How many others have shared this? Experimentally investigating the effects of social cues on engagement, misinformation, and unpredictability on social media

Keywords: social influence, social media, fake news, digital experimentation

Extended Abstract

Unlike traditional media, social media typically provides quantified metrics of how many users have engaged with each piece of content. In particular, posts a user sees on social media are often annotated with quantified social cues, indicating how many other people have engaged with that post. Past work [3] has explored the role of potential social influence cues on information environments, and in the the context of news it has been argued that the presence of these cues promotes the spread of misinformation [1].

Here we investigate the causal effect of social cues on users' engagement with social media posts. We conducted an experiment with N=628 Americans using a platform for feed experimentation [2], where participants scrolled a newsfeed of 120 social media posts, some true, some false. Participants were randomly assigned to one of two conditions. In the treatment condition, participants saw social cues for each post in their feed (see Figure 1, left). In particular, each post contained a number of likes and number of shares. These numbers were simulated independently for each post for each participant by sampling from a log-norm distribution, with mean 3 and standard deviation 0.8. For the number of shares, we divided the number of likes by a integer uniformly sampled between 5 and 20. In the Control conditions, participants saw no social cues at all (see Figure 1, right).

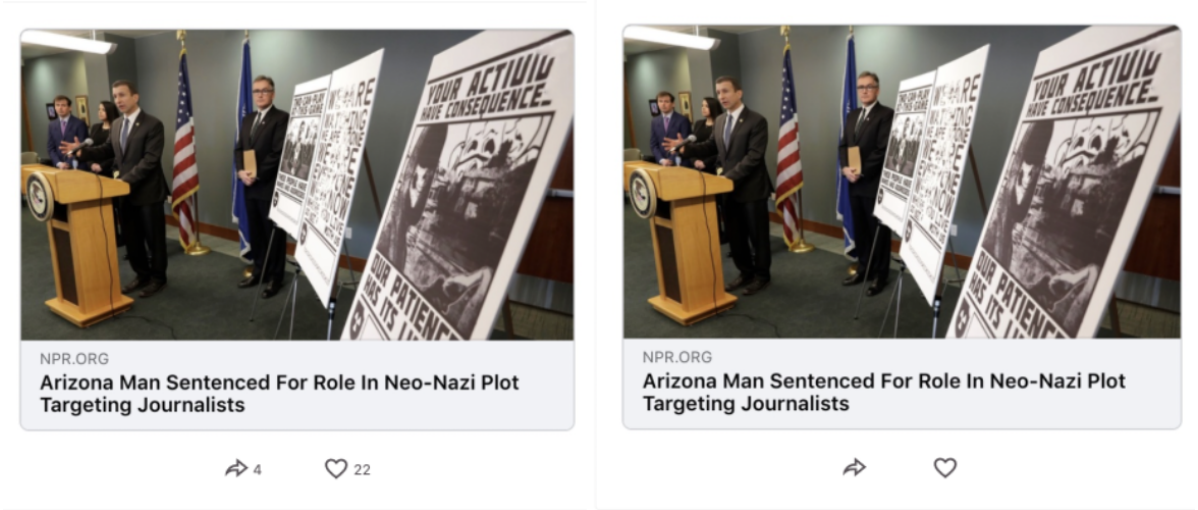

Figure 1: Example of a post shown in Yourfeed for treatment (left) and control (right) groups. Social cues for posts in the treatment condition were generated at random for each post for each participant.

We find that when cues are shown, indicating that a larger number of others have engaged with a post, users were more likely to share and like that post (see Figure 2, left). Furthermore, relative to a control without social cues, the presence of social cues increased the sharing of true relative to false news (see Figure 2, right).

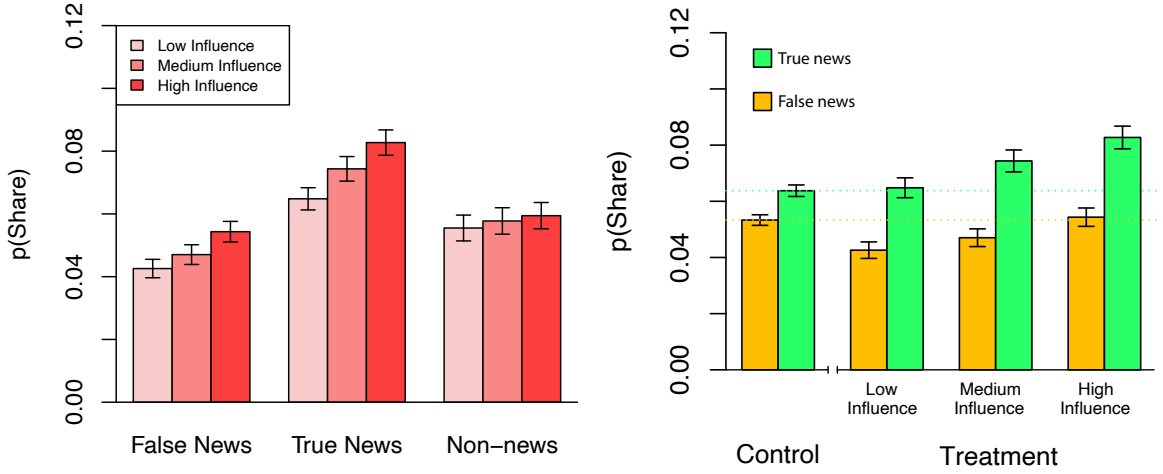

Figure 2: Left: Sharing rates across three social influence cues terciles in treatment data for false news, true news and non-news. Right: Share rates for true and false news across conditions and engagement levels

Finally, we show that presence of social cues also makes it more difficult to predict how popular any given post would be by training gradient boosting decision trees to predict the overall sharing rate of each post using the eight post-level features obtained from a pre-test. We find that the mean squared error was significantly higher in the treatment than control condition ($p = 0.007$), suggesting that the predictive accuracy of post sharing rate was worse in the treatment than control condition. By comparing the Shapley post feature attributions between the treatment and control conditions, we find evidence consistent with the finding that social influence increases discernment: For the model trained to predict each post's sharing rate, the Shapley values for the truth feature was higher in the treatment than control condition ($p = 0.012$), suggesting the veracity of a post had a stronger and more positive effect on sharing.

Together, our results suggest that – instead of distracting users or causing them to share low-quality news – social cues may, in certain circumstances, actually boost truth discernment and reduce the sharing of misinformation. Our work suggests that social cues play important roles in shaping users' attention and engagement on social media, and platforms should understand the effects of different cues before making changes to what cues are displayed and how.

References

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