The Moderating Role of Video Game Play in the Relationship Between Stress and Externalising Behaviours in Adolescent Males

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ABSTRACT

The focus of this research was to investigate whether video game play reframed into the context of cumulative stress could play a moderating role on externalising behavioural outcomes. A sample of 14-15 year old adolescent boys (N = 197) were administered self-report measures relating to video game use, cumulative stress and externalising behaviours. Results showed that video gaming, as measured by time spent playing or genre played had no relationship with externalising behaviours in general. This was true when considered within the context of stress also. Although video game use was not related to conduct disorder, a positive relationship with hyperactivity was found. This may signify that game play is attractive to adolescents who are hyperactive, and that hyperactivity could affect the propensity to play more. Implications of these findings for future research are discussed.

Keywords: Adolescence, Conduct Difficulties, Externalising Behaviours, Hyperactivity, Stress, Video Games

INTRODUCTION

The debate over how video game playing can affect outcome behaviours has been vociferous and often full of polarizing rhetoric (Gentile, 2011, Olson, Kutner, & Warner, 2008). The traditional focus has surrounded violent video games; with research attempting to show that exposure to violent content in gaming can lead to a tangible increase in violent behaviours and conduct (Anderson et al., 2010, Bensley & van Eenwyck, 2001). Using the notion of Social Learning theory as its foundation (Bandura 1973), this research equates exposure to violent gaming content with exposure to other negative real life stressors (Anderson & Bushman 2002). The suggestion is that behaviours are learnt from exposure to the social environment, and...
that negative influences will directly impact subsequent learnt behaviours (Gentile 2011).

However more recent research has challenged this position (Ferguson 2011; Olson 2010, Sherry 2007). In particular, it has been suggested that the effects of video gaming on human behaviour should be considered in the context of life stress (Ferguson & Dyck 2012). Moving away from a focus on genre type, emphasis has been placed on the positive qualities within gaming (of all genres), which give users control, a space for competition and reward and an opportunity for teamwork and achievement (Przybylski, Ryan & Rigby 2009; Colwell 2007). Building on work that suggests that cumulative life stress lies at the foundation of aggressive externalising behaviours in adolescence, it has been suggested that game play could in fact generate positive behavioural outcomes by improving mood and reducing the effects of external stress (Peng, Lin, Pfeiffer & Winn, 2012).

This research will test the two dominant models proposed in video game research. In particular, we will investigate whether video gaming, when considered in the context of stress, could in fact have a moderating role in reducing adolescent externalising behavioural outcomes.

**Video Gaming and Aggressive Behaviours: A Traditional View**

The theoretical foundation of Social Learning Theory (SLT; Bandura 1973) has been used in video gaming research to build the association between violent gaming and violent behaviours (Funk et al., 2006). This is based on the notion that behaviours are learnt from exposure to the social environment, and that negative influences will directly impact subsequent learnt behaviours (Gentile, 2011). This concept has been used in relation to exposure to real life violence also. Associations have been shown to exist between higher rates of aggressive externalising behaviours and exposure to inter-parental (domestic) and community violence (Foster & Brooks-Gunn 2009, Moretti et al., 2006). Video game research has applied these ideas through the development of the General Aggression Model (GAM; Anderson & Bushman, 2002). This model assumes that exposure to video game violence can be directly equated to exposure to physical violence in a real world context.

GAM positions violent game exposure as a *facilitating factor* in the emergence of aggressive behaviours (Anderson et al., 2010). The model depicts a cyclical relationship between behavioural variables and the environment, with violent content evoking aggression through mediating routes of physiological arousal, negative affect (mood) and aggressive cognitions (Adachi & Willoughby, 2011). These routes interact with each other and it is the changes in these internal states that drive an increase in aggressive output (Anderson & Bushman 2002). The model also works on a short and long term basis. In the short term, violent exposure primes existing aggression knowledge structures or *scripts* that activate an association with aggressive conduct (by directly affecting arousal, affect and cognitions). In the longer term a cumulative exposure can lead to more permanent changes in the ability to react in an adaptive way towards violence or perceived antagonistic events, leading to a chronic negative change in behaviours (Anderson & Carnagey, 2009). Anderson et al., (2011) admit that by adolescence scripts are usually fully developed and the evidence for how much effect violence exposure can have on these other than short term priming is limited. However, they suggest the continued exposure to violent content will result in a protracted process of priming that will appear tantamount to a behavioural change, even if this change is not permanent.

In the largest meta-analysis of video game research to date, covering over 130 studies, Anderson et al., (2011) revealed that exposure to violent content was positively associated with aggressive behaviours ($r^+ = .19$). They also reported a correlation with increased arousal, aggressive cognitions and negative affect, suggesting that outcome aggression was operating through the mechanisms proposed in the GAM (Bushman et al., 2010).
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