

# The lottery: You're (very likely) not going to win, so why play?

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Sixty years ago last week, New Hampshire became the first U.S. state to allow a government-run lottery following a nationwide ban of lotteries in 1895. Why did Americans grow to disfavor the lottery then? Moreover,

considering how unlikely it is to win, why do they play it now?

Leaf Van Boven, a University of Colorado Boulder professor of psychology, sheds light on people's motivation for playing the [lottery](#), supported by [research](#) he conducted with Eduardo Andrade of the University of California Berkeley on the relationship between [decision making](#) and counterfactual thoughts. Their article was published in 2010 in *Psychological Science*.

## The history of US lotteries

While the first modern lottery conducted by the government in a U.S. state was in New Hampshire in 1964, lotteries were commonplace until the middle of the 19th century. Historian Neal Millikan's research shows that at least 392 lotteries were held in colonial America. Legislators also authorized the use of lotteries to fund [public works](#) after the United States won independence.

The acceptance of lotteries began to change in the 1830s because of the efforts of evangelical reformers. While the evangelicals opposed lotteries for moral reasons, the general public began to dislike them at around the same time because of a number of scandals involving lotteries.

The Panic of 1837, a U.S. [financial crisis](#) that preceded a six-year [economic depression](#), undermined people's confidence in infrastructure funded by state borrowing and other methods of public financing, which would have made lotteries even more unpopular, according to Ann-Marie Szymanski's book *Pathways to Prohibition: Radicals, Moderates, and Social Movement Outcomes*.

By 1860, most states had banned lotteries. Similar to how Prohibition would lead to a massive black market for alcohol when it was introduced

in 1920, the ban on lotteries led to the operation of illegal ones. One major example was the Louisiana State Lottery, which bought into its own games using unsold tickets and bribed officials to win favors. Corruption of this sort led to the complete federal ban of lotteries in 1895.

The first government-run U.S. lottery to appear after this ban was in Puerto Rico in 1934, but New Hampshire was the first state to relegalize the lottery. Lotteries now operate in 45 states; the five states that still do not allow them are Alabama, Alaska, Hawaii, Nevada and Utah. Now, there also are multi-state lotteries like Powerball and Mega Millions, which are designed to create massive jackpots worth hundreds of millions of dollars; for example, the Mega Millions jackpot is close to \$1 billion this week.

Government lotteries are a significant source of income for states, and in 2021 state and [local governments](#) collected more than \$31 billion from lotteries. In [fiscal year](#) 2022–23, the Colorado Lottery saw sales of nearly \$890 million.

## **Why do people play the lottery?**

However, the odds of winning the lottery are very low. While different lotteries have different odds, the major multi-state lotteries are similarly unlikely to be won with a given ticket. The overall jackpot odds for a given Powerball drawing, for example, are one in 292,201,338.

According to the National Weather Service, the lifetime odds of being struck by lightning are about one in 15,300. That means players are significantly more likely to be struck by lightning at some point than to win the lottery, even if they buy multiple tickets.

"The odds are really small, and people are pretty bad at thinking about

small probability events," Van Boven says, "so they almost always overestimate the likelihood."

People will also treat small probabilities as if they were larger than they are, Van Boven explains: "If something has a 1% likelihood of happening, people will often treat that as though it is actually a 5% likelihood." This phenomenon is known as the behavioral response or decision weight. These factors combine to make people not only overestimate the odds of winning the lottery, but also overweight those low odds.

Some lotteries have secondary prizes, or prizes other than the jackpot, and players are more likely to win these. However, the chance is still low, and the payouts are much smaller. Van Boven notes that lotteries "are fascinating because it never makes good economic sense to play them. It's a bad deal."

There are still psychological motivations at play, though. Counterfactual scenarios are major examples. After making a choice, people often imagine what would have happened if they had done things differently. In the case of the lottery, people may imagine that they would have won if they had played and feel regret as a result.

"Sometimes, people will make decisions to minimize that anticipated regret," Van Boven explains. "They worry that they're going to miss out on something, so they'll decide to go ahead and play even though they realize it's maybe not a great idea."

## **A deeper look into the psychology**

"Nobody expects to win the lottery, but what you're buying is the enjoyment of thinking about what would happen if you won," Van Boven says. "It's more about the enjoyment that people experience when

they imagine things that are going to happen in the future, which is a really powerful emotion."

The inordinate strength of this sort of emotion has been demonstrated by studies showing that people imagine feeling more strongly about future events than they actually will. The positive emotions that people feel when imagining winning the lottery are the main reason that they play, Van Boven notes, but it is also worth considering what motivates people to continue playing even after they have lost several times. One contributing factor is that people tend to minimize their [personal responsibility](#) for negative outcomes by attributing it to something outside their control, like bad luck.

"Part of the implication of that," Van Boven explains, "is it makes it difficult to learn over time," since it stops people from taking responsibility and making the necessary changes to their behavior.

Another factor is that, while people usually overestimate how strongly they will feel about something that happens in the future, they underestimate their reactions to counterfactuals about something that did not happen. Van Boven says that "if you consider and then decide not to play a gamble, and then you find out that you would have won, you feel more distressed than you would have expected." This was evidenced in the research he conducted with Andrade.

"What we were looking at in that paper is how, when you choose not to play a gamble, you think you're going to opt out of making those comparisons, but you don't really," Van Boven explains. "So, you decide, 'I'm not going to play the gamble,' but then you find out that you would have won if you had played, and that makes you feel bad, even though you chose not to play for good reason."

While there is typically no way to know whether you would have won

the lottery if you chose not to play, counterfactual thoughts about the possibility of having won will tend to evoke stronger emotions than expected, according to Van Boven's research. This may make the choice not to gamble unpleasant for gamblers, though the effect does not apply to non-gamblers, Van Boven says, given that it only happens in "those instances where you consider doing something and then you decide not to."

Provided by University of Colorado at Boulder

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