



The effect of visual complexity when playing a slot-machine simulation: the role of computer experience, computer anxiety, and optimism

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Available online 10 April 2004

Abstract

The increasing computerization of slot machines, as well as the growth of Internet gambling, has been a recent cause for concern. To investigate whether visual complexity promoted gambling behavior, we staked participants with money and had them play a computer-simulated slot machine that, for different groups, had a different number of symbols that appeared on the screen as the “reels” spun. We also measured participants’ experience with computers, their level of anxiety when dealing with computers, and their optimism for winning while playing the simulation. Although participants could quit immediately, not play the simulation, and keep the money, none did so. Analysis of their behavior while playing the simulation indicated no significant differences as a function of number of symbols appearing on the simulation. Furthermore, although computer experience was inversely related to computer-related anxiety, these measures (as well as optimism of winning) were not significantly related to participants’ behavior while playing the simulation. The present results appear to negate the idea that educating people about computers and how computerized games of chance are programmed could potentially inoculate individuals from becoming problem gamblers. Rather, they seem to demonstrate the strong allure of games of chance.

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Keywords: Internet; Gambling; Visual complexity; Computer simulation

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1. Introduction

The pastime of gambling has evolved throughout history (Ladouceur, Sylvain, Boutin, & Doucet, 2002). From simple games of chance (e.g., throwing dice), to complicated games of skill (e.g., poker), gambling has changed both in its prevalence and in its availability to the gambler. In the US, for instance, the number of states that have legalized some form of gambling have grown from 2 to 48 in just the past 20 years (MacLin, Dixon, & Hayes, 1999). The increase in the opportunity to gamble has the potential to lead to increases in pathological gambling. In fact, recent evidence indicates the prevalence rate of problem gambling in the adult population ranges between 1% and 3% (Loba, Stewart, Klein, & Blackburn, 2002).

Not only has there been a growth of traditional legalized gambling (lotteries, casino games, etc.), there has also been escalation in gambling over the Internet. Griffiths (1999) speculated that the Internet casino industry could soon become a 10 billion dollar industry. Griffiths also warned that the accessibility of Internet gambling could have serious social impacts. Problems such as underage gambling, gambling while intoxicated, and workplace gambling become difficult to regulate over the Internet. These problems can, in turn, lead to problems such as increased debt, decreased work production, and an increase in the presence of gambling pathology. Furthermore, Ladd and Petry (2002) suggested that individuals who use Internet gambling tend to be more likely to be problem gamblers. They found that, of the people who chose to use Internet gambling, 74% scored 3 or higher on the SOGS compared to only 22% of individuals with no Internet gambling experience.

There is little experimental research on gambling behavior and even less on Internet gambling. In general, existing studies have focused on the internal characteristics of the gambler. Theories developed to explain pathological gambling have focused on things such as cognitive errors while gambling (Ladouceur & Walker, 1998) or arousal-seeking tendencies (Jacobs, 1986). Furthermore, researchers have typically designed their studies to detect differences between pathological and non-pathological gamblers, with the resulting data being used to address why pathological gambling occurs (e.g., Dixon, Marley, & Jacobs, 2003). Only a few studies have attempted to directly manipulate the games gamblers play (e.g., altering the sensory aspects of slot machines).

Loba et al. (2002) conducted one such study in Nova Scotia using commercially available slot and video-poker machines. They investigated how certain features of these machines (e.g., game speed, the presence of a credit counter, the presence of sounds, the ability of the participant to stop the reels by touching the screen) affected players' perceptions of enjoyment, excitement, and desire to play again. Loba et al. reported that the enjoyment ratings of non-pathological gamblers, obtained at the end of each gambling session, tended to be lower when the game was fast and had sound than when game was slow and silent. Participants also reported a decreased tendency to want to keep playing under these same conditions. Thus, the results suggest that the more complex the game, the less participants enjoyed the game and the less likely they were to play again. These results, however, were based on self-reports. In fact, Loba et al. did not report changes in gambling behavior. Thus, it is not known whether the presence or absence of some of these variables manifested in less time playing or amount of money gambled.

Ladouceur and Sévigny (2002), on the other hand, did investigate how the sequence of symbol presentation on a video lottery terminal influenced gambling behavior.

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