A BEHAVIORAL AND BIOPSYCHOLOGICAL INVESTIGATION OF THE ROLE OF THE ILLUSION OF
CONTROL AND PERSEVERATIVE CHASING BETWEEN PROBLEM AND NON-PROBLEM GAMBLERS

By

Brett E. Bauchner

A dissertation submitted to the Graduate Faculty in Psychology (Biopsychology and Behavioral Neuroscience
subprogram) in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University
of New York.

2014
Abstract
Advisor: Dr. Michael Lewis, Ph.D.

The illusion of control is associated with problem gambling. The perception that one is in control of a random event, when in reality there is no control, can facilitate problem gambling behaviors. The degree or extent of control may activate physiological mechanism of increased excitation and reward that reinforce gambling. In the studies presented here, performance on simulated gambling tasks that provided varying levels of gambling participation were compared to physiological measures of behavioral activation in problem gambler and nongamblers. Participants watched video clips of three horseraces scenarios that permitted different degrees of participation and control over wagering. Concurrently saliva samples were collected throughout the experiment. Salivary cortisol levels, a glucocorticoid produced in response to hypothalamic-pituitary-adrenal (HPA) axis activation, were increased in problem gamblers in comparison to nongamblers when they were permitted unrestricted wagering. This study provides evidence that that gamblers produce higher levels of salivary cortisol than nongamblers, only when the illusion of control is present within the gambling session. There was no difference between problem gamblers and nongamblers in cortisol production with wins or losses. No correlation was found between participants’ ratings of excitability, desirability of control, and production of salivary cortisol and gambling status.

In addition, levels of risk-taking and perseverative chasing (chasing after one’s losses) were measured using the Balloon Analogue Risk Task using a population of gamblers and nongamblers. Gamblers were found to be both riskier and more likely to chase their losses than nongamblers. The research reported in this dissertation provides support for the hypothesis that the illusion of control and perseverative chasing are two
important factors that facilitate problem gambling behavior. Given these findings, treatment strategies for problem gambling may include methods for addressing these important determinants of the behavior.