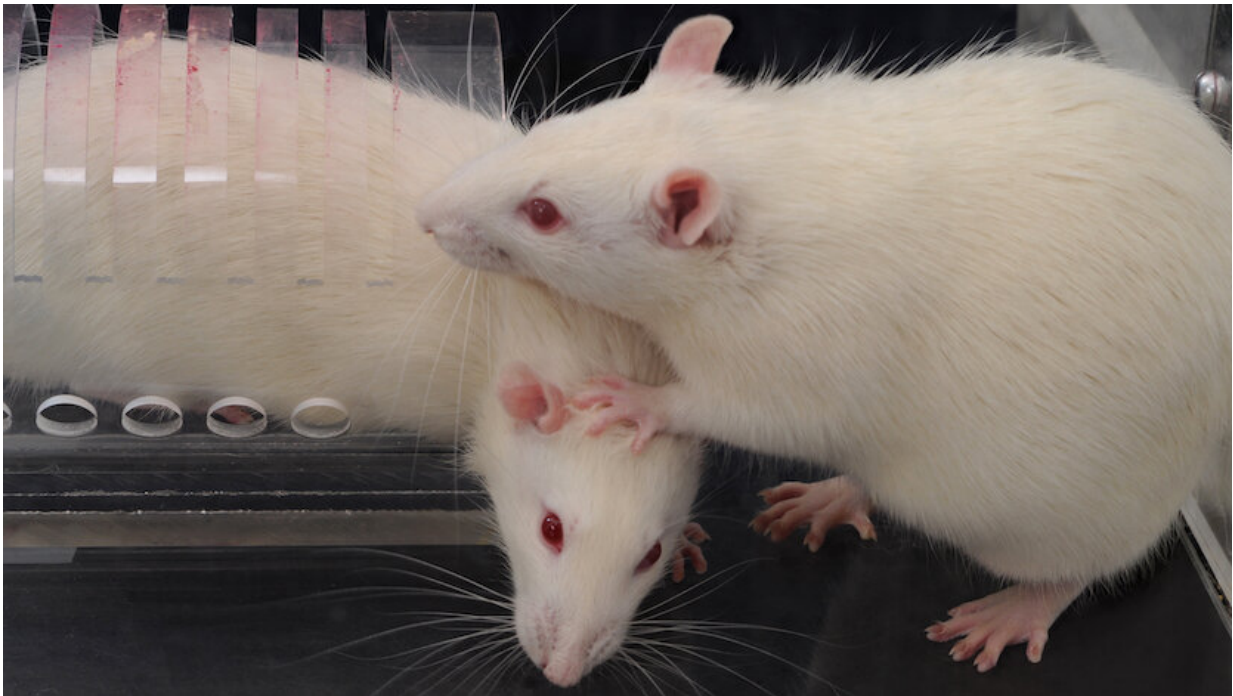


# Study shows 'Bystander Effect' not exclusive to humans

July 8 2020

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A rat is less likely to help a trapped companion if it is with other rats that aren't helping, according to new research from the University of Chicago that showed the social psychological theory of the "bystander effect" in humans is present in these long-tailed rodents. Credit: Mason Lab

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humans is present in these long-tailed rodents.

The study, titled "The Bystander Effect in Rats," also demonstrated that in the presence of other potential helper rats, rats are more, rather than less, likely to help. Whether helping is facilitated or suppressed depends on the circumstances rather than on personal temperament or morals, a finding with implications for human society. The research, published in the July 8 issue of *Science Advances*, builds off previous research on rat empathy.

In 2011, Peggy Mason, Ph.D., professor of neurobiology and senior author of the study, and her UChicago team of researchers found that rats consistently freed trapped companions, even saving a bit of chocolate for them, and this behavior was driven by a rat version of empathy. A subsequent study showed that rats treated with anti-anxiety medication are less likely to free a trapped peer because they do not feel its anxiety. In another study, researchers found that rats only freed trapped rat strains that they had previous social experience with.

The roots of the classic [bystander effect](#) date back to 1964, when Catherine "Kitty" Genovese was murdered in a crowded residential neighborhood in Queens, New York. An account published in the New York Times reported that 38 bystanders saw the murder but did not intervene. Though this story was later proven inaccurate, it inspired psychologists Bibb Latané and John Darley to investigate why so many people would fail to help.

The pair tested [human subjects](#) alone and in the presence of "confederate" bystanders—people who were part of the research team and were instructed not to help—as they confronted a variety of experimental scenarios with someone (an actor) in distress. Latané and Darley consistently observed that subjects were far less likely to help in the presence of non-helping confederates than they were when tested

alone. This phenomenon, referred to as the bystander effect, is now a pillar in psychology, included in every introductory textbook and class. The mechanism for the classic bystander effect is thought to be a diffusion of responsibility whereby people reason that they need not act because others in a group will.

First author John Havlik was a UChicago undergraduate in Mason's laboratory, when the topic of the bystander effect came up during a lab meeting.

"My students had been bugging me to do this experiment for years," said Mason. "But it wasn't until John came along and would not let the idea go that we took the plunge."



When multiple rats encounter a rat trapped in a restrainer, they help him by opening the restrainer door earlier and more consistently than does a single rat.

Credit: David Christopher, University of Chicago

Havlik, now a student at the Yale School of Medicine, spearheaded experiments to examine whether rats, which lack complex reasoning skills, would show a classical bystander effect.

The research team used their trapped rat paradigm in combination with rats that were made into "confederates" by administering an antianxiety drug that made them indifferent to another rat's distress, ensuring that they would not help. The team found that rats tested with confederates were less likely to help than those tested alone—a bystander effect in rats. Digging deeper, they saw that the presence of confederates blocked reinforcement for helping.

"It's worse to have a non-responsive audience than to be alone," Mason said. "The rats try helping, but it's just not a rewarding experience because the other rats don't appear to care. It's as though the rat was saying to himself, 'I helped yesterday and no one cared. Not doing that again.' "

Mason and her team then wanted to know how the presence of untreated rats affected the helping behavior. Counter to the prediction of the [bystander](#) effect, duos and trios of rats actually were more likely to help than solo [rats](#).

"At first, I thought the experiment had failed," Havlik said. "But after doing more research into human studies, we realized that behavior has actually been mirrored in people, too."

In research published last year, an analysis of surveillance videos revealed that groups of bystanders helped in more than 90% of violent

encounters.

"The reason we see these patterns of helpfulness goes deeper than the lessons we learned in kindergarten about being nice to each other," said study co-author Maura Jacobi, MD, a 2020 graduate of the University of Chicago Pritzker School of Medicine and co-first author of the study. "This is a phenomenon that's not exclusive to humans."

**More information:** J.L. Havlik et al., "The bystander effect in rats," *Science Advances* (2020). [advances.sciencemag.org/lookup...](https://advances.sciencemag.org/lookup...)  
[.1126/sciadv.abb4205](https://doi.org/10.1126/sciadv.abb4205)

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