

The Process Model of Gameplay to Understand Digital Gaming Outcomes



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INTRODUCTION

Digital games have been the focus of psychological research for a number of decades, yet there remains substantial concern and debate about the potentially harmful effects of violent digital games on children and young people (DeLisi, Vaughn, Gentile, Anderson & Shook, 2013). These concerns primarily relate to the amount of violent content in particular types of digital games, given that evidence has suggested exposure to violent content in games is related to increases in aggressive attitudes and behaviour (Anderson et al., 2010), and reduced sensitivity to real life violence (Bartholow, Bushman, & Sestir, 2006).

While some researchers claim that there is conclusive evidence of a link between violent game exposure and aggressive cognition, affect and behaviour (Anderson et al., 2010), others have criticised the theoretical and methodological basis of such claims (Adachi & Willoughby, 2011a; Elson & Ferguson, 2014; Ferguson, 2007). This suggests a need to reconsider the way in which outcomes of (violent) gaming are studied. This is the key focus of the current chapter. This includes a critical consideration of the socio-cognitive models which are typically used within this area, and questions the extent to which they can effectively represent the range of potential outcomes of playing digital games. Following this, other key factors are reviewed, and presented as a reason to reconsider the theoretical underpinnings of this research field. Here, a Process Model of Gameplay is presented as a solution to further understand these issues. Specifically, this model

aims to provide a framework through which to understand a variety of factors and the diversity of gaming experiences, and their combined role on gaming outcomes. In a practical sense, this can inform future psychological research to adopt a more holistic approach when measuring digital gaming outcomes, particularly in controlling for the extent of factors which are influential in this regard.

Background: Existing Theoretical Models

Existing theoretical models explaining the influence of violent game content on aggression outcomes include the General Aggression Model (GAM: Anderson & Bushman, 2002; Anderson & Huesmann, 2003), and the General Learning Model (GLM: Buckley & Anderson, 2006). These consolidate existing socio-cognitive models to explain the effects of media violence on aggression-related outcomes. The underlying principle of these models is that engaging with violent digital games interacts with an individual's internal state, trait and situational factors to influence appraisal and subsequent behaviour (DeWall & Anderson, 2011). The long-term effects of such processes are said to occur through the development of knowledge structures via learning processes which create a repeated pattern of responses, increasing the accessibility of violent "scripts" over time (Barlett & Anderson, 2013). Beyond this, the GLM more specifically explains how exposure to *any* media content can "teach" a behavioural response. This includes the role of prosocial media content

on teaching prosocial behaviours (Greitemeyer & Osswald, 2009), suggesting digital games can be effective “teachers” when exposing participants to specific types of content (Gentile & Gentile, 2008), and thus highlighting their use within educational contexts (Prensky, 2001). However, given that many games include violent content, this has caused substantial concern in particular academic communities, and prompted much research to investigate the way in which repeated exposure to game violence may be harmful through the way in which aggressive scripts are learnt and applied in the real world.

Although some studies have provided support for these models, other studies have not. Specifically, some researchers have criticised the restrictive nature of these models (e.g., Ferguson, 2009). One such criticism is that they imply “passive modelling” in which individuals exposed to violent media will be more likely to engage in real world violent behaviour, regardless of other key influential factors (e.g., family violence, trait aggression) (Ferguson, 2009). Relevant evidence here is the modelling which has been shown through objectification of females within many digital games (Burgess, Stermer & Burgess, 2007), and the consequences this has on real-world prejudices and beliefs towards women (Beck, Boys, Rose & Beck, 2012; Dill & Thrill, 2007). Similarly, particularly in relation to aggressive effects, existing models exclude the role of genetic predispositions and innate motivational systems towards violent behaviour which are believed to explain a substantial proportion of the variance in real-life violent behaviour (Eley, Lichtenstein, & Moffitt, 2003; Ferguson, Rueda, Cruz, Ferguson, Ritz, & Smith, 2008). Thus, greater specificity is needed within theory on how such factors function in this process (Ferguson & Dyck, 2012).

Additionally, existing models are not entirely clear in their capacity to test the influence of a range of other factors which have also been suggested to interact upon gaming outcomes (Krahé & Möller, 2004; Markey & Scherer, 2009). For example, emotional regulation has been found as a

mediator of the of violent gaming—aggression link (Unsworth, Devilly, & Ward, 2007). This suggests that gaming may serve a mood management function for some individuals (Unsworth et al., 2007). Indeed, mood management theory (Zillman, 1988) suggests that players may be motivated to play as a means of maximising exposure to positive stimuli, as a way of enhancing mood (Bowman & Tamborini, 2015). Conversely, this can result in games being successful in alleviating negative states (Ferguson & Rueda, 2010). This suggests a positive function of (violent) gameplay which existing theoretical models are unable to address. Understanding gaming processes are therefore key, highlighting the importance of understanding *changes* in experiences through gaming in order to fully examine the influence of gameplay processes on the outcomes of the activity. In response to this, the Process Model of Gameplay is presented (see Figure 1). This acknowledges the influence of the dynamic and varied nature of gaming processes upon the range of outcomes of the activity.

Future Research Directions: The Process Model

The Process Model can provide a basis through which to underpin research which aims to explore the various outcomes of gaming, particularly in how the factors identified here are influential in this regard. The merit of this model is that it highlights the range of factors and potential interactions which underpin the dynamic and varied nature of gaming experiences. This can therefore provide a basis from which to research a variety of different mechanisms which underpin gaming outcomes. The following sections identify key themes which are integrated within this process-based model to understanding digital gaming outcomes.

Type of Games and Platforms

In addition to individual factors (e.g., traits, emotional regulation) previously outlined, potential

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