

The role of passive superstition and illusion of control in explaining irrational gambling beliefs

What this research is about

The illusion of control suggests that people overestimate their ability to control the outcomes of chance-based events. People with gambling disorder often have high levels of illusion of control. The illusion of control has been used to explain why people like to make their choices when gambling, such as picking their own lottery numbers. However, passive superstition may also explain irrational gambling beliefs. Passive superstition involves beliefs that supernatural forces can cause outcomes. Passive superstition is distinct from the illusion of control as it lacks an active choice.

In an experiment carried out by Klusowski et al. (2021), participants estimated the chances of winning a \$1 bonus from one of three boxes. Since the \$1 bonus was randomly assigned to a box, participants should have given a probability estimate of around 33% for each box. However, about one-quarter of participants gave other estimates, showing irrational nonuniform probabilistic beliefs. This occurred regardless of whether they chose their own box or a box was chosen for them. These findings are not in line with the illusion of control, as the illusion of control suggests that people should give a higher probability estimate for their chosen box. This study compared the illusion of control, passive superstition, gambling engagement, and symptoms of problem gambling as drivers of irrational gambling beliefs related to nonuniform probabilistic beliefs.

What the researchers did

The researchers recruited 3,151 US-based participants through Prolific. After excluding participants for failing the carelessness check and comprehension check, the final sample included

What you need to know

Nonuniform probabilistic beliefs refer to beliefs that the likelihood of different outcomes are not uniformly distributed. This study compared the illusion of control, passive superstition, gambling engagement, and problem gambling symptoms as drivers of nonuniform probabilistic beliefs. A total of 3,064 adults based in the U.S. completed the experiment. The experiment involved participants estimating the chances of winning a \$1 bonus from one of three boxes. Participants were randomly assigned to give these estimates after choosing a box ("postchoice") or after a box was chosen for them ("post-no-choice"). A second control condition involved participants estimating the chances of winning before they chose a box or a box was chosen for them ("preselection"). The winning box was randomly determined. Thus, the correct response would be to provide a uniform probability for each box (33–34% chance of winning, adding up to 100% for the three boxes).

In each condition, around one-fifth of participants made estimates outside the 33–34% range, showing nonuniform probabilistic beliefs. Thus, participants' perceived level of control did not have an influence. Participants with greater problem gambling symptoms and those with higher passive superstition were more likely to have nonuniform probabilistic beliefs. These results suggest passive superstition is a significant driver of irrational gambling beliefs.

3,064 participants. About half (49%) were male. On average, participants were 43 years old.

The researchers replicated Klusowski et al.'s (2021) experiment. Participants were randomly assigned to estimate the chances of winning a \$1 bonus from

one of three boxes after choosing a box ("postchoice" condition) or after a box was chosen for them ("post-no-choice" control condition). A second control condition was used, where participants estimated the chances of winning before they chose a box or a box was chosen for them ("preselection"). The winning box was randomly determined. Thus, the correct response would be to provide a uniform probability for each box (33–34% chance of winning for each box, adding up to 100% across the three boxes).

Participants completed demographic questions. They were also asked if they paid money to gamble in the past 12 months. Those who gambled in the past year completed the Problem Gambling Severity Index (PGSI). People who scored 0 were grouped as "non-gambling." Those who scored between 1 and 4 were grouped as "at-risk gambling," and those who scored 5 and higher were grouped as "high-risk gambling." Participants also completed the Passive Superstition Scale. They had the option of providing feedback and were also told about their bonus outcome.

What the researchers found

About 45% of participants did not gamble, while 30% gambled recreationally. About 17% had at-risk gambling and 8% had high-risk gambling.

Among participants in the postchoice condition, 22% made estimates outside the 33–34% range, showing nonuniform probabilistic beliefs. In comparison, 22.2% of participants in the post-no-choice condition and 20.7% in the preselection condition showed such beliefs. This suggests that participants' perceived level of control did not have an influence.

Gambling status (whether participants had gambled in the past year) was not linked to nonuniform probabilistic beliefs. But those with greater problem gambling symptoms (i.e., high-risk gambling) were more likely to have nonuniform probabilistic beliefs.

Participants with higher passive superstition were also more likely to have nonuniform probabilistic beliefs. They were more likely to give a higher probability estimate for their chosen box. This effect was stronger in the postchoice condition than in the post-no-choice or preselection condition.

These findings suggest that passive superstition can predict irrational gambling beliefs such as nonuniform probabilistic beliefs.

How you can use this research

Professionals and intervention providers who aim to reduce problem gambling behaviours might want to focus more on passive superstition.

About the researchers

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