research snapshot

summarize | mobilize

Scratch card games are designed to include more near-miss outcomes

What this research is about

Scratch cards are a popular form of gambling. They are sometimes referred to as paper versions of slot machines. Like slot machines, scratch cards reveal winnings instantly, allow for continual play, and include near-misses. A near-miss is an outcome that comes close to a win, but falls short. On a scratch card, a near-miss would involve uncovering two of the three required jackpot symbols to win a prize. Therefore, the gambler comes close to the jackpot win, but falls short.

Past research has found that slot machine near-misses have similar effects as winning, even though they are actually losses. Near-misses increase physiological arousal for some gamblers. This may lead to further play and increase time and money spent on gambling. Past research has also found that slot machine manufacturers have designed slot machine games to include more near-misses than would be expected by chance alone.

Given the many similarities between slot machines and scratch cards, the current study examined whether scratch card games might be designed to include more near-misses than would be expected by chance alone.

What the researchers did

The researchers analyzed scratch cards from two different "batches" of Cash for Life. The scratch cards were collected from players who purchased two instances of the game in Ontario, Canada. In sample A (Game No. 1167 in Ontario), there were 41 scratch cards. In sample B (Game No. 1171 in Ontario), there were 61 scratch cards.

What you need to know

It appears that scratch cards, like slot machines, are designed to include more near-misses than would be expected by chance. For example, this study found that, in Cash for Life cards, the jackpot symbol (LIFE) occurred more often than any other symbols in the game. Also, LIFE symbol pairs (near-misses) occurred more often compared to any other prize symbol pairs. This may be problematic as near-misses have the potential to affect gamblers' behaviours, resulting in more time and money spent on gambling.

Cash for Life is a popular scratch card game in Ontario. It costs $4.00 to play and has a top prize of $1,000 a week for life. Each game contains 6 to 12 symbols arranged in a grid-like matrix. All of the symbols are actual prizes that a gambler can win. The gambler must uncover three matching prize symbols within one game to win that prize. To win the top prize, the gambler must uncover three LIFE symbols within a single game. A near-miss in this type of scratch card game consists of uncovering two of the three required symbols needed to win the jackpot prize (e.g., two LIFE symbols) in one of the five game matrices.

The researchers compared the number of times each symbol occurred in a sample. Then, they compared the number of times symbol pairs occurred in a sample.

What the researchers found

There were no jackpot prize winners (three LIFE symbols within a single game matrix) in either sample. In sample A, which was based on 41 scratch cards,

there were 1,722 symbols. Each symbol should occur approximately 143.5 times to be equally represented. However, the LIFE symbol occurred a total of 257 times in this sample. The next most common prize symbol ($6.00) occurred 152 times. Thus, the LIFE symbol occurred more often than any other prize symbol in the game. Similarly, the LIFE symbol also occurred more often than any other prize symbols in sample B.

In sample A, LIFE symbol pairs occurred 100 times. The next most common occurring symbol pair was $6.00, which occurred 38 times. Thus, LIFE symbol pairs occurred more often than any other prize symbol pairs. Similarly, LIFE symbol pairs also occurred more often than any other prize symbol pairs in sample B.

The findings suggest that the symbol arrangements on Cash for Life are likely designed to include more near-misses than would be expected by chance alone. This may be problematic as near-misses can encourage gamblers to keep gambling and affect their gambling behaviours.

How you can use this research

This study could be used to support the development of responsible gambling practices in regards to scratch cards. Policy-makers should create rules and regulations for gaming operators that do not allow for the manipulation of near-misses within scratch cards or slot machines. Future research should examine the effects of near-misses in scratch cards on gambling behaviours.

About the researchers

Madison Stange and **Michael Dixon** are affiliated with the Department of Psychology and Gambling Research Lab at the University of Waterloo in Ontario, Canada. **Dan G. Brown** is affiliated with the David R. Cheriton School of Computer Science at the University of Waterlo. **Kevin Harrigan** is affiliated with the Gambling Research Lab at the University of Waterloo. For more information about this study, please contact Madison Stange at mstange@uwaterloo.ca.

Citation

Stange, M., Brown, D. G., Harrigan, K., & Dixon, M. (2017). Built-in bad luck: Evidence of near-miss outcomes by design in scratch cards. *Journal of Gambling Issues, 36,* 51-64. http://dx.doi.org/10.4309/jgi.2017.36.3

Keywords

Scratch cards, near-misses, structural characteristics

Gambling Research Exchange Ontario (GREO)

Gambling Research Exchange Ontario (GREO) has partnered with the Knowledge Mobilization Unit at York University to produce Research Snapshots. GREO is an independent knowledge translation and exchange organization that aims to eliminate harm from gambling. Our goal is to support evidence-informed decision making in responsible gambling policies, standards and practices. The work we do is intended for researchers, policy makers, gambling regulators and operators, and treatment and prevention service providers.

Learn more about GREO by visiting greo.ca or emailing info@greo.ca.