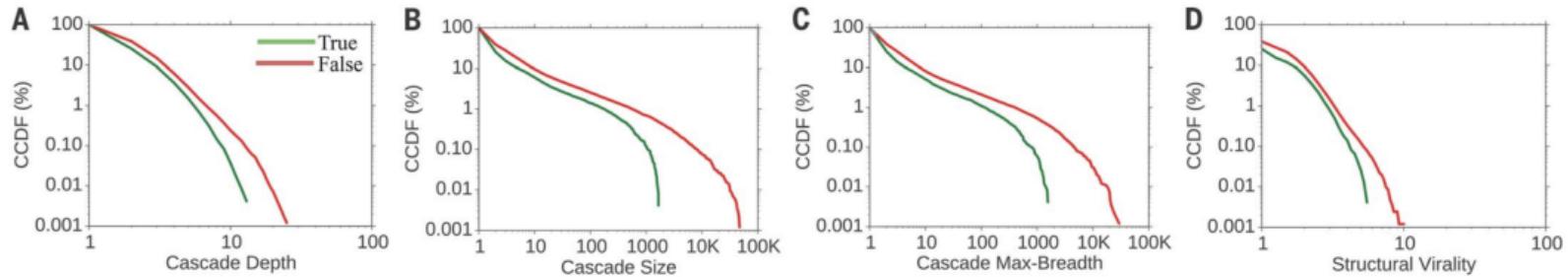
The spread of true and false news online

Soroush Vosoughi,¹ Deb Roy,¹ Sinan Aral^{2*}



Unlike Goel et al. these are measured as true or false based on 6 fact checking websites





- ▶ false rumors spread deeper, are more retweeted, spread more broadly, and are more viral than true rumors

What might explain this pattern?

What might explain this pattern? False rumors are more novel than true rumors and so people decide to retweet them.

- ▶ Is this because the face checked rumors are somehow different?

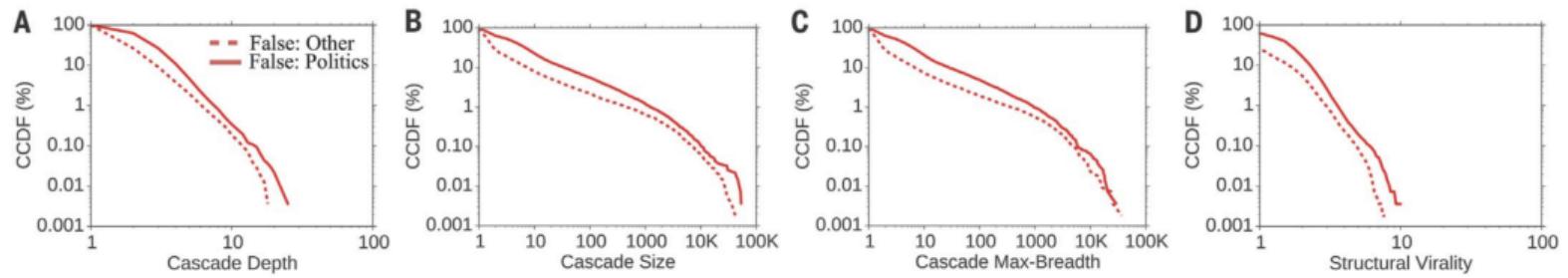
- ▶ Is this because the face checked rumors are somehow different? No. Newly, independently checked rumors show similar pattern.

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- ▶ Why does this matter?

- ▶ Is this because the face checked rumors are somehow different? No. Newly, independently checked rumors show similar pattern.
- ▶ Is this because of bots? No. If you remove bots you get similar patterns
- ▶ Why does this matter? It impacts which policy you might use to intervene (e.g., labeling for humans, training for humans vs bot removal)



- ▶ political rumors spreads deeper, are more retweeted, spread more broadly, and are more viral than true rumors

All of this might make you think that we are awash in false rumors about politics, but.

. . .

Fake news on Twitter during the 2016 U.S. presidential election

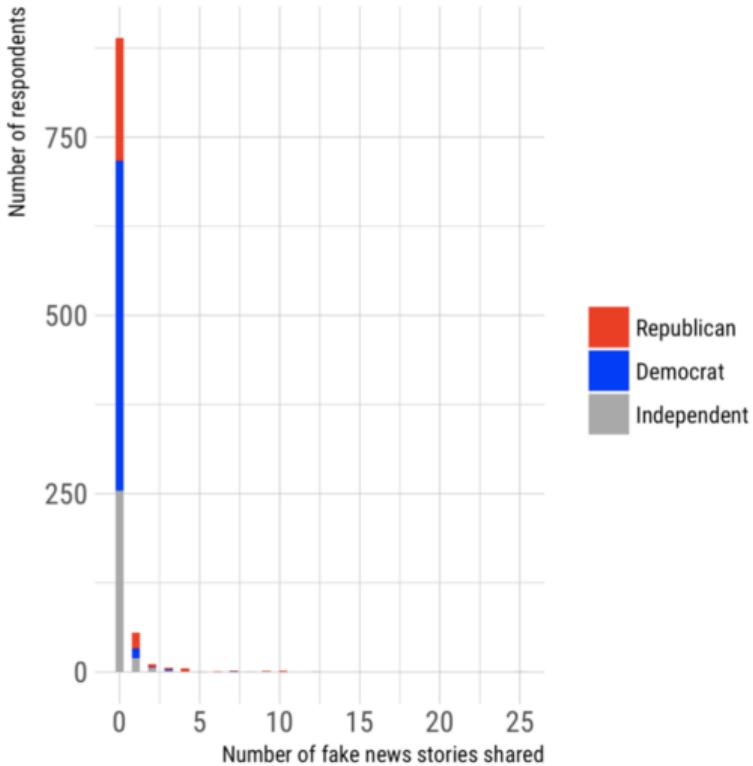
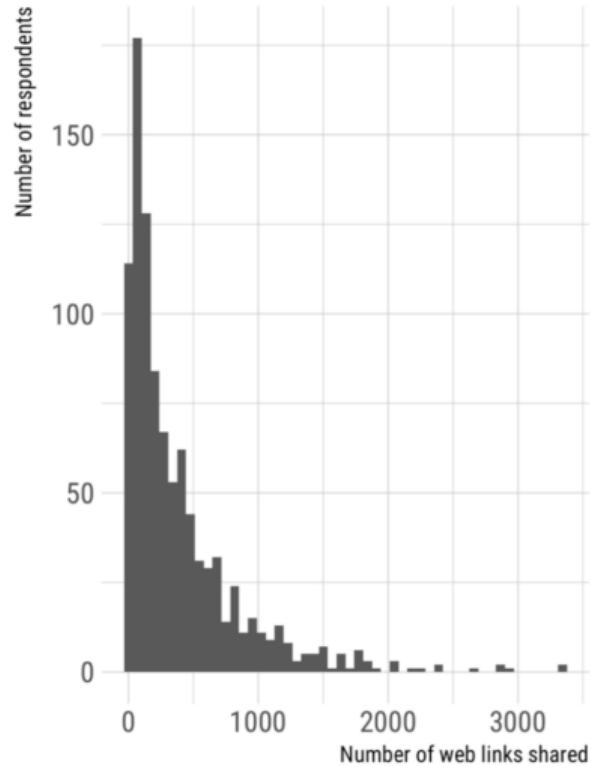
Nir Grinberg^{1,2*}, Kenneth Joseph^{3*}, Lisa Friedland^{1*},
Briony Swire-Thompson^{1,2}, David Lazer^{1,2†}

The spread of fake news on social media became a public concern in the United States after the 2016 presidential election. We examined exposure to and sharing of fake news by registered voters on Twitter and found that engagement with fake news sources was extremely concentrated. Only 1% of individuals accounted for 80% of fake news source exposures, and 0.1% accounted for nearly 80% of fake news sources shared. Individuals most likely to engage with fake news sources were conservative leaning, older, and highly engaged with political news. A cluster of fake news sources shared overlapping audiences on the extreme right, but for people across the political spectrum, most political news exposure still came from mainstream media outlets.

Less than you think: Prevalence and predictors of fake news dissemination on Facebook

Andrew Guess^{1*}, Jonathan Nagler², Joshua Tucker²

So-called “fake news” has renewed concerns about the prevalence and effects of misinformation in political campaigns. Given the potential for widespread dissemination of this material, we examine the individual-level characteristics associated with sharing false articles during the 2016 U.S. presidential campaign. To do so, we uniquely link an original survey with respondents’ sharing activity as recorded in Facebook profile data. First and foremost, we find that sharing this content was a relatively rare activity. Conservatives were more likely to share articles from fake news domains, which in 2016 were largely pro-Trump in orientation, than liberals or moderates. We also find a strong age effect, which persists after controlling for partisanship and ideology: On average, users over 65 shared nearly seven times as many articles from fake news domains as the youngest age group.



► people share links of Facebook, just not fake news

Also, we have no good estimates (that I've seen) about the *impact* of any of these false rumors on people's beliefs

The science of fake news

Addressing fake news requires a multidisciplinary effort

*By David M. J. Lazer, Matthew A. Baum,
Yochai Benkler, Adam J. Berinsky, Kelly
M. Greenhill, Filippo Menczer, Miriam
J. Metzger, Brendan Nyhan, Gordon
Pennycook, David Rothschild, Michael
Schudson, Steven A. Sloman, Cass R.
Sunstein, Emily A. Thorson, Duncan J.
Watts, Jonathan L. Zittrain*

<https://dx.doi.org/10.1126/science.aao2998>

Next lets focus on one specific algorithm thought to be related to political polarization:
Facebook NewsFeed