Views you can use? How online ratings affect your judgment

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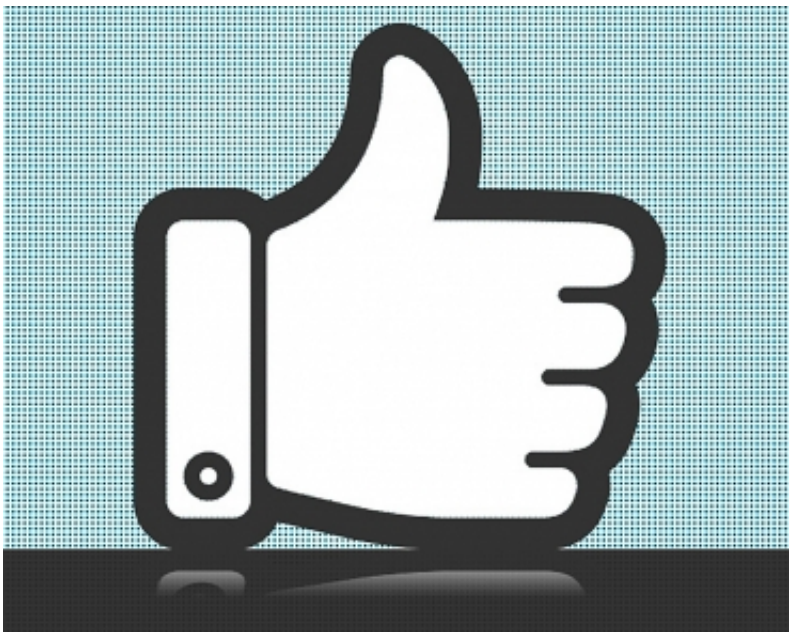

Credit: Christine Daniloff

Are you influenced by the opinions of other people—say, in the comments sections of websites? If your answer is no, here's another question: Are you sure?

A new study co-authored by an MIT professor suggests that many people are, in fact, heavily influenced by the positive opinions other people express online—but are much less swayed by negative opinions posted in the same venues. Certain topics, including politics, see much more of

this "herding" effect than others.

The results, published today in the journal *Science*, detail a five-month experiment conducted on a major news-aggregation web site. The research group systematically altered the favorability ratings given to certain comments on the site, to see how perceptions of favorability affected people's judgment about those comments. They found that comments whose ratings were manipulated in a favorable direction saw their popularity snowball, receiving a 25 percent higher average rating from other site users.

"This herding behavior happens systematically on positive signals of quality and ratings," says Sinan Aral, an associate professor at the MIT Sloan School of Management, and one of three authors of the study. At the same time, Aral notes, the results "were asymmetric between positive and negative herding." Comments given negative ratings attracted more negative judgments, but that increase was drowned out by what the researchers call a "correction effect" of additional positive responses.

"People are more skeptical of negative social influence," Aral says. "They're more likely to 'correct' a negative vote and give it a positive vote."

While this phenomenon of social positivity sounds pleasant enough on the surface, Aral warns that there are pitfalls to it, such as the manipulation of online ratings by some political operatives, marketers or anyone who stands to profit by creating an exaggerated appearance of popularity.

"These positive ratings also represent bias and inflation," Aral says. "The housing bubble was a spread of positivity, but when it burst, some people lost their savings and their houses went underwater. Stock bubbles represent a positive herding, and they can be dramatically bad in the

wrong context."

Still, the experiment also revealed topical limitations in herding: Stories under the rubrics of "politics," "culture and society" and "business" generated positive herding, but stories posted under the topics of "economics," "IT," "fun" and "general news" did not.

More wisdom about crowds

In turn, Aral suggests, we should be as analytical as possible when it comes to harnessing collective judgments.

"We have to be careful about the design and analysis of systems that try to aggregate the wisdom of crowds," Aral says.

The research was conducted by Lev Muchnik of the Hebrew University of Jerusalem; Sean Taylor of New York University; and Aral, who joined MIT this summer.

The experiment was conducted on a news-aggregation site whose identity the researchers cannot disclose for legal reasons, although Aral allows that it operates along the lines of popular sites such as Reddit. Over the five-month period, the researchers randomly manipulated the ratings given to 101,281 comments to the site. In this way, they could see how readers evaluated the same comments when those comments were given different ratings.

This approach was necessary, Aral points out, because in most circumstances, "It's hard to distinguish the effect of high quality from the effect of social influence bias. It could be that past positive ratings have snowballed to create a high score, or it could just be that those items likely to get high scores are just of high quality."

The researchers also found that comments manipulated to have positive ratings were 32 percent more likely than untreated comments to receive a favorable rating from the very next viewer of those comments, and 30 percent more likely than untreated comments to obtain a very high favorable rating.

Positive ratings for the research—but more is needed

For his part, Aral agrees that the experiment "opens up as many questions as it answers." He suggests that it would also be valuable to have more work "explaining the psychology of the correction effect on the negative side," as a way of understanding how collective judgments are formed.

"Our message is not that we should do away with crowd-based opinion aggregation," Aral says. "Our point is that you need solid science under the hood trying to understand exactly how these mechanisms work in a broad population, what that means for the diffusion of opinion, and how can we design the systems to be fair, to have less incentives for manipulation and fraud, and be safe in aggregating opinions."

More information: "Social Influence Bias: A Randomized Experiment," by L. Muchnik et al *Science*, 2013.

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