Research Report

The winner takes it all: The effect of in-game success and need satisfaction on mood repair and enjoyment

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ARTICLE INFO

ABSTRACT

Recent research found that playing video games is able to serve mood management purposes as well as contribute to gratifications such as need satisfaction. Both aspects can foster the enjoyment as entertainment experience. The current study explores the question of how in-game success as a prerequisite for satisfying the need for competence and autonomy positively influences mood repair and game enjoyment. In a laboratory setting, participants were frustrated via a highly stressing math task and then played a video game (Mario Kart). Results show that in-game success drives mood repair as reflected in the experience of anger, happiness and activation. Moreover, fulfilling the intrinsic needs for competence and autonomy mediated the effects of in-game success and predicted enjoyment of the video game. Results are discussed in context of recent conceptualizations of media entertainment and the hierarchical order of emotional gratifications.

1. Introduction

"Whoever said, 'It's not whether you win or lose that counts,' probably lost" (Martina Navratilova).

Winning a tennis match, or any other kind of competitive game comes along with various benefits among which the experience of achievement and success might hold a prominent position (Sonnentag & Fritz, 2007). It is not surprising that engaging in video games is associated with a wide range of possible motives related to success, achievement or competition (Klimmt & Hartmann, 2006; Klimmt, Schmid, & Orthmann, 2009; Yee, 2006). Thus, in line with Martina Navratilova's implicit suggestion, one important determinant for the potential of video games to elicit positive outcomes is the success a player achieves within the game.

Accordingly, research found that successfully playing a video game was related to feelings of self-efficacy, which in turn predicted enjoyment of the video game (Trepte & Reinecke, 2011). This idea can be traced back to what Gordon Allport (1937, p. 141) called "functional autonomy": "[…] the relation between ability and interest is always positive, often markedly so. A person

likes to do what he can do well. Over and over again it has been demonstrated that the skill learned for some external reason, turns into an interest, and is self-propelling, even though the original reason for pursuing it has been lost." (p. 150). Thus, the positive outcomes for a player depends on aspects of the game play situation, such as success and need satisfaction.

According to Mood Management Theory (MMT; Zillmann, 1988a, 1988b), people's choice for a suitable media content under negative mood is driven by the hedonic motivation to improve their current mood. For the specific case of video games, Bowman and Tamborini (2012, 2013) as well as Rieger, Frischlich, Wulf, Bente, and Kneer (2014) could show that video games are able to repair negative mood as a function of their high task demands and vitalizing aspects. Being successful in a game should further add to this mood repair function of video games as it was found to lead to positive emotional outcomes (Kneer, Knapp, & Elson, 2014).

Besides serving mood management purposes, research has demonstrated that playing video games can satisfy the intrinsic needs for competence and autonomy (Tamborini, Bowman, Eden, Grizzard, & Organ, 2010; Tamborini et al., 2011). These findings are based upon the framework of Self-Determination Theory (SDT; Ryan & Deci, 2000) which posits that human beings strive to satisfy three basic intrinsic needs, namely the need for *competence*, *autonomy* and *relatedness*. Supporting this assumption, Tamborini et al. (2010, 2011) found enjoyment of interactive and

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non-interactive media stimuli to be positively associated with the satisfaction of those intrinsic needs. They conclude that enjoyment is not only tied to pleasure-seeking purposes but can additionally be achieved through "higher-order needs" (Tamborini et al., 2010, p. 759). Thus, in addition to the argumentation of MMT, positive outcomes can be achieved by the – sometimes nonhedonic – satisfaction of thwarted intrinsic needs. In a related vein, Trepte and Reinecke (2011) found a player's performance to be associated with the experience of self-efficacy which in turn predicted enjoyment. In another study by Reinecke et al. (2012), the authors used a false feedback task to induce either frustration or positive feelings in the participants and then let them choose a video game condition on their own. Participants whose needs had been thwarted (poor performance feedback in the task) chose the video game condition (higher task demands) which was able to satisfy their thwarted needs, in this case competence and autonomy. In turn, this need satisfaction resulted in an increased enjoyment. However, mood repair was only assumed but not directly tested in this study.

Our main research question therefore was to test whether aspects of the game play situation that are not directly associated with pleasure-seeking can contribute to mood repair. Just as Allport claimed that human beings pursue activities they perform well on (Allport, 1937), the aim of the present study was to expand this research and investigate how in-game success and need satisfaction shape positive *outcomes*, namely mood repair and enjoyment.

In the following sections, we will first describe MMT (Zillmann, 1988a, 1988b) and the specific mechanisms through which video games are able to contribute to mood repair. To explain the potential of video games for satisfying basic human needs through game play, we will then introduce SDT (Ryan & Deci, 2000) and its role in video games research. Following this, we will test our hypotheses regarding the interplay between in-game success, need satisfaction, mood repair and enjoyment in an experiment.

2. Mood repair and enjoyment through video games

The basic assumption of MMT (Zillmann, 1988a, 1988b; Zillmann & Bryant, 1985) is that humans have a hedonic motivation to terminate negative and to strive for more positive moods. Most research in this tradition was conducted with non-interactive media such as different television programs and movie genres (Bryant & Zillmann, 1984; Meadowcroft & Zillmann, 1987), or music (Knobloch & Zillmann, 2002; Schramm, 2005). However, a growing body of evidence for the effectiveness of video games to attenuate negative moods exists (Bowman & Tamborini, 2012; Chen & Raney, 2009; Ferguson & Rueda, 2010; Rieger, Frischlich, et al., 2014; Valadez & Ferguson, 2012). As such, it has been demonstrated that video games serve mood repair by providing high task demands which can direct attention away from unpleasant states and further by providing the player with energetic arousal which can help a player out of a deactivated state (Rieger, Frischlich, et al., 2014).

In line with this hedonic view on entertainment, the functional role of enjoyment was mainly explained by the satisfaction of hedonic needs, such as affect and arousal regulation (Zillmann & Bryant, 1985). However, Petersen and Bente (2001) could also demonstrate that in conditions in which performance in a racing game was important (high task relevance), the enjoyment of the game was higher. Broadening this notion, Tamborini et al. (2010, 2011) could demonstrate that the nonhedonic need satisfaction of competence and autonomy contributed to the experience of enjoyment independently from mood management mechanisms such as affect and arousal regulation or pleasure-seeking.

With regard to emotional gratifications through media stimuli, in her research on movies Bartsch (2012) found that some emotional aspects, such as fun or suspense, are directly experienced when being confronted with the media stimulus. However, media can also serve indirect functions which are associated with the satisfaction of basic psychological needs: "On the one hand, the experience of emotions per se can be gratifying. On the other hand, emotional media experiences can also contribute to the gratification of individuals' social and cognitive needs." (Bartsch, 2012, p. 291).

The view of direct and indirect emotional gratifications of movies also fits to the extension of MMT with regard to need satisfaction (Reinecke et al., 2012; Tamborini et al., 2011). For instance, Trepte and Reinecke (2011) found that self-efficacy experience completely mediated the positive relationship between a player's performance and enjoyment. Thus, experiencing enjoyment goes beyond the mere regulation of a negative affective state or the actual performance and is also driven by secondary gratifications (in this case: self-efficacy experiences). Mood repair and enjoyment should thus be investigated separately from each other.

One important determinant for need satisfaction is the in-game success a player achieves. Prior research assigned success by analyzing in-game events as "collecting items, defeating opponents, activating safe points, and reaching new levels" (Trepte & Reinecke, 2011, p. 556). In addition, being successful also strengthens the self (Diller, 1954) and confirms that the player was competent enough to complete a mission or win against his opponents. In-game success thus satisfies needs and thereby influences enjoyment (Trepte & Reinecke, 2011). This is in line with Klimmt's (2006) suggestion that the entertainment experience highly depends on the individually achieved success in a game.

The current study was designed to explore whether success and need satisfaction have an impact on mood repair and enjoyment. Based on the literature (Bowman & Tamborini, 2012; Rieger, Frischlich, et al., 2014), we predicted that playing video games in general fosters mood repair (H1). Mood repair was defined as positive change in the players' mood state, either by an increase in positive mood or by a decrease in negative mood.

In line with Reinecke et al.'s (2012) finding that participants actively choose video games that are able to address the causes for a negative mood. Kneer et al. (2014) found that in-game performance in a first person shooter game (number of kills) predicted positive post-game emotions, such as fun, pleasure and satisfaction. This suggests that success is able to increase positive mood in the players. We therefore assumed in-game success to be a positive predictor for mood repair (H2). Based on the idea that emotional gratifications can be distinguished based on direct and indirect functions (Bartsch, 2012), we questioned whether need satisfaction can additionally contribute to mood repair (RQ1).

With regard to enjoyment as overall entertainment experience after gameplay, several studies provided evidence that a player's performance and accordant self-efficacy (Trepte & Reinecke, 2011) as well need satisfaction of thwarted needs for competence and autonomy (Reinecke et al., 2012) predicted enjoyment after gameplay. Therefore, we expected in-game success and need satisfaction to predict enjoyment (H3).

3. Method

3.1. Participants

To test our hypotheses we needed $N \geqslant 15$ participants ∗ number of predictors (Field, 2009). A total of 46 subjects (67.4% female) participated in the study. The majority (78.3%) were students, the rest had already finished their studies. Age ranged from 19 to 35