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Samantha Marie Rundle
Western University, srundle@uwo.ca

Riley E. Hinson Ph.D.
Western University, Psychology

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Western

Attentional Bias Measured in a Modified Addiction Stroop Task for Problem Gamers

Samantha M. Rundle and Dr. Riley E. Hinson
Department of Psychology, University of Western Ontario



Western

Introduction

- Internet Gaming Disorder (IGD) is being considered as a possible new disorder for the Diagnostic Statistics Manual (DSM) due to the similarities the behaviour possesses with Problematic Gambling Disorder and the other Substance Use Disorders classified in the DSM-V
- 4.7% of males aged 14 to 18 are at-risk for developing IGD and 1.7% of this population are already considered dependent on video games
- The current study examined variables which may be related to the level of attentional bias exhibited by participants as measured in a modified Addiction Stroop task

Dependent Variable

Attentional Bias

- An individual's unconscious attention to specific stimuli

Independent Variables

Level of Involvement with Online Gaming (POGQ)

- Duration and severity of online gaming habits

Impulsivity

- Behaving without adequate thought

Inhibition/Activation Systems

- Four Subscales
 - BIS
 - Drive
 - Fun Seeking
 - Reward Responsiveness

Sensation Seeking

- Search for experiences which are novel and risky

Hypotheses

H1: Individuals with a greater level of involvement in Internet games will portray significantly longer reaction times to target words in comparison to matched control words reflecting a bias in attending to the irrelevant semantic content of target words while not attending to the relevant color of the word

H2: Individuals with higher levels of involvement in Internet games will score higher on the BIS, BIS/BAS, and SSS scales

Method

Participants and Procedure

- Sample: 124 UWO students
- Recruitment: SONA Psychology Research Participation Pool

Materials

Part 1

Stroop Task

- 20 target words and 20 matched control words
- Each word was displayed in four colours; red, blue, green, and yellow
- 160 word trials were randomized per each participant

Target Word	Matched Control Word
Enemy	Energy

Part 2

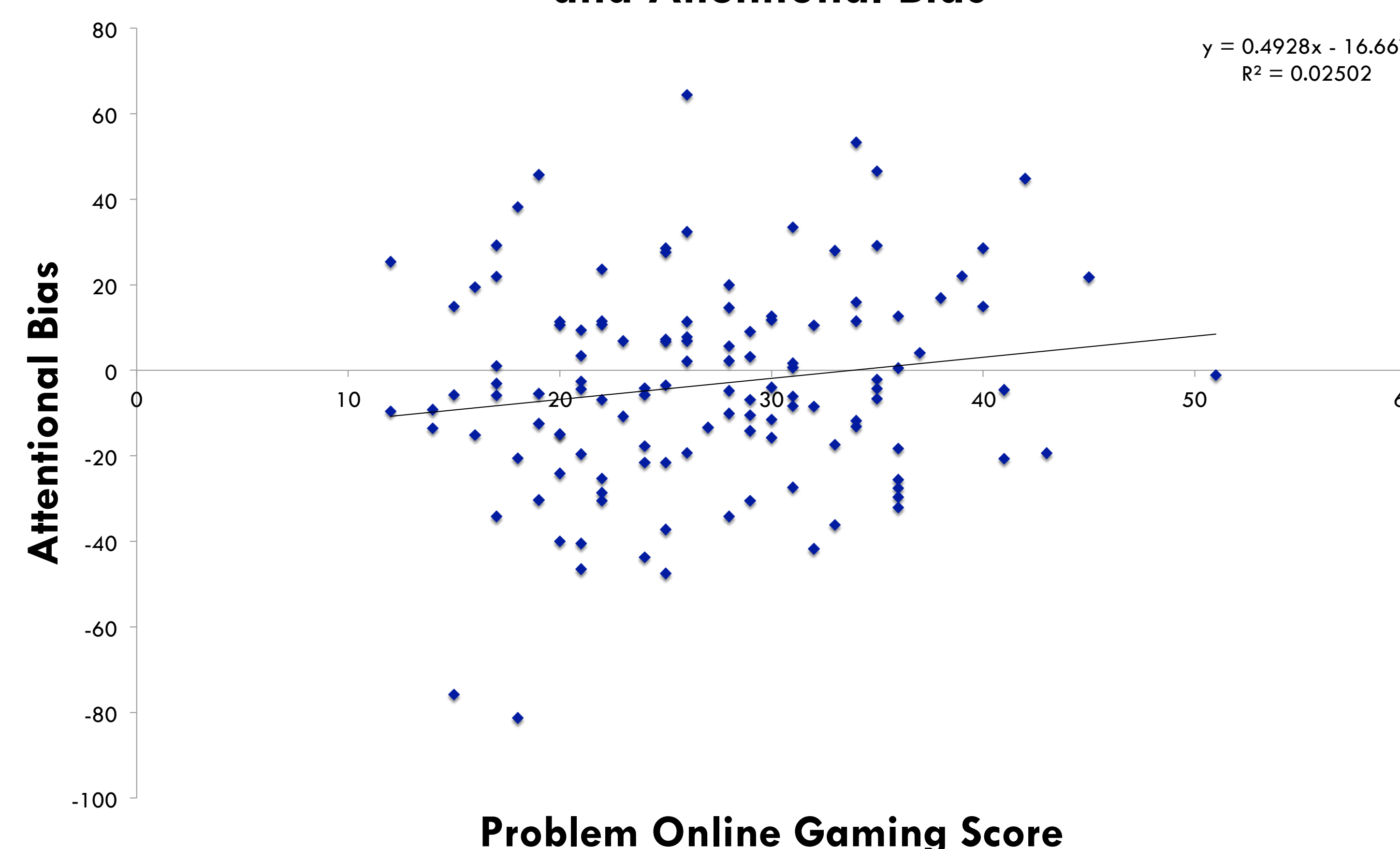
Questionnaires

Measure	Sample Item
Problem Online Gaming Questionnaire (POGQ)	How often do you play longer than originally planned? ¹
Barratt Impulsiveness Scale (BIS)	I plan tasks carefully ²
Behavioural Inhibition/Activation Systems (BIS/BAS)	I worry about making mistakes ²
Sensation Seeking Scale (SSS)	A. The worst sin is to be rude B. The worst sin is to be a bore ³

¹ Ranked on Likert scale ranging from 1 - 5
² Ranked on Likert scale ranging from 1 - 4
³ Choose the option that describes you best

Figure

Relationship between Problem Online Gaming Score and Attentional Bias



Results

- To measure attentional bias, reaction times to control words were subtracted from reaction time to target words
- A positive value would indicate that participants, on average, reacted slower while naming colors of target words in comparison to matched control words
- Attentional bias was significantly correlated with POGQ; $r = .158$, $n = 123$, $p < .05$ reflecting that the higher a participant's POGQ score, the longer it took them to identify the color of target words compared to control words
- POGQ scores were significantly correlated with the BIS and the Inhibition BIS/BAS factor; $r = .358$, $n = 115$, $p < .01$; $r = .291$, $n = 122$, $p < .01$ (respectively)

Discussion

- H1 supported:** Participants with higher levels of involvement in Internet games showed significantly longer reaction times to target words in comparison to matched control words
- This finding is consistent with past research on substance use and gambling disorders (Field & Cox, 2008)
- H2 partially supported:** Participants with higher levels of involvement in Internet gaming showed higher levels of BIS and the BIS/BAS; they did not show higher levels on the three other factors in BIS/BAS or SSS
- This finding is inconsistent with past research on substance use disorders (Khosravani, Alvani, & Seidisarouei, 2016)

Limitations:

- There is still no operational definition stating what constitutes a high-involvement Internet gamer
- Not all gaming is conducted "online" and therefore these results may not generalize to those who play offline Internet games

Future Research:

- Recruit participants who are receiving treatment for their excessive gaming habits (Addiction Services of Thames Valley)
- Future research should encompass both online and offline games and compare the addictive qualities between individuals who only play online, play both online and offline, and only play offline

References

- Field, M. & Cox, W. (2008). Attentional bias in addictive behaviors: A review of its development, causes, and consequences. *Drug And Alcohol Dependence*, 97(1-2), 1-20. <http://dx.doi.org/10.1016/j.drugalcdep.2008.03.030>
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