

The WAGER, Vol 6(29) - Playing the Lottery: Cognitive Misconceptions and Problem Gambling

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In a recently published study by Hardoon, Baboushkin, Derevensky, and Gupta (2001), the authors investigated the cognitive processes that influence the selection of lottery tickets. In particular, they examined the misconceptions people have that certain types of lottery tickets will be winners; in reality any given ticket has an equal chance of winning, regardless of the order or arrangement of the numbers. This study examined the association between these cognitive patterns and patterns of problem gambling.

The study sample consisted of sixty-three undergraduate volunteers from McGill University in Montreal. The investigators asked participants to complete the Gambling Activities Questionnaire (GAQ) to determine which gambling activities they participate in and the frequency of their gambling. Those who reported some gambling then filled out the South Oaks Gambling Screen (SOGS) to screen for the presence of problem gambling (Hardoon, Baboushkin, Derevensky, & Gupta, 2001).

The participants were asked to complete the "lottery task," a ten-minute test designed to determine an individual's preferences for selecting lottery tickets. Each student was presented with sixteen 6/49 lottery tickets (tickets containing six numbers from one to forty-nine), chosen so that four came from each of the following types: Pattern (e.g. 5, 10, 15, 20, 25, 30); Long Sequences, (e.g. 1, 2, 3, 4, 5, 6); Non-Equilibrated, (e.g. 3, 5, 9, 12, 15, 17); and Random, (e.g. 1, 13, 19, 34, 40, 47). The students were then asked to rank 12 of the tickets according to which they would buy to play in the lottery. They were asked to provide their reasons for each selection. After the twelve had been chosen, the students were asked what they would do to modify the last four tickets so that these would have been chosen earlier (Hardoon et al., 2001).

The reasons the participants gave for the choices they made were recorded and

subdivided into categories, termed heuristics, designed to group the participants' responses by cognitive process. For example, if a student chose a ticket because the numbers seemed to be spread out and without pattern, that choice would fall in the Random heuristic. If students picked the ticket because the numbers were the student's birthday, the selection would fall under the Significant Numbers heuristic. There were eight heuristics defined for the ranked section of the test and five for the changing section (Hardoon et al., 2001).

When ranking their top four choices, the participants overwhelmingly preferred tickets that fell into the "Random" group. Across the entire sample, at least 50.0% of the tickets chosen for each of the first four picks was random. None of the other categories comprised more than 21.7% of the selections for any of these picks. Similarly, 78.0% of the reasons given for choosing a lottery ticket and 66% of the explanations given for changing a ticket involved randomness. The second most common type of explanation related to the lottery ticket containing significant numbers (e.g., birthdays). This heuristic was cited 69.5% of the time when ranking tickets and 39.0% of the time when changing them (Hardoon et al., 2001). Table 1 summarizes the popularity of each type of ticket for the first four choices.

Table 1: Percentage of Selections for the Total Sample*

Selections	Random	Pattern	Non-Equilibrated	Long Sequence
Pick 1	53.3	21.7	16.7	8.3
Pick 2	50.0	20.0	16.7	13.3
Pick 3	51.7	15.0	13.3	20.0
Pick 4	55.0	21.7	10.0	13.3

*From Hardoon, Baboushkin, Derevensky, and Gupta (p. 757, 2001)

One of the main goals of this study "was to establish whether cognitive distortions or biases of pathological gamblers were significantly greater than those of gamblers with no problems and those with some problems" (Hardoon et al., 2001, pp. 759). The results show that the probable pathological gamblers in the study were more likely to have certain misconceptions and less likely to have others. Most notably, probable pathological gamblers (SOGS score > 5) were more likely than those at other levels of gambling involvement to provide explanations showing the illusion of control. They also were less likely to cite past experiences when ranking their top twelve choices. Interestingly, when giving reasons for changing a ticket, probable pathological gamblers were more likely to cite past

experiences. Regular lottery players (i.e., those who played once a week or more) also gave more reasons involving past experience when changing tickets, though they did not give significantly more explanations involving illusion of control while ranking (Hardoon et al., 2001).

The findings presented in this study illustrate a connection between problem gambling and cognitive misconceptions about gambling. The authors note that while any reason for choosing a specific lottery ticket is irrational-since all tickets have an equal chance of winning, regardless of patterns or randomness-individuals who regularly play the lottery and take part in other gambling activities were more likely to display some type of bias or error when selecting their tickets. In addition, the probable pathological gamblers in the study had the greatest amount of cognitive distortion (Hardoon et al., 2001). Nevertheless, it is important to note that the presence of such mistaken thinking might not be a sign of problem gambling. The non-problem gamblers and those who never played the lottery also revealed misguided explanations for their selections. It would seem that some level of cognitive distortion is present throughout the entire population of gamblers.

Several factors limit the external validity of this study. The sample size is relatively small and the self-selection process might have led to a disproportionately high percentage of probable pathological gamblers seeking to participate in this study. This circumstance might bias the findings. Additionally, the use of Canadian college students might limit the study's applicability in the United States and among other populations. Consequently, we cannot conclude from this study whether adolescents and the general adult population would be more likely to display cognitive distortion in their gambling behavior.

Hardoon et al. (2001) present interesting findings that raise more questions about the mental processes behind problem and pathological gambling. This is very important work that holds great promise for advancing our understanding, prevention and treatment of gambling-related disorders. Future research will need to address the issues of how much misperceptions about gambling contribute to gambling problems, and of whether correction of these misperceptions can aid in the treatment of problem and pathological gamblers.

References

Hardoon, K. K., Baboushkin, H. R., Derevensky, J. L., & Gupta, R. (2001). Underlying cognitions in the selection of lottery tickets. *Journal of Clinical*

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