

# Op-Ed/Editorials: Toward a Public Health Approach to Improve Parameters for Safer Gambling

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**Allyson J. Peller, M.P.H.**

Research Associate

Division on Addictions, Cambridge Health Alliance

**Debi A. LaPlante, Ph.D.**

Instructor of Psychology

Division on Addictions, Cambridge Health Alliance

**Howard J. Shaffer, Ph.D., C.A.S.**

Director

Division on Addictions, Cambridge Health Alliance

During recent years, there has been considerable media attention devoted to the potential harms associated with emerging gambling technology. Some advocates claim that emerging gambling technology is hazardous to the public health (i.e., leads to disordered gambling) while other advocates claim that technological interventions can prevent or alleviate gambling-related problems (e.g., reduce users' spending by limiting the availability and denominations of bill acceptors) (Bulkeley, 1995; Federal Trade Commission, 2003; Nova Scotia Gaming Corporation, 2006; Wood, Griffiths, & Parke, 2007). Although these advocates have voiced strong opinions, these discussions have not utilized a public health approach to conduct a balanced assessment of factors that contribute to disordered gambling or strategies to control contributing factors.

Korn and Shaffer (1999, 2002) first proposed placing the study of gambling behavior within a public health framework to improve policy, prevention, and treatment practices. More specifically, public health practitioners and researchers can use the classic three-part public health model, that is the Epidemiologic Triangle of host, agent, and environment, to understand the full spectrum of factors that contribute to a range of public health phenomena (e.g., an epidemic or the subjective effects of gambling). The goal of public health

interventions often is to control at least one of the three factors to prevent or stop a challenge to the public's health (Centers for Disease Control and Prevention, 2007). Applied to the study of disordered gambling, the Epidemiologic Triangle can help researchers to examine a comprehensive range of factors related to host (i.e., player characteristics (e.g., psycho-physiologic characteristics, cognitive characteristics)), agent (i.e., new gambling technology (e.g., Internet gambling, audiovisual game features)), and environment (i.e., context of gambling behavior (e.g., factors within gambling environments, new gambling technology environments)).

There is evidence that utilizing this approach can have some success in improving public health. Zinberg previously applied the Epidemiologic Triangle to the study of drug use; his approach yielded an enduring framework for understanding drug effects (Zinberg, 1984; Zinberg & Shaffer, 1985). Using this framework, Zinberg and others have been able to provide a way of understanding disordered drug use as a result of a complex interaction among drug use, the user's psychological expectations of such use, and the setting within which the user has these experiences. According to this approach, comprehensive public health intervention strategies to control disordered drug use need to consider more dynamic and comprehensive ways to alter the factors relating to drug (i.e., agent), set (i.e., host), and setting (i.e., environment) rather than just focusing interventions to control the drug.

Using a public health approach to examine the field of gambling-related technology has the potential to yield similarly valuable suggestions about how to create parameters for safer gambling behavior. To fill knowledge gaps about gambling-related technology and help researchers to design innovative studies, we have completed a critical examination of study methodology and findings from the extant empirical literature (Peller, LaPlante, & Shaffer, under review). This work investigates empirical studies that examine game features associated with new gambling technology (i.e., agent) and player characteristics (i.e., host). For example, several studies have investigated how certain audiovisual game features (e.g., game speed, presence of sound, visual complexity (i.e., number of symbols that appear on the screen)) affect self-reported enjoyment and motivation to continue gambling (Christopherson & Weatherly, 2006; Ladouceur & Sevigny, 2005; Loba, Stewart, Klein, & Blackburn, 2001). Contrary to the opinion of some advocates, results of some studies show that complex game features (i.e., number of symbols appearing on screen, rate of speed or sound) did not lead participants

to engage in greater gambling persistence (Christopherson & Weatherly, 2006; Loba, Stewart, Klein, & Blackburn, 2001).

Overall, our systematic review of gambling and technology-related literature found disproportionately fewer studies addressing the environment component of the Epidemiologic Triangle than the agent and host components; those studies that do exist show promise for the development and implementation of safety features for new gambling technology. Unfortunately, these studies have been methodologically rudimentary and limited in scope (Peller, LaPlante, & Shaffer, under review). However, the history of safety feature manufacturing for other industries reminds us that it is possible for safety devices to become safer as they evolve and mature. For example, the effectiveness of automobile safety features has improved dramatically over time (Armes, 2005; Hasbrook, 1956). Empirical research investigating the causes of passenger injuries has been essential to improving the engineering of automobile safety features (Green & Woodrooffe, 2006; Motao, Cummings, Haitao, & Cook, 2007; Shladover & Tan, 2006; Woodruff & Gregory, 2005). Ultimately, the creation of parameters that promote safer gambling for new gambling technology will need to involve collaboration between researchers, industry, and policymakers.

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