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More Than Stories With Buttons: Narrative, Mechanics, and Context as Determinants of Player Experience in Digital Games

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Recent research has attempted to describe meaningful experiences with entertainment media that go beyond hedonic enjoyment. Most of this research focuses on noninteractive media, such as film and television. When applied to digital games, however, such research needs to account for not only the content of the medium, but also the unique dimensions of digital games that distinguish them from noninteractive media. Experiences with digital games are shaped by the game mechanics that define the users' interaction with game content, as well as by the opportunities for social interaction that many games offer. We argue that the complex interplay of these dimensions (narrative, mechanics, and context) facilitates or inhibits meaningful user experiences in ways that are unique to digital games.

There is a large and diverse body of research on entertainment experiences through media use in general, and a portion of that research explores entertainment experiences through digital games in particular. Traditionally, entertainment has been conceptualized in communication research as a hedonic experience, with conceptualizations and measurement of entertainment focusing primarily on enjoyment. Recent research efforts, however, have broadened that conceptual scope by investigating media entertainment experiences that go beyond enjoyment, such as a deeper appreciation of moving or thought-provoking media narratives (Oliver & Bartsch, 2011).

Arguably, the original question that sparked much academic interest in a more complex understanding of entertainment experiences beyond enjoyment was intellectual curiosity about why people commonly seek, and even treasure, the emotional experiences derived from the consumption of sad films. Oliver (1993) employed the term “sad film paradox” to describe the phenomenon of media users voluntarily seeking out media content that can elicit negative emotions. In the interest of a

better understanding of the processes behind this psychologically counterintuitive phenomenon, Oliver argued for an extension of mood management theory (Zillmann, 1988). While research based in mood management theory has been effective in explaining and predicting uses and gratifications of media content conducive to positive experiences, mood management theory seemingly has a difficult time explaining the popularity of so-called “tearjerkers” that can evoke rather aversive emotional states, such as sadness. Despite the negative emotions that they elicit, many people report these movies to be cherished as favorites.

To resolve this paradox, scholars have used the concept of “metaemotions” to describe a process by which individuals can assess and appraise their own emotional responses and consequently experience a second level of emotional response based on their appraisals (Bartsch, Vorderer, Mangold, & Viehoff, 2008; Oliver, 1993). In other words, emotions can be experienced both at a direct level and at a reflective level: While direct emotions are more immediate and automatic, the reflective “metaemotion” level involves a more cognitive component and comprises impressions and feelings about a mood or emotional state (Cupchik, 1995; Hofer & Wirth, 2012). The appreciation of a film or television program would therefore be determined not only by initial emotional responses, but also by the appraisal of the emotions that the content elicits (Bartsch et al., 2008). Accordingly, individuals who find gratification in feelings of sadness or melancholy should experience enjoyment from this type of entertainment, and should increasingly seek exposure to it (Axelson, 2011). Several studies have provided empirical support for this notion and found that, for example, tragedy-induced sadness causes viewers to reflect on the positive elements of their own lives (such as close relationships), which subsequently evokes positive emotions (Knobloch-Westerwick, Gong, Hagner, & Kerbeykian, 2012). Another mechanism that has been described in this context is the effect of mortality salience induced by portraying the death of a character, which increases appreciation among those viewers who have a disposition to search for meaning in life (Hofer, 2013).

In subsequent studies, scholars have extended the idea of metaemotions to other genres and media forms, demonstrating that there are important motivations and gratifications associated with entertainment media experiences that go beyond simple enjoyment. Oliver and Bartsch (2010) used the term “appreciation” to subsume these enriching gratifications of entertainment media users that can be characterized as nonhedonic as they go beyond mere “fun” enjoyment experiences, and researchers (e.g., Oliver & Raney, 2011; Wirth, Hofer, & Schramm, 2012) have tended to use the term “eudaimonic” increasingly often to describe meaningful, nonhedonic motivations and gratifications. Research efforts have attempted to identify distinct dimensions encompassed by eudaimonic gratifications and the psychological functions they fulfill. For example, Wirth et al. (2012) derived a holistic model from research on positive psychology and suggested several dimensions of nonhedonic media entertainment involved in eliciting eudaimonic well-being. Others focus specifically on how users process media narratives, for example through cognitive-emotional transportation into narrative worlds (Green, Brock, & Kaufman, 2004), or on media users'

intuitive moral responses to displayed media contents such as suffering, justice, or loyalty (Tamborini, 2011).

Games and eudaimonic gratifications

For just a little more than two decades, the lion's share of the theoretical and empirical work on eudaimonic gratifications has focused on cinematic and television entertainment. While the interactive medium of digital games may be easy to dismiss as a medium primarily associated with hedonic gratifications, technological and artistic advances in digital games have resulted in a range of game titles that are also conducive to eudaimonic experiences. In fact, the interactivity of this medium might make games more suitable for the fulfillment of specific needs than noninteractive screen media.

In this article, we propose that while much of the research on eudaimonic media experiences with other media can also be applied to digital games, novel theoretical and methodological approaches are needed to take into account the unique characteristics of digital games vis-à-vis noninteractive media. Theories and concepts that have been used to examine entertainment experiences with noninteractive media, such as television and film, can inform our understanding of entertainment experiences with digital games, but applying the same approaches used for noninteractive media whole-sale to interactive media impedes an understanding of how the unique attributes of digital games provide unique entertainment experiences.

To date, only a few studies have investigated nonhedonic gratifications from digital games. Vorderer and Ritterfeld (2009) proposed a two-factor model that considers enjoyment and appreciation as outcomes of the fulfillment of lower- and higher-order needs, respectively. In this model, hedonic gratifications are considered immediate responses of pleasure, whereas nonhedonic responses are those addressing the needs of autonomy, competence, and relatedness, which were derived from self-determination theory (SDT; Deci & Ryan, 2000; Przybylski, Rigby, & Ryan, 2010). This model of digital game experiences has also been tested in empirical studies. Tamborini, Bowman, Eden, Grizzard, and Organ (2010) conducted a factorial experiment manipulating whether participants used a naturally mapped or traditional game controller and whether they played with a human or a computer-controlled partner. They found that a natural controller mapping led to a higher satisfaction of competence and autonomy, and that playing with another human led to a higher satisfaction of relatedness. The satisfaction of these needs was, in turn, strongly related to enjoyment.

In a review of research on meaningful experiences with digital games, Oliver and Bartsch (2011) expressed skepticism about the extent to which the findings regarding need satisfaction informed an understanding of eudaimonic gratifications for digital game users. While concurring with the idea that the fulfillment of needs leads to enjoyment, Oliver and Bartsch were less confident that such need fulfillment constituted eudaimonic appreciation, defined as perceived meaningfulness and a reflection

on questions of life and the human condition. To reconcile, or at least clarify, this discrepancy, Oliver et al. (2013) recently examined the relationships between different game characteristics, the satisfaction of basic needs according to the SDT (with the inclusion of insight as an additional motive), and experiences of enjoyment and appreciation. In an online survey investigating participants' recollections of fun and meaningful experiences with digital games, they found that games with high-quality gameplay and sound were associated with greater satisfaction of autonomy and competence, which were in turn associated with enjoyment. The satisfaction of relatedness and insight that determined the appreciation of a game, however, largely depended on its story. Another study by Bowman, Rogers, Sherrick, Woolley, and Chung (2013) on the link between character attachment, enjoyment, and appreciation found that a greater sense of control was associated with more enjoyment, and that appreciation varied as a function of perspective taking. Overall, then, the results from these few very recent studies directly focused on digital games and eudaimonic gratifications suggest that games can, indeed, offer more than just hedonic entertainment and that different features of a game are related to different needs. Also, the findings from these studies indicate that, unlike with films and television, meaningful experiences in digital games are not only elicited by narrative and audiovisual presentation, but that the interactivity adds a whole new layer of user experiences affecting both hedonic and eudaimonic gratifications in ways that are unique to the digital game medium.

In the following sections, we first discuss the specific characteristics of digital games that must be taken into account when studying them as a source of entertainment. We then suggest that the meaningful experiences of players are shaped by an interplay of game narrative, mechanics, and context dimensions. Based on the conceptualization of digital game dimensions relevant to player experiences as suggested by the Integrated Model of Player Experience (IMP; Elson, Breuer, & Quandt, 2014), we propose a research framework that can serve to explain the relationship between player variables, game characteristics, and different experiential outcomes, including eudaimonia or meaningfulness. A program of research addressing how these unique characteristics of interactive digital games may contribute to hedonic and nonhedonic experiences can serve to guide future research informing an understanding of the psychological processes behind thought-provoking or moving experiences with digital games.

Digital games: Multiple layers and multiple players

In line with Oliver and colleagues (2013) and Bowman, Rogers, et al. (2013), we argue that a number of dimensions of a game's design, as well as of the situation in which a game is played, all contribute to the user experience – both independently and in concert. In order to explain how hedonic and eudaimonic gratifications are obtained from digital games, it is important to identify and properly characterize these individual features, how they relate to each other and to player experiences. First of all,

digital games are both highly interactive and social. This means that, in addition to the story or narrative that has been the focus of research on entertainment experiences with noninteractive media, a model of entertainment experiences with digital games must also account for the effects of the game mechanics and the user's interaction with computer-controlled entities and other human players.

The IMP

The IMP (Elson et al., 2014) is a research framework that identifies three distinct main elements of digital games that comprise the playing experience: context, player, and medium. The model also describes three consecutive gaming phases. The pregame phase describes the decision to play and the selection of games, and includes variables such as the players' cultural background and personality traits, but also affective states and short-term motivations, as well as the availability of games. The second phase is the actual game phase. Factors that shape the game phase are the presence of coplayers, game content, and experiential processes while playing, such as direct emotional responses, arousal, or flow. The postgame phase follows the use phase and is the start of a feedback loop through which a singular instance or repeated playing affects players and their social environment, ultimately leading to and shaping the next pregame phase (see Figure 1). Events in the postgame phase include, for example, communication about the game with others or the formation and alteration of game and genre preferences.

To the current discussion of enjoyment and appreciation as forms of gratification for digital game users, the most relevant phase is the game phase. The selection of games in the pregame phase is strongly determined by certain personality variables and temporary motivations, in line with Oliver's (1993) explanation of the role of film viewer characteristics in their entertainment experiences (see Kallio, Mäyrä, & Kaipainen, 2011, for an overview of gamer mentalities and playing styles), but also depends on the users' previous experiences with the medium. It is also possible that eudaimonic gratifications, particularly compared to hedonic gratifications, occur with a considerable delay postplay as they require elaborate reflection (Tamborini, 2011). However, acquiring gratifications from digital games primarily depend on the player's experience in the game phase. Aside from player characteristics, there are three categories of variables that shape the playing phase: game narrative, game mechanics, and playing context.

Game narrative

Game content can be conceptualized as made up of two principal components. First, there is the narrative. Despite the interactivity of the storyline in games, its role and function are quite similar to those of narratives in movies or literature. The narrative comprises all aspects of the game's story and setting, such as plot, characters and their attributes, events, and dialogues (Bizzocchi & Tanenbaum, 2012). In essence, it is the dramaturgy of any game that tells a story. As in other media, the narrative can deliver both hedonic and eudaimonic gratifications.

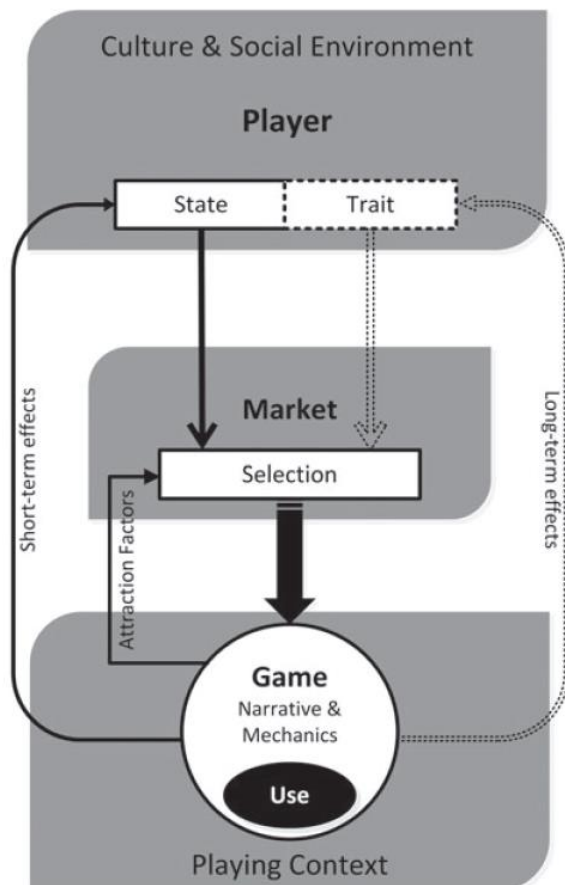


Figure 1 The integrated model of player experience (IMP) by Elson et al. (2014).

Game mechanics

In contrast to noninteractive media, it is not only the narrative, but also the mechanics that define a game. Mechanics comprise all game “rules” and define the options for interaction in and with a game. The use of dice as a vehicle to determine outcomes of player actions and decisions in game design, for example, has been common for thousands of years. Similar mechanics of probabilistic and random chance are used in digital games, as are mechanics more unique to digital games such as the use of hit points to represent a character's health (see Björk & Holopainen, 2004, for a summary of typical mechanics in game design). Mechanics also include some technical characteristics of digital games, such as how feedback is delivered through visual, auditory, and haptic cues in response to user input. While mechanics alone do not necessarily

offer eudaimonic gratifications, they are the sine qua non for a genuine gaming experience. Some digital games feature almost no narrative, focusing only on enjoyable mechanics. While other games may focus more on telling a moving or elevating story, even narrative-heavy games require at least a minimal amount of interaction to be considered a game. By definition, playing a game is always something that one can “succeed at.” Although success or winning does not necessarily involve a positive narrative outcome, it does require that the mechanics are used in the way intended by the developer in order to finish the game.

Playing context

Finally, digital game play is always embedded into a social context that influences experiential outcomes. This context includes not only the device a game is played on, the controls being used, and the location or setting in which a game is played, but also the possible presence of other players and the interaction with them. Playing a digital game together with 50 colocated people over a local area network (LAN) at a scheduled event is certainly different from playing an online game while talking to friends over Skype, or playing a game sitting quietly alone at home. Today, many games offer some sort of multiplayer function and the majority of players use them frequently (Entertainment Software Association, 2013; Quandt, Breuer, Festl, & Scharkow, 2013). Although this social context shapes the player experience, it has largely been neglected in research on digital games (de Kort & Ijsselstein, 2008). While often subtle, the social context of a game in particular can have an impact on both hedonic and nonhedonic gratifications.

Unique contributions of the IMP for understanding digital game experiences

While the IMP's focus on a combination of dimensions that are unique to digital games is useful to an understanding of digital game experiences, other theoretical perspectives can certainly also inform research on experiences in digital games. Seminal theories exploring media use, choice, and effects, such as the mood management and uses and gratifications approaches, have been successfully employed to understand the antecedents and outcomes of playing digital games (e.g., Bowman & Tamborini, 2012; Sherry, Lucas, Greenberg, & Lachlan, 2006). These conceptual frameworks have also been used to derive and explain the idea of nonhedonic or eudaimonic experiences for other media; given that narratives are one component of digital game experiences, these theoretical approaches can be applied in a similar manner to digital games. However, while those theories are mainly user-centric and focused on player states, the IMP is more media-centric and focused on how particular game characteristics alter moods or elicit gratifications, thereby guiding empirically testable hypotheses about these relationships. Thus, the IMP should be seen not as arrival to approaches such as mood management or uses and gratifications, but as complementary. In addition, the IMP focuses more on the actual use phase, whereas uses and gratifications

and mood management are mostly situated in the pregame and postgame phases. At its core, the IMP attempts to open the “black box” of the unique elements of the digital game medium and the player’s interaction with it during the playing phase in order to connect these experiences with the motivations and needs salient in the pregame phase and the outcomes and delayed effects constituting the postgame phase.

What the IMP adds to the contributions of other models of media use is a perspective that addresses the detailed user-media interactions specific to digital games. The IMP provides a general model describing a feedback loop of uses, experiences, and effects in specific contexts (see Figure 1) with a focus on the relationships between game characteristics and experiential variables in the actual playing phase. This part of the model can be used as a framework to study characteristics specific to digital games and their contribution to different experiences, including both hedonic and eudaimonic gratifications. The following sections will provide some suggestions on how the IMP can be applied to guide research to better understand dimensions of entertainment experience that are unique to the dynamics of the digital games medium, with some attention given to both hedonic and eudaimonic digital game experiences, but a particular focus on the latter. Several specific variables and concepts from previous research are considered as examples that can be applied within the framework of the IMP; the list of these concepts and variables is not exhaustive, but merely illustrative of the scope and utility of the IMP in guiding games-related research.

Enjoyment of digital games

The role of narrative

Naturally, as with noninteractive screen media, enjoyment is influenced by characteristics more closely related to the story. Although not all games require an advanced narrative in order to be enjoyable, many players enjoy games at least in part because of their stories (Schneider, Lang, Shin, & Bradley, 2004). The features that make stories in games enjoyable are similar to those that comprise enjoyable narratives in other media. One specific conceptual example is suspense (Klimmt, Rizzo, Vorderer, Koch, & Fischer, 2009). However, even more so than for noninteractive media, social interactions and relationships between the players and their avatars are particularly important. For example, several studies indicate that enjoyment of digital games is predicted by identification with avatars and user-avatar similarity (Bowman, Rogers, et al., 2013; Hefner, Klimmt, & Vorderer, 2007; Trepte & Reinecke, 2010), as well as a positive moral evaluation of the primary character’s behavior (Raney, 2011). However, players can also enjoy antihero narratives, albeit for different reasons (Shafer & Raney, 2012).

The role of mechanics

While many media include narratives, mechanics are a defining feature of digital games. They are also what distinguishes them from noninteractive media. Depending on the genre, a narrative may be a central element of the gaming experience, but the mechanics determine whether the act of playing per se is fun or not. It is therefore

entirely possible that a game featuring an enjoyable narrative is not able to offer any sort of gratifications, simply because the mechanics have been so badly implemented that the player will find the experience to be frustrating and stops playing. Although a compelling narrative can certainly compensate for subpar mechanics (and vice versa), the mechanics of a digital game must meet a minimum quality threshold in order for a game to be playable and enjoyable. A game can function and provide gratifications without a narrative, but it cannot function as a game without mechanics. As with research on film and television, variables facilitating hedonic game enjoyment have been investigated a great deal more than nonhedonic experiences. One specific game mechanics variable that affects the playing experience is difficulty. Examples of elements defining difficulty are intellectual challenges (such as puzzles), the number and skill of opponents, or demands on reaction time and hand-eye coordination. Theories that use the concept of flow (Csikszentmihalyi, 1991) to predict game enjoyment heavily depend on difficulty, as flow describes the optimal balance between the demands of a game and player skills (Sherry, 2004). In fact, there is abundant evidence that a satisfactory performance – without the game being too easy – is an important predictor of game enjoyment (e.g., Trepte & Reinecke, 2011; van den Hoogen, Poels, IJsselsteijn, & de Kort, 2012). There are also numerous other mechanics that influence game enjoyment, such as intuitive controls, esthetic and technical customization options (Schmierbach, Limperos, & Woolley, 2012), or the responsiveness of input devices (Klimmt, Hartmann, & Frey, 2007).

The role of context

While traditionally, experimental studies on digital game experiences have focused on an isolated playing experience with computer-controlled characters, there have been some recent efforts to examine the role of other players in the game experience. One consistent finding from this line of research is that the presence of others generally increases positive affect and enjoyment (Gajadhar, de Kort, & IJsselsteijn, 2008; Weibel, Wissmath, Habegger, Steiner, & Groner, 2008), particularly when playing with friends rather than strangers (Ravaja et al., 2006). Playing with others also leads to increases in physiological arousal (Ravaja et al., 2006). Other studies have found evidence for strong physiological synchronicity between players (Chanel, Kivikangas, & Ravaja, 2012; Ekman et al., 2012) and a recent study by Bowman, Weber, Tamborini, and Sherry (2013) observed that in-game performance (and consequently, feelings of competence) improved through the sheer presence of others. As these findings illustrate, there are many ways that game enjoyment can be shaped by social variables.

Eudaimonic appreciation of digital games

There is abundant research demonstrating influences on hedonic experiences from game narrative, mechanics, and context as discussed above, yet the paucity of research on predictors of more meaningful game experiences leaves some questions as to how game narrative, mechanics, and context can lead to eudaimonic gratifications of



Figure 2 Dimensions of digital games and sample corresponding variables that can facilitate or inhibit meaningful player experiences.

digital games (Figure 2). Given that there is little research on eudaimonic responses to games to date, there is much room for future research to explore how the unique dimensions of digital games may engender similarly unique processes by which games elicit meaningful experiences compared to noninteractive media. Using some anecdotal evidence from specific games, we provide examples that indicate how the IMP can guide testable hypotheses, research questions, and designs employing concepts and variables from previous media scholarship to produce new research about eudaimonic experiences unique to digital games.

The role of narrative

The role of narrative in games as a contributor to eudaimonic gratification is fairly straightforward. Most of the theories and empirical work on the appreciation of cinematic and television entertainment can, in principle, also be applied to narratives in digital games. It is possible, though, that these types of gratifications could be elicited quite easily because the narrative is also shaped and enhanced by players' interaction with the game through the use of mechanics, making it even more likely that the users encounter thought-provoking and moving story elements customized to their own personal lives, personalities, and preferences. While digital games have sometimes been criticized for having narratives that are far less elaborate and artistic than those presented in cinema, let alone literature (Ebert, 2010), technological advances

in content presentation and the diversification of both the games market and its audiences have engendered games that offer sophisticated narratives. In particular, the rise of the independent (indie) games scene (as opposed to the mainstream “AAA” market) has increased the potential for meaningful experiences with digital games beyond pure fun. The advent of digital distribution channels, such as Steam, Xbox Live, and the PlayStation Marketplace, which allow for a games marketplace beyond those sold en masse in retail stores, as well as the success of crowdfunding platforms like Kickstarter and indiegogo, have enabled relatively small digital game development teams to fund and distribute their products without the need for a publishing company or large-scale funding. Similar to the history of independent film as described by Biskind (2007), the birth of indie games in the last decade gave rise to a niche market that exists between the big business of “AAA” productions and computer game art. These games often feature unusual scenarios or tackle complicated subjects not popular with mass-marketed commercial titles, such as the game *Papo & Yo* (Minority, 2012) about the relationship between a boy and his alcoholic father, or *Fate of the World* (Red Redemption, 2011), which deals with global politics and saving the environment. Although many of the top-selling games, particularly from the first-person shooter genre, still work with flat and stereotyped characters and clichéd narrative elements, games like *Heavy Rain* (Quantic, 2010), whose script has over 2,000 pages (PlayStation.Blog, 2009), have shown that complex and thought-provoking narratives can be successful with heavily-marketed, so-called “AAA” titles.

As the plot lines of digital games have become more sophisticated and complex over the years, narrative elements can be identified as powerful sources of appreciation in traditional media forms to digital games, particularly within the tripartite framework of the IMP. Recently, researchers have started looking at moral decision making in games (for a comprehensive overview see Poels & Malliet, 2011). Tamborini's (2012) model of intuitive morality and exemplars (MIME) predicts how exposure to media (including games) increases the salience of five basic moral domains (harm/care, fairness, loyalty, authority, and purity), affects the evaluation of media content, and, in the long term, shapes the viewers' system of norms and values (e.g., Jöckel, Bowman, & Dogruel, 2012). Accordingly, digital games that feature narratives relevant to these domains, for example by allowing the player to either adhere to or violate moral values and norms with in-game behavior, should be able to elicit states of (moral) pondering and contemplation.

A recent example of a game that appears to offer eudaimonic gratifications through its narrative without much aid from game mechanics or contextual factors is *The Walking Dead* (Telltale Games, 2012). In this game, set in a zombie apocalypse scenario, there are very few typical game tasks, such as puzzle solving or motoric challenges. Instead, the player is frequently confronted with moral dilemmas through interactions with other characters and decisions that progress the story and the characters' development. These dilemmas pertain to issues such as allocation of limited resources (e.g., whether to provide children with food or save it for adults, who are

more useful in the fight against the undead), interpersonal trust (e.g., confiding secrets to other characters), or “gut decisions” under pressure (e.g., whom of two beloved characters to save). Conversely, taking a rationalist perspective on morality, Klimmt, Schmid, Nosper, Hartmann, and Vorderer (2008) argue that moral concerns pose a constant challenge to hedonic game enjoyment. They propose that players develop strategies to morally disengage from objectionable behaviors of their avatars in order to maintain a pleasurable game experience (e.g., by consciously distinguishing reality from the game or by arguing that those behaviors are necessary in order to win). This line of argument found some empirical support as well (Hartmann & Vorderer, 2010; Klimmt, Schmid, Nosper, Hartmann, & Vorderer, 2006). But does this imply that enjoyment and moral engagement are two generally antithetic experiences of digital games? Following the reasoning of Oliver and Raney (2011), it seems more plausible to consider different motivations in the selection of games, as well as different playing styles underlying multiple episodes of exposure to the same game, to examine when a game is sought out for reasons beyond pleasure. Accordingly, the IMP would predict that players with specific dispositions (either on a trait or a state level) to appreciate more solemn narratives would not find their game enjoyment to be inhibited, but that moral engagement facilitates its processing on a different level.

Naturally, one might also look at specific narrative elements and their characteristics that predict the appreciation of digital games. Adding to the role of need fulfillment in eudaimonic gratifications, the properties of avatars might be particularly potent in satisfying the need of relatedness as proposed by SDT. Bowman, Rogers, et al. (2013) suggest that processes of parasocial interaction (Horton & Wohl, 1956) are amplified in digital games as players influence the behaviors of the characters they relate to (Lewis, Weber, & Bowman, 2008). These interactions between players and their avatars, especially when the game enforces moral decision making, could fulfill the need of relatedness more than other media, and, thus, potentially elicit eudaimonic gratifications.

In line with the other models of moral media entertainment discussed above, the IMP would assume a dualistic process here. In accordance with Klimmt et al.'s (2008) perspective, we argue that for games designed to be enjoyed hedonically, and for players that seek out this type of entertainment, moral concerns are indeed hindering the pursued gratification. Whether or not the presented narrative adheres to moral codes or violates them would be largely unimportant, as it is the codes themselves (or the salience thereof) that players disengage from. In such cases, five intuitive moral domains (Tamborini, 2012) simply become irrelevant as categories for the desired game experience.

Conversely, a game presenting thought-provoking narratives might be played with a different mindset, and particularly players with a disposition for this type of entertainment should evaluate the presented moral codes. Only then will players appraise whether the content adheres to their own moral beliefs or violates them, particularly

when these attitudes and beliefs are challenged by the goal of the game. Thus, games could easily function as virtual representations of classic philosophical questions of means and ends. Another eudaimonic device could be to involve cherished characters in these events, or to disrupt the increased attachment to a game's protagonist by having them act in a way that the players might find morally questionable. Ultimately, to experience eudaimonic gratifications, players might actively suppress their moral disengagement and expose themselves to a game narrative that is less pleasant, but more enriching.

The role of mechanics

Thus far, only the studies by Oliver and colleagues (2013) and Bowman, Rogers, and colleagues (2013) have examined the relationship between mechanics of a game and appreciation. Although in many cases, game mechanics may not be designed to facilitate experiences beyond simple enjoyment, we suggest that mechanics can influence appreciation in ways that are unique to digital games. When put into the right context, it is possible for even games with very simple mechanics to elevate the experience of playing to a state of contemplation. All mechanics elicit immediate gratifications hedonically, at least to an extent, but only some elicit eudaimonic gratifications upon further reflection (Vorderer & Ritterfeld, 2009). However, when being too demanding or complex, game mechanics can also inhibit this reflective process. As cognitive resources are limited when it comes to the processing of media content, as suggested by the limited capacity model of motivated mediated message processing (LC4MP; Lang, 2000), there are likely to be constraints for the demands imposed on the player by the mechanics of a game. Therefore, the difficulty of a game does not necessarily diminish its hedonic gratification, but bears the risk of restraining eudaimonic gratification.

Several previous studies (Bowman, Rogers, et al., 2013; Oliver et al., 2013; Tamborini et al., 2011) have already shown that different game mechanics address different needs and that the fulfillment of these needs is related to the experience of both enjoyment and meaningfulness. Accordingly, SDT (Deci & Ryan, 2000) can provide a theoretical frame for studying the relevance of game mechanics for eudaimonic appreciation. While we agree with Oliver and Bartsch (2011) that the fulfillment of needs according to SDT is often more related to enjoyment than appreciation, some of the studies cited above have shown that game mechanics, the fulfillment of needs, and meaningfulness are certainly related. What we would propose as an addition to the predictions derived from SDT is that, unlike enjoyment, the experience of meaningfulness in digital games is based not only on the fulfillment of needs, but also on making the player aware of these and, potentially, also subverting them. To illustrate what is meant by this, we will briefly discuss two examples that illustrate how games can offer meaningful experiences by challenging the expectations of their players and questioning their role.

One example of game mechanics providing meaningful experiences by “playing with” the need for competence is the browser game September 12 (Newsgaming,

2003), a so-called “news game” dealing with the contemporary “war on terror.” The game instructs the player to kill terrorists mingling with civilians in a Middle Eastern city. However, when the player’s bombs cause collateral damage, civilians transform into terrorists. Ultimately, it becomes apparent that there is no way to win the game with the tools provided by the game mechanics, i.e., the bombs that exacerbate the terrorist threat. Although the game lets the player experience some sort of self-efficacy (a simple click drops a highly destructive bomb), the need for competence is, ultimately, thwarted by the impossibility to actually succeed at or win the game. What makes this experience meaningful is that by realizing that this game cannot be won, players are encouraged to think about whether the “war on terror” can be won. And just as one might argue that September 12th is not a game because it has no win state, one might similarly put into question whether the “war on terror” is actually a war according to traditionally understood definitions.

A game whose mechanics provide a meaningful experience by influencing the fulfillment of the need for autonomy rather than competence is *The Stanley Parable* (Galactic Café, 2013). This first-person adventure game puts the player in the role of Stanley, an office worker who finds his office building to be deserted when he tries to figure out the reason behind a crash of his computer. Throughout the whole course of the game, the player is guided by the voice of a narrator who tells Stanley what to do and comments on all of his actions. If the player decides to follow the instructions of the narrator, however, the game ends very quickly and without a satisfying resolution of the mystery of the deserted office. The game only becomes interesting if the player ignores the narrator’s instructions. Once the player decides to defy the narrator, he constantly tries to bring Stanley/the player “back on track” by adapting the narrative. Similar to September 12th, this game uses game mechanics to provide a meaningful experience by manipulating the satisfaction of needs as described by SDT on two levels: It shows how game design (level layout, narrative, affordances etc.) limits the autonomy of the player and how structures like office architecture, hierarchies, or work routines reduce the experience of autonomy at work. It is, hence, not so much a thwarting of need fulfillment, but the process of making the player aware of the experience of autonomy (and the need for it).

It is not necessary, though, for a whole game to be designed around the questioning or subversion of player needs as in the examples above. Many games have so-called “breaking the fourth wall” experiences in which the player is either directly or indirectly addressed, e.g., to comment on or question moral choices made in the game. The key point here is that while some form of need fulfillment is necessary for enjoyment, the experience of meaningfulness can also be brought about by “playing with” the expectations and needs of the player by making them apparent and putting them into question. Hence, the IMP can add to the motivational perspective of the SDT by recognizing that players have specific expectations about a game, and that it is not necessarily an unpleasant experience if these are not met. Playing with the expectations and motivations of a player, or subverting their intrinsic needs through the mechanics of a game, can be thought-provoking

and enriching if the game has something to offer besides pure sensual stimulation and (virtual) rewards for success. This can be achieved, for example, by making players uncover their own illusion of choice, and ultimately crossing the lines between the game world and the player's world. Conversely, a game that is simply too demanding in terms of its mechanics (e.g., through complexity of controls), or one that disrupts the eudaimonic gratification through reoccurring technical problems, might inhibit appreciation as it limits the cognitive capacities required for a thorough appraisal.

The role of context

The social context of playing digital games also has the potential to deliver eudaimonic gratifications. The presence of coplayers is what changes the pleasure of succeeding at a challenge into a shared experience of achievement and creates a sense of “togetherness” that extends beyond the virtual space. While, again, there is a lack of research focusing on gaming context and eudaimonic experiences, there is evidence for generally meaningful effects of social context in gaming in the empirical work on bridging and bonding social capital through social play (Kowert, Domahidi, & Quandt, 2014; Trepte, Reinecke, & Juechems, 2011). The presence of the ties associated with bridging and bonding social capital may define whether a shared game session is a primarily hedonic or eudaimonic experience. A game session played with an acquaintance may be largely hedonic, but shared gaming experience can offer meaningful experiences for the players with an established sense of community or shared memories. This social dimension of games fulfills the need for relatedness, which previous research has been found to be connected to enjoyment and appreciation (Tamborini et al., 2010; Vorderer & Ritterfeld, 2009). As a simple example, two friends playing a game together that they often played together as children might provide an entertainment experience that differed in its meaningfulness compared other games played at other times with other friends.

Another conceptual variable that has been explored in research on video game effects is the distinction between coplaying with a competitive or cooperative partner, with findings suggesting that playing games in cooperative roles elicits lower levels of aggression and greater helping behavior than playing competitively (Ewoldsen et al., 2012; Schmierbach, 2010). Within the framework of the IMP, this variable of competitive or cooperative play setting can also be viewed as a potential predictor of meaningful entertainment experiences, especially in conjunction with conceptual variables associated with the need for relatedness and strength of social capital relationships between players. Also relevant is theoretical work on social identity and the concepts of in-group and out-group categorization (Tajfel, 1974), which have been explored in research finding that cooperative play may attenuate intergroup biases (Velez, Mahood, Ewoldsen, & Moyer-Guse, 2013). In his autobiographical book about video games and video game journalism, Bissell (2011) describes an experience in an online game of the first-person shooter *Left 4 Dead* (Valve, 2008) that he played cooperatively with players he had never met in person. In a session of this zombie-themed

game where players have to survive a zombie apocalypse by reaching a designated safe room at the end of each level, Bissell tells how he lost his teammates and reached the safe room by himself and then, after some deliberation, left the safe zone to rescue one of the remaining players who had called for help. This action not only earned him the admiration of his fellow players, but also led to a friendship between him and the player he rescued. This anecdote is just one potential example of how the setting of cooperative game play, as well as the shared group identity of the players and existing social ties, may enhance responses to a game's narrative content by providing a meaningful game experience conducive to development of social capital between players.

Conversely, the social context of a game that places its players in an intensely competitive setting may enhance meaningful responses to a narrative in different ways. For example, in another online zombie-themed game named *DayZ* (Bohemia Interactive, 2013), two key mechanics of the game driving the experience are a strict punishment mechanism that permanently removes a character killed in the game from play (rather than returning the character to the game with a minor penalty, as is increasingly common in online games) and a deliberately resource-scarce environment in which players must compete fiercely for survival supplies. In this type of game, the interaction between players may include development of shared meaningful experiences through cooperation and building social capital, but as often as not also involves moral dilemmas engendered by competition for limited resources, distrust and betrayal, and the substantial consequences of character death for the game's players. As Khoo (2012) argues, when players are confronted with moral dilemmas which demand decision-making, particularly when there are social obligations towards other players (as it is common in the genre of massively multiplayer online role-playing games), games could even function as moral educators by emphasizing empathy, perspective-sharing, fairness, and taking responsibilities for others.

Thus, a game's mechanics, social context, and narrative can interact to produce meaningful experiences as players apply – and sometimes violate – their intuitive moral judgments to decisions that have notable consequences for competing players with varying levels of shared group identity and existing social capital. Such meaningful experiences are enhanced by the interplay between variables related to narrative, mechanics, and context in games through processes that fit the tripartite model of the IMP and are not explained by scholarly approaches to meaningful experiences with noninteractive screen media.

Conclusions

Given the unique dynamics of hedonic and eudaimonic experiences with digital games vis-à-vis noninteractive media, mapping the concepts of eudaimonic gratifications and meaningfulness on the IMP has potential for enhancing our understanding of the unique appeal and effects of digital games. The few studies

that have investigated nonhedonic gratifications from digital games lend support to our proposal that the unique characteristics of the digital game medium need to be reflected in the conceptual approaches and methods that are used to study digital games. The interactivity and social nature of digital games warrant special attention when researching their users and uses. Building on the framework provided by the IMP, we propose that both hedonic and eudaimonic gratifications from digital games depend on the interplay of variables related to game narratives, mechanics, and the social context of play. Further, theories, concepts, and variables from previous scholarship dealing with other media can be adapted to video game research by applying existing concepts and variables as specific aspects and elements of the major game dimensions of narrative, mechanics, and context.

While meaningful experiences with noninteractive media, such as films and television, are typically elicited by narrative alone, digital games have the additional layers of mechanics and social interaction that drive users' experience. While the mechanics of a game must be appealing for a game to be enjoyable, they are less likely on their own to trigger meaningful experiences in the sense of being thought-provoking or life-enriching. Similar to other media, the narrative of a game is a much better means for eliciting meaningful experiences and delivering eudaimonic gratifications, but with digital games the experience of that narrative can be augmented and enhanced dramatically by game mechanics. Another dimension that can offer nonhedonic gratification that is unique to games is the social interaction with other players. Eudaimonic experiences in response to this digital game play dimension have not yet been investigated empirically, but such a program of research might explain why people seek out games that offer experiences beyond fun and enjoyment.

Although each of the dimensions discussed above makes unique contributions to the gaming experience, it is when all three factors – narrative, mechanics, and context – interact in concert that games may be able to create the most powerful experiences, and the IMP is uniquely positioned to guide research on these powerful interactions between factors that are unique to the medium. Similar to Tamborini's (2011) emphasis on understanding functional associations between different virtues related to eudaimonia (e.g., courage, wisdom), the IMP argues that the experience of games should not be described by the compilation of its structural components (narrative, mechanics, and context), but understood as the result of their functional interactions. We hope that investigation of these dimensions guided by the IMP can help to produce an improved understanding of digital games and nonhedonic gratifications. As a starting point, it could be promising to conduct a series of qualitative studies that identify what “meaningfulness” means for players of digital games or what types of experiences they have or seek when playing “meaningful” games. In a next step, a combination of content analyses and interviews of players could be used to investigate which features of a game or the playing situation can enable meaningful experiences. Subsequent experimental studies can manipulate these features by sampling different games or modifying a game to study their contribution to the obtainment of both hedonic and nonhedonic gratifications.

In summary, we are confident that a better understanding of the concepts of meaningfulness and eudaimonic gratifications in digital games research can enrich the debate about player motivations and the effects of playing digital games. By taking into account the unique characteristics of this medium, scholars may be in a stronger position to identify the variables that not only make gaming enjoyable for many players, but that also provide individuals with thought-provoking and meaningful experiences beyond enjoyment.

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