

Chapter 10

Exposure to Video Games and Decision Making

Giuseppe Curcio

University of L'Aquila, Italy

Sara Peracchia

University of L'Aquila, Italy

ABSTRACT

In the last years, it is ever more frequent to read popular press stories about the effects of video and/or computer games on the brain and on the behavior. In some cases, we can read something claiming that video games “damage the brain,” while in others these activities can “boost brain power,” and such conflicting proclamation create confusion about the real or potential effects of this activity on human beings. Thus, it is very interesting to deeply understand the effect that exposure to video games (VGs) can have on cognitive processes, with particular attention to decision making. Only a few studies have been carried out on this issue: the main aim of this contribution is to clarify these aspects, critically reviewing the existing scientific literature. Particular attention has been dedicated to normal and pathological players, different types of VGs, and moral aspects of decision making vulnerable to VGs. It has been concluded that research in this area is still in its early days, and this short review aims at discussing several issues and challenges that should be addressed to forward this research field.

INTRODUCTION

In the last decade, the playing of video games (VGs) has become very popular among people. Video games represent a pervasive leisure activity beginning in middle childhood and continuing through adulthood (Gentile et al., 2004; Kubitzki, 2005). Population based surveys indicate that average gaming time ranges between 7 and 13 hs per week in both children and adolescents (Gentile and Anderson, 2003), and this value may underestimate the prevalence of use in some population segments. This high level of VGs consumption highlights the relevance for a clearer understanding of the potential influences of video game experience on human behaviour and cognition (Bioulac et al., 2008; Green and Bavelier, 2006).

DOI: 10.4018/978-1-5225-7601-3.ch010

Indeed, after several dramatic and murderous shoot-outs happened mainly in schools and colleges, game research focused mostly on the impact of aggressive shooter games on aggression-related cognitions, affects, and behaviors (Anderson and Bushman, 2001). The studies present in the literature showed different risks of excessive exposure to VGs: increase in aggression (Anderson et al., 2010), emergence of attention problem (Swing et al., 2010) and hyperactivity (Gupta et al., 1994), poor academic performance (Rideout et al., 2007), possible addiction (King et al., 2011), mood troubles as depression and anxiety (Mentzoni et al., 2011), reduction of empathy (Bartholomew et al., 2005), impairment of social behavior (Gentile et al., 2011), reduction of sleep time, quality and efficiency (Weaver et al., 2010; King et al., 2013).

However, exposure to VGs can not be regarded only as a negative experience. A great body of literature has revealed that action video game players, compared to non video game players, can develop broader cognitive benefits from extensive playing. These benefits include visual acuity (Green and Bavelier, 2007; Wu and Spance, 2013; Granic et al., 2014), attention flexibility (Green and Bavelier, 2003; Cain et al., 2012), stimulus-response mapping (Clark et al., 1987; Castel et al., 2005), encoding speed (Wilms et al., 2013), and executive functioning (Strobach et al., 2012). Extensive experience playing action VGs can even affect memory for the stimuli presented in a very short period (e.g., iconic memory and visual working memory), resulting in better accuracy (Boot et al., 2008; Blacker and Curby, 2013), higher precision (Sungur and Boduroglu, 2012) and more efficient strategy in retrieving information (Clark et al., 2011).

At the present, only a few studies have investigated the potential effects of video game exposure on decision making. The aim of the present chapter is to describe this relation, reviewing published studies and discussing possible implications for future research.

BACKGROUND

1. Exposure to Video Game and Decision Making

The study of the VGs effects on decision-making is a new research field in psychology, with a limited number of published studies; nevertheless, it can offer important clues for understanding risks and potentialities.

Past research has demonstrated that VGs experience can influence cognition and emotion (West and Bailey, 2013). More specifically, the prolonged exposition to VG is associated with decreased use of proactive cognitive control (Kronenberger et al., 2005; Mathews et al., 2005; Bailey et al., 2010), changes in feeling and expressing both positive and negative affects (Bartholow et al., 2006; Kirsh and Mounts, 2007; Bailey et al., 2011). Since it is well known that the efficacy of decision making is modulated by emotion, executive/cognitive control, and by presence of chemical and behavioural addiction (Weber and Johnson, 2009; Figner and Weber, 2011), one could expect that VGs experience could have a detrimental effect on the efficacy of this complex process.

It has been demonstrated that exposure to racing VGs can influence real-world decision making related to driving behavior (Fischer et al., 2009; Beullens et al., 2011). There is evidence, however, that certain types of VGs may have differential effects on cognitive control, a set of abilities that allow the individual to maintain goal-directed information processing (Basak et al., 2008; Bailey et al., 2010). For example, in a study focused on individual differences (Bailey et al., 2010) it has been reported that experience with First Person Shooter (FPS) video games was correlated with a reduction in proactive control (ac-

13 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/exposure-to-video-games-and-decision-making/214545

Related Content

Feature-Based Analysis of Social Networking and Collaboration in MOOC

Jyoti Chauhan and Anita Goel (2023). *Research Anthology on Applying Social Networking Strategies to Classrooms and Libraries* (pp. 177-196).

www.irma-international.org/chapter/feature-based-analysis-of-social-networking-and-collaboration-in-mooc/312920

#Childathlete: Examining the Ways in Which Children are Being Presented and Perceived on Instagram

Fallon R. Mitchell, Sarah J. Woodruff, Paula M. van Wyk and Sara Santarossa (2019). *International Journal of Social Media and Online Communities* (pp. 1-14).

www.irma-international.org/article/childathlete/262109

Evolving In Step or Poles Apart?: Online Audiences and Networking During Poland and France 2011-12 Election Campaign

Karolina Koc-Michalska and Darren G. Lilleker (2014). *International Journal of E-Politics* (pp. 41-60).

www.irma-international.org/article/evolving-in-step-or-poles-apart/111190

An Extensible Game Engine to Develop Animated Facial Avatars in 3D Virtual Environment

Anis Zarrad (2016). *International Journal of Virtual Communities and Social Networking* (pp. 12-27).

www.irma-international.org/article/an-extensible-game-engine-to-develop-animated-facial-avatars-in-3d-virtual-environment/160082

Politeness as a Social Computing Requirement

Brian Whitworth and Tong Liu (2013). *Examining the Concepts, Issues, and Implications of Internet Trolling* (pp. 88-104).

www.irma-international.org/chapter/politeness-social-computing-requirement/74110