

Study finds people flock, or behave similarly to others, despite reasoning abilities

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Crowd panics, market bubbles, and other unpredictable collective behaviors would not happen if people were smart about these things and just thought through their behavior before they acted. Right? That's the perspective in economics, and even psychology and sociology.

But a UC Davis researcher looked at how people behave in simple [reasoning](#) games and found that people are usually driven to "flock," or behave similarly to others in a given situation. Seth Frey, an assistant professor of communication at UC Davis, said this happens "even when people use the fancy reasoning processes that are supposed to make humans so special."

Frey is lead author of an article, "Cognitive mechanisms for human flocking dynamics." The paper appeared in the *Journal of Computational Social Science* this month.

"The basic idea is that we have this preconception about fads and panics and flocks and herds, that they are driven by our basest animal spirits, and that adding thoughtfulness or education or

intelligence would make those things go away," Frey said.

"This paper shows that people who are being thoughtful (specifically people who are doing dizzying 'what you think I think you think I think' reasoning) still get caught up in little flocks, in a way that the [game](#) they end up playing is driven less by what seems rational and more by what they think the others think they're going to do."

Each game used in the study is based on a very different way of thinking and should have evoked different varieties of reasoning by players, Frey said. But they did not. The same sophisticated flocking behavior bore out in all three games.

Flocking can be good or bad

Researchers looked at the behavior of hundreds of players, who came from student and online pools, repeated for many rounds of the games over time. They analyzed behavior over high and low payoffs, over multiple populations and with very experienced players, with the well-known "Beauty Contest" game and two they devised for the research, "Mod Game" and "Runway Game," Frey said.

Rules and methods of winning each game varied.

In Beauty Contest, players receive a reward for guessing the number 0-100 whose number is closest to two-thirds the value of the average of all numbers submitted by all players. In the Mod Game, players choose an integer between 1 and 24. Players earn points by choosing a number precisely one above another's number, except that 1 beats 24, such as in Paper-Rock-Scissors, in that every number can get beaten by another. And in the Runway Game, players practice the same one-upmanship of the Mod Game, but they can choose literally any number, -1, a million, pi, anything. These subtle differences lead to big differences in

theory, but they don't seem to matter to players, who get caught up in their group mates' flocking no matter what.

Frey explained that flocking, in life, can be good or bad. It can be good for schools of fish, flocking birds, or team cyclists in a race—where in each case group members gain a greater ability to obtain food, be safe or to win. But flocking can be undesirable in a stock market fall or a riot, for instance, where safety, survival or "winning" can be jeopardized.

"...These games show that sophisticated human reasoning processes may be just as likely to drive the complex, often pathological, social dynamics that we usually attribute to reactive, emotional, nondeliberative reasoning," the researchers conclude.

"In other words, human intelligence may as likely increase as decrease the complexity and unpredictability of social and economic outcomes."

More information: Seth Frey et al. Cognitive mechanisms for human flocking dynamics, *Journal of Computational Social Science* (2018). [DOI: 10.1007/s42001-018-0017-x](https://doi.org/10.1007/s42001-018-0017-x)

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