Virtual escape test exposes hidden rule people use when identical exits create pressure and no sign points way

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Credit: Unsplash/CC0 Public Domain

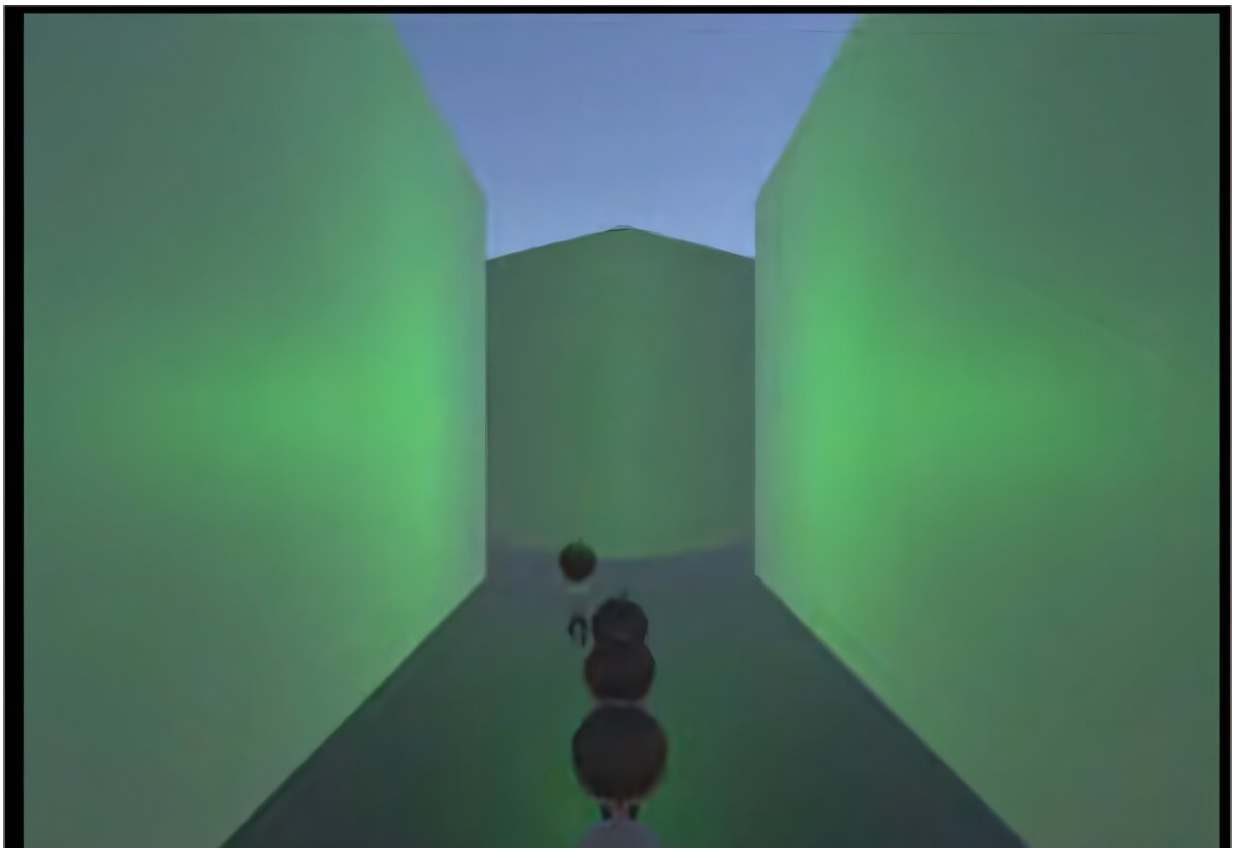
Ever wonder who you mimic in a line of people heading for an exit? In an emergency, do you trail the person right ahead, or do you watch what

everyone else does? It's a question with surprising implications for how we understand human behavior under pressure.

A new study, published in the *Journal of the Royal Society Interface*, involving a virtual evacuation test with 382 volunteers, reveals a surprising twist: People tend to latch onto what the crowd as a whole has done rather than just copying the very last mover.

For example, most participants picked the exit already chosen by the majority of their predecessors—even when the very last person had gone another way. This human pattern, where following the crowd's consensus was the rule of thumb rather than blindly following the tail-ender, even clashes with classic animal experiments.

Model fitting confirmed this: A simple "majority" rule fit the data far better than a "copy the last person" rule. For people, it seems the crowd's trend wins.



Screenshot of the virtual environment as seen by the participants. Credit: Anna Sigalou et al, Determining social mechanisms for sequential decision-making in a virtual pedestrian route choice experiment, *Journal of the Royal Society Interface* (2026). DOI: 10.1098/rsif.2025.1214

Inside the virtual escape experiment

To tease apart "copy last" versus "copy majority," researchers ran an online escape game. They recruited 400 adults (eventually analyzing 382 after exclusions) via Prolific. Participants watched short prerecorded video clips: a corridor with 11 animated people walking ahead and then choosing one of two identical, unmarked exits (flashing lights added urgency, but no obvious distinguishing cues). After each clip, the

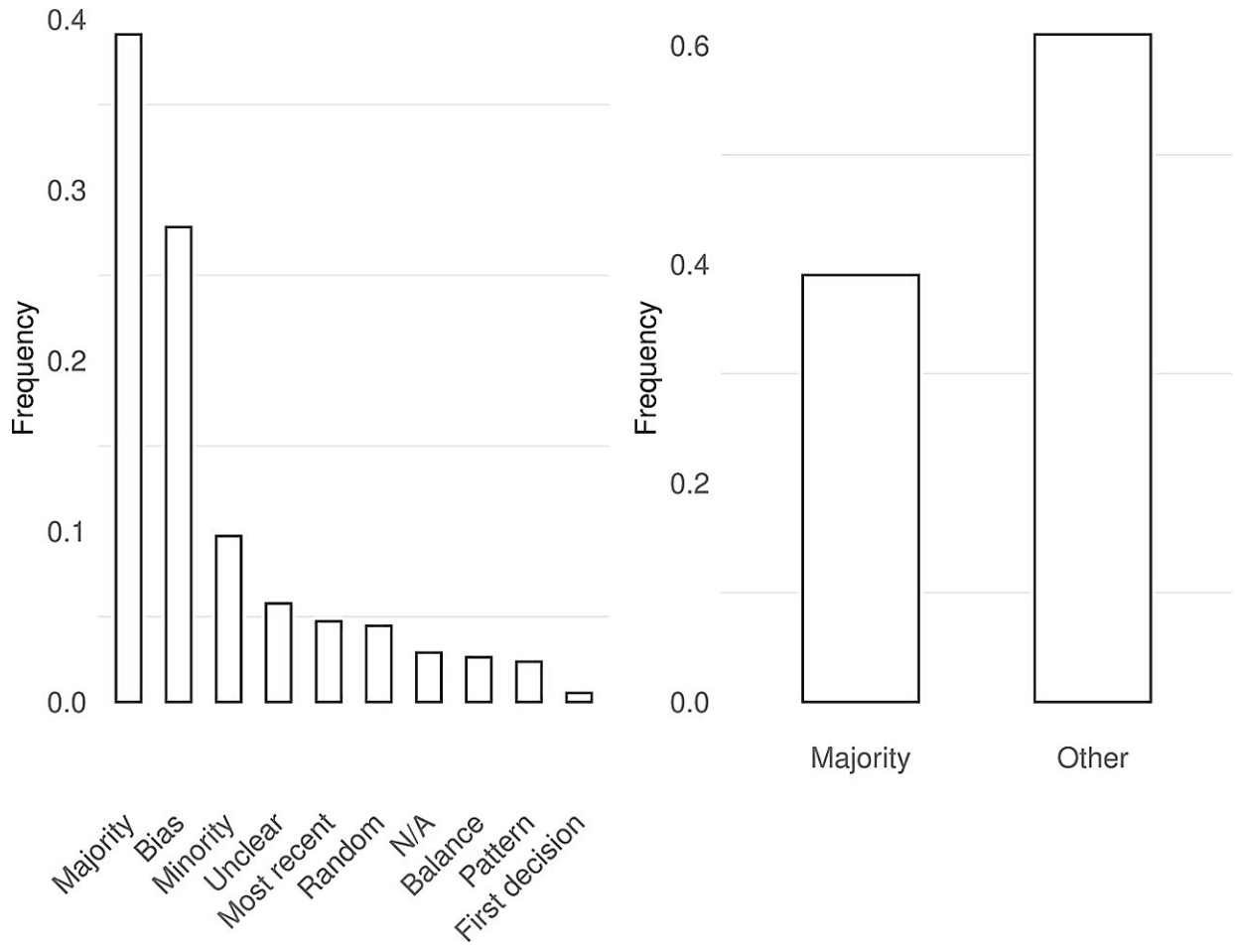
volunteer clicked to choose left or right.

Each person saw two such videos in sequence, with slightly different exit-choice patterns.

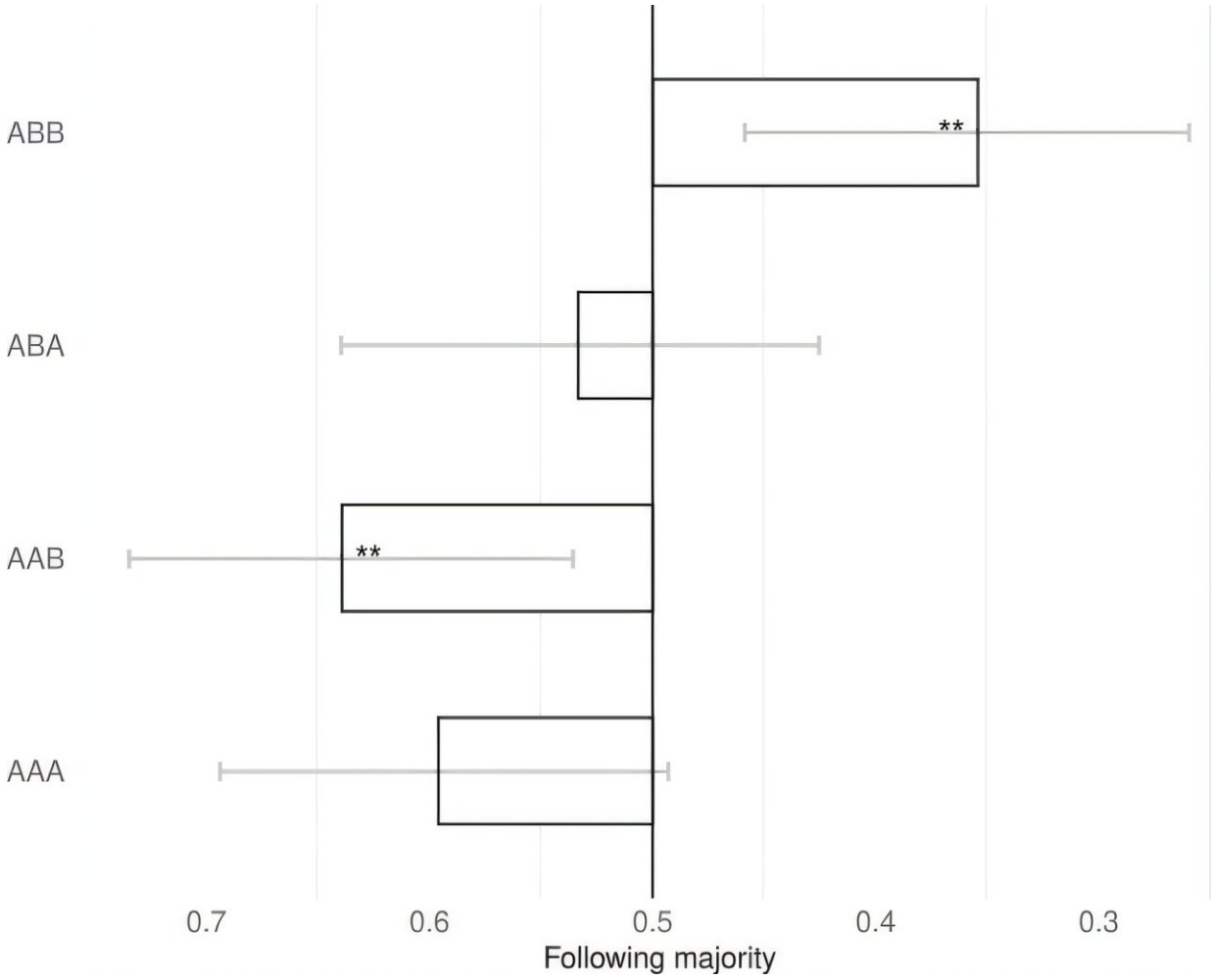
The key was in those patterns: The first nine "actors" always made the same choices (slightly favoring Exit A), but the last two actors varied to create different scenarios. For example, in "AAA," all 11 actors chose A, whereas in "AAB," the first 10 chose A and the 11th chose B. Another scenario, "ABB," had nine As followed by two Bs, and "ABA" alternated.

These variations let the team separate the effect of the overall majority from that of the final actor's choice. After each selection, participants answered a couple of questions (like why they chose as they did).

In each scenario group (roughly 90–100 people per pattern), the majority option strongly predicted the volunteer's choice. For instance, whenever most actors went left, most participants did too. A simple logistic analysis confirmed that scenario type mattered, but sex did not in a consistent way (a small gender effect appeared in one pattern, possibly because the final actor looked male, but overall it wasn't the headline).



Distribution of self-reported strategies in route choice based on a (a) manual classification and (b) simplified classification of two categories used by the analysts. Credit: Anna Sigalou et al, Determining social mechanisms for sequential decision-making in a virtual pedestrian route choice experiment, *Journal of the Royal Society Interface* (2026). DOI: 10.1098/rsif.2025.1214



A bar chart showing how often people chose exit A in different test scenarios, clearly indicating that most leaned towards the side with the overall majority. Credit: Anna Sigalou et al, Determining social mechanisms for sequential decision-making in a virtual pedestrian route choice experiment, *Journal of the Royal Society Interface* (2026). DOI: 10.1098/rsif.2025.1214

Saying it versus doing it

After each decision, participants typed why they chose that way. These free-text answers were categorized (e.g., "majority," "bias," "random," etc.). The results matched the choices. "Most people self-reported [they]

followed the majority of previous decisions," the authors note, while very few said they were simply copying the last person. In fact, "following the most recent decision was an extremely rare strategy," and some explicitly said they avoided it.

This wasn't just talk: Those who said "I go with the majority" really did. Of the 149 people who reported using majority-based reasoning, 116 (78%) picked the majoritarian exit in that round—far above chance. By contrast, the 233 people who reported other strategies (intuition, random, etc.) chose the majority only about 49% of the time.

The volunteers were often right about their own habits. As one researcher noted, people "broadly matched behavior" to self-report, meaning those who claimed majority-following indeed acted on it.

Building safer crowds: What it means

These findings change how we think about evacuations and crowd behavior. Many simulation models assume people use static cues (like crowd density or signage) or might blindly copy whoever's in front. This study suggests another rule: majority-following.

If every person checks which door most people have taken, that can amplify a choice and create herding. That could be good (everyone heading to the best exit) or bad (everyone clogging one door even if another is free). Planners could use this insight: For example, stagger exit routes or signage to balance flows, and train people to scan more widely rather than fixating on a single leader.

At the same time, caution is needed. The experiment was highly simplified. Volunteers watched identical-looking avatars in a virtual corridor—there were no real alarms, crowds or pushing. In the real world, noise, panic, poor visibility or unfamiliarity with a building could

change behavior.

The authors themselves note limitations: "a non-realistic environment … lacking elementary aspects such as visual or auditory stimuli or a sense of urgency." All actors looked alike and moved quietly, and participants were mostly young adults (median age 27). In an actual fire drill with children or older people, or with loud alarms blaring, the balance might shift.

Future work will add those real-world complexities—flashing alarms, crowd bottlenecks, diverse avatars—and more decision patterns. Meanwhile, this study gives crowd modelers an important clue: Humans seem to heed the group trend. As the authors put it, they found that "humans predominantly follow the majority of observed decisions rather than placing greater weight on the most recent ones."

So next time you leave a building, remember: it's not always the person at the end of the line who calls the shots—it's what most people ahead of you have done.

More information: Anna Sigalou et al, Determining social mechanisms for sequential decision-making in a virtual pedestrian route choice experiment, *Journal of the Royal Society Interface* (2026). DOI: 10.1098/rsif.2025.1214

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