

## Chapter 56

# The Social Facilitation of Performance, Emotions, and Motivation in a High Challenge Video Game: Playing People and Playing Game Characters

**Russell Blair Williams**

*Zayed University, Dubai, UAE*

### ABSTRACT

*The objective of this study is to analyze motivation, performance, state hostility, and targeted affect in a computer-based car racing game when social actors are opponents, and when game characters are opponents. This is a between-subjects, experimental, study of social facilitation with 97 Gulf Arab women. The social facilitation of performance and finishing time does not take place. There is no difference in state hostility based on social facilitation, but there is in emotions targeted at opponents. People are viewed more positively than NPCs after play. Intrinsic engagement and extrinsic motivation are both facilitated by the presence of human opponents. There is evidence that the experience of playing a game character and playing a person is substantially different even though the outcomes of performance and state hostility are not.*

### INTRODUCTION

Playing video games is a very social leisure activity (Cairns, Cox, Day, Martin & Perryman., 2013). The presence of other people, co-located or network-connected, may be the heart of the video game play experience (Bowman, et al., 2013). Yet, video games can also be a part of a very solitary pursuit where the player is alone and opponents are Non-Player Characters (NPCs), the product of programming within

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the game. The experience and outcome of play can be very different when playing alone and playing with others (e.g. Williams & Clippinger, 2002; Schmierbach, 2010; Shafer, 2012).

It has been theorized that the presence of other people can facilitate improved performance in a wide array of activities (Triplett, 1898; Zajonc, 1965) and that this social facilitation of performance also occurs in video game play (Bowman et al., 2013). The presence of an audience has been found to improve performance when the game being played does not offer a great deal of challenge (Bowman et al., 2013). Co-located human opponents are not the same as having a live audience, but the physical presence of a human opponent has been shown to facilitate differences in the game play experience and post-play affect (Williams & Clippinger, 2002; Schafer, 2013). This physical presence of a human as an opponent could also impact performance and by extension experience and post-play affect.

The key question in this study is whether there is social facilitation of performance, experience and affect with the play of a complex video game. This study will look at the social facilitation of intrinsic engagement, extrinsic motivation, performance and post-play affect. It is an exploration of the social facilitation of engagement, motivation and affect alongside performance in a video game. It examines targeted affect alongside the state hostility scale (SHS). The play experience, motivation and performance, are then be examined for their role in particular affective outcomes when playing a human and an NPC opponent. The affective impact of video games has been largely studied on the basis of single variables, increasing attention is being given to the role of experience (e.g. Abbassi et al., 2019; Johnson et al., 2018), and the role of performance in the process is also becoming more important to understand (e.g. Röhlcke et al., 2018; Bowman, Kowert, & Cohen, 2015; Bowman et al., 2013).

## **BACKGROUND**

### **Social Facilitation**

Social Facilitation Theory (SFT) comes out of Triplett's (1898) work which was the first experimental study of social psychology (Zajonc, 1965). Triplett (1898) concluded that the physical presence of another person in a competition would increase the amount of energy available to perform in a competition. Zajonc (1965) reported that social facilitation research looks at behavior in front of an audience of non-participants or in the presence of another person or persons engaged in the same activity. Either one can have an impact on performance in an activity. Bowman et al. (2013) looked at performance in front of an audience and found facilitation effects with simple games. VanTuinen and McNeel (1975) looked at competitive pairs and found facilitation effects, but did not find effects with non-competitive pairs and playing alone in non-competitive situations. The study of Social Facilitation has had mixed results on the basis of task, social context, respondents and theoretical perspective (Strauss, 2002).

The first applications of SFT to video game play (Brown, Hall, & Holtzer, 1997; Kimble & Rezabek, 1992) demonstrated that the presence of an audience decreased performance in what is considered a complex task. Based on a flight simulator, Worchel, Shebilske, Jordan, and Prislin (1997) concluded that increases in performance were a function of challenge and not the presence of an audience. Zajonc (1965) argued that competition and challenge could push performance in the same way as an audience and this could confound findings. Bowman et al. (2013) argued that either challenge or audience will push a player to their limit so that when the game is more complex it will consume all of the potential of drive and ability and reduce the effect of an audience. When a game is simple there is enough cognitive

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