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Mary Beth Oliver

Nicholas David Bowman

Julia K. Woolley

Ryan Rogers
Butler University, rprogers@butler.edu

Brett I. Sherrick

See next page for additional authors

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Authors

Mary Beth Oliver, Nicholas David Bowman, Julia K. Woolley, Ryan Rogers, Brett I. Sherrick, and Mun-Youn Chung

Video games as meaningful entertainment experiences

Mary Beth Oliver, *Pennsylvania State University*

Nicholas David Bowman, *West Virginia University*

Julia K. Woolley, *California Polytechnic State University, San Luis Obispo, California*

Ryan Rogers, *Marist College*

Brett I. Sherrick, *University of Alabama*

Mun-Young Chung, *Pennsylvania State University*

We conducted an experiment to examine individuals' perceptions of enjoyable and meaningful video games and the game characteristics and dimensions of need satisfaction associated with enjoyment and appreciation. Participants ($N =$ 12) were randomly assigned to 1 of 2 groups that asked them to recall a game that they found either particularly fun or particularly meaningful, and to then rate their perceptions of the game that they recalled. Enjoyment was high for both groups, though appreciation was higher in the meaningful- than fun-game condition. Further, enjoyment was most strongly associated with gameplay characteristics and satisfaction of needs related to competency and autonomy, whereas appreciation was most strongly associated with story characteristics and satisfaction of needs related to insight and relatedness.

Popular conceptualizations of video games often tend to characterize this form of entertainment as a somewhat shallow or superficial diversion filled with adolescent fantasies of gladiator battles and zombie shootouts. As such, critics have questioned if games have merit beyond that of mere hedonistic entertainment. For example, Roger Ebert (2010) declared that video games can never be considered art to the same extent as other forms of entertainment such as films. Similar sentiments have also been echoed by prominent game makers such as Hideo Kojima (Gibson, 2006) and by science- fiction author Ray Bradbury who said—"Video games are a waste of time for men with nothing else to do. Real brains don't do that" (qtd. in Hibberd, 2001, pp., para. 26). Likewise, in a ruling that was quickly overturned, U.S. District Court Judge Stephen N. Limbaugh Sr. denied First Amendment protections for video games, declaring that games

contained "no conveyance of ideas, expression, or anything else that could possibly amount to speech" (qtd. in Au, 2002, pp., para. 1).

Conversely, in defense of video games, the U.S. Supreme Court has formally extended free speech protection to video games due to their expressive and artistic elements (Brown v. Entertainment Merchants Ass'n, 2011). Likewise, The Smithsonian Institute has hosted installations showcasing historically significant games and has described video games as "a prevalent and increasingly expressive medium within modern society [. . . that] offer artists a previously unprecedented method of communicating with and engaging audiences" (Smithsonian American Art Museum, 2012, para. 1). Consistent with these favorable characterizations of games, the recent success of games like the cult-classic *Heavy Rain* (developed by Quantic Dream and released in 2010) suggests an increasing movement toward games that takes advantage of the medium's expressive potential and its seeming ability to appeal to more than hedonistic concerns. *Heavy Rain*, a game that is perhaps best described as a "video game noir," tells the story of a father who attempts to rescue his son from becoming the next victim of a serial killer. Although game developers estimated that the game would have only modest sales, *Heavy Rain* not only sold 2 million copies worldwide, but attracted wide-spread critical acclaim as well (VGChartz, 2012). For example, Winda Bendedtti of MSNBC noted the depth and maturity of *Heavy Rain* and *Alan Wake* (a psychological thriller by Remedy Entertainment) in her praising review, "These two games have said goodbye to the tired alien invasions and over-the-top fantasy stories so often found in video games. Instead, they peer into the dark reaches of the very real human heart to deliver stories that are thrilling, chilling and utterly absorbing" (Benedetti, 2010, para. 6).

Is the popular and critical success of *Heavy Rain* an exception that ultimately serves to prove the rule that games focus almost entirely on hedonic concerns? Or might games—as interactive narratives—have the ability to address individuals' needs for greater insight and meaning in ways that meet or even surpass their less interactive peers, such as TV and film? Although the earliest video games such as *SpaceWar*! and *Pac-Man* relied more or less on fastpaced button presses and increasingly complex logic puzzles as the primary

means for entertainment, the medium has since evolved—as most forms of entertainment media do (Johnson, 2005)—into a tool capable of offering a wide variety of emotional experiences, from basal arousal to pain and poignancy. Indeed, some aspects of gaming suggest that this form of entertainment may be *particularly* likely to facilitate meaningful experiences among players. For example, unlike films, books, or TV programs, games provide (and sometimes require) the opportunity for the player to be actively involved in story narratives and in making decisions regarding the course of events (Bowman & Banks, in press). As a result, games provide the opportunity of enhanced identification with characters (Klimmt, Vorderer, & Ritterfeld, 2007) and the possibility to experience a broad range of emotions, including ones such a pride or guilt that reflect greater agency on the part of the player (Grizzard, Tamborini, Lewis, Wang, & Prabhu, 2014; Hartmann, Toz, & Brandon, 2010). These novel aspects of gaming entertainment, therefore, suggest that games not only *allow* for meaningful entertainment, but they may be particularly *able* to be meaningful when the story is compelling and engaging.

We are careful to note, though, that although more "meaningful" games seem to be increasingly common and of interest to the gaming industry, examples of such games can also be found in some older games as well. For example, one of the first (and certainly, most widely recognized) commercially successful video role-playing games is Hironobu Sakaguchi's *Final Fantasy*, released for the Nintendo Entertainment System in 1987 and whose name is a reference to the writer's last efforts to write a serious video game that, at the time, many in the gaming industry worried would simply would not sell (cf. Fear, 2007). More recently, even games that may seem to be primarily firstperson shooters also reflect elements that many gamers may find meaningful and reflective. For example, *Call of Duty* includes discussions of terrorism and political warfare, including an infamous level in *Call of Duty IV: Modern Warfare* in which players are required to don the role of terrorists charged with taking over an airport, massacring innocent civilians in an attempt by the programmer to "get the player to feel anything at all" outside of the hero's perspective (Totilo, 2012, para. 3). In explaining these seemingly counterhedonic gameplay elements, designer Walt

Williams (creator of *Spec Ops: The Line*) explained that such games contextualize violence so that players are forced to introspect and judge themselves on the basis of their on-screen actions (Williams, 2012).

In parallel to this gaming evolution, recent scholarship in entertainment psychology has begun to expand the boundaries of audience responses to recognize gratifications associated with both pleasure (hedonistic gratifications) and meaning/insight (eudaimonic gratifications). However, this research has largely examined more traditional forms of entertainment such as cinema or literature (Oliver & Raney, 2011). As such, the purpose of the present study is to expand upon the growing area of research on entertainment, meaningfulness, and appreciation by exploring these issues in the context of video games. In particular, our research is directed to examining the extent to which video games can provide viewers with pleasurable *and* meaningful entertainment experiences, and to exploring the types of game characteristics and gamer experiences that are the strongest predictors of individuals' perceptions of enjoyment and appreciation.

Enjoyment and Appreciation of Entertainment

Foundational scholarship in media psychology has tended to characterize media entertainment as focused on pleasure specifically. Namely, research from mood-management perspectives examining the selection of entertainment (Zillmann, 2000), and scholarship on affective-disposition theory and individuals' enjoyment of entertainment have tended to suggest that people select entertainment for purposes of pleasure seeking (or pain avoidance), and that enjoyment of entertainment (the presumed goal) is a function of "just" resolutions that feature the victory of beloved protagonists or the demise of despised villains (Raney, 2006; Zillmann, 1991).

With this background in mind, more recent scholarship in entertainment psychology has begun to explore aspects of entertainment gratification beyond pleasure. Namely, research on appreciation and gratifications associated with meaningfulness (as opposed to positive valence specifically) has garnered greater research attention, with scholarship in this area suggesting that in addition to providing viewers with pleasurable

experiences, entertainment also has the ability to provide viewers with meaningful experiences. Oliver and Raney (2011) used the term "eudaimonia" to refer to the gratifications associated with meaningful entertainment, arguing that whereas hedonic gratifications tend to be associated with the experience of fun and pleasure, eudaimonic gratifications tend to be associated with appreciation of the understanding and insight concerning meaning-in-life questions and issues regarding the human condition. Further, these authors also suggested that the experience of meaningful gratification is associated with unique affective responses characterized not so clearly in terms of positive and negative valence, but rather by feelings reflecting mixed affect such as *moved, touched*, or *compassionate*. As such, Oliver and Bartsch (2010) argued that whereas the word *enjoyment* may be most appropriate in characterizing gratifications associated with hedonic gratifications, *appreciation* may better capture the gratifications associated with the consumption of meaningful media that is thought-providing and often moving, but that is not necessarily associated with positive affect.

Gratifications Associated With Game Play

The recent move toward a greater recognition of nonhedonic gratifications of entertainment media is paralleled by additional scholarship that has studied enjoyment as reflecting need gratifications. Specifically, Tamborini, Bowman, Eden, Grizzard, and Organ (2010) argued that media enjoyment may be conceptualized in terms of the extent to which the entertainment fulfills intrinsic psychological needs—namely the needs of autonomy (a sense of control or volition), competency (a sense of mastery or effectiveness), and relatedness (a sense of social connectedness) as identified by self-determination theory (SDT; Huta & Ryan, 2010). Original work applying SDT to video games (Ryan, Rigby, & Przybylski, 2006) found that unique aspects of video games, such as the intuitiveness of a game's control system and a sense of presence in the game environment, were associated with the attainment of autonomy and competence, and that players of massive multiplayer online games tended to report higher levels of relatedness need satisfaction. Follow-up work by Tamborini et al. (2010) found that experimentally

manipulating aspects of gameplay had significant positive effects on heightening feelings of autonomy and competence (as a function of the motion controller) and relatedness (as a function of the presence of other gamers). Moreover, greater self-reported levels of psychological need satisfaction resulted in higher levels of self-reported game enjoyment (see also Ryan et al., 2006). These studies, as well as more recent replications (Tamborini et al., 2011), have established that an important intrinsic motivation for playing video games might be found in their ability to satisfy basic psychological needs (see also Przybylski, Rigby, & Ryan, 2010). However, Tamborini et al. (2010) noted that their SDT model of gaming enjoyment, although successful in explaining over half of the variance in self-reported entertainment experiences, likely omitted dimensions of eudaimonia and appreciation highlighted by Oliver and Raney (2011).

The above research provides a compelling background for exploring the importance of nonhedonic gratifications in a gaming context. With this in mind, the present study intended to expand upon this scholarship in two important respects. First, whereas Tamborini et al. (2010, 2011) focused exclusively on enjoyment as the outcome of interest, our study expanded this focus to also include appreciation—a particularly important entertainment outcome in video games given the gaming industry's self-proclaimed and deliberate shift toward the production and distribution of greater numbers of (emotionally) serious games (such as *Heavy Rain* mentioned previously). Second, given that eudaimonic gratifications are generally thought to reflect, at least in part, an appreciation of greater insight about purpose-in-life questions afforded by meaningful entertainment, our study also explored the viability of an additional need satisfaction—that of insight—that might serve to predict gamer responses.

Although Ryan and Deci (2000) have argued that "meaningfulness" may be best understood as the integration of values in the self that can be realized in terms of the fulfillment of competency, relatedness, and autonomy needs, we sought to empirically examine the feasibility of the notion that insight represents an additional need. Our focus on insight is driven by the recognition that "meaningful" entertainment appears to frequently consist of stories that highlight fundamental values (e.g., compassion) or depictions of the human condition (e.g., mortality; Oliver, Hartmann, & Woolley, 2012). As such, meaningful

entertainment provides the opportunity to reflect on important "lessons" such as the value of virtue, the beauty of compassion, or the resiliency of the human spirit. In short, we use the word "insight" to represent the feelings associated with contemplating, introspecting, and experiencing greater understanding of essential values, fundamental beliefs, and important life lessons. We believe that this additional need of "insight" explored in this study complements recent work by Przybylski, Weinstein, Murayama, Lynch, and Ryan (2012), who have suggested that not only can video games satisfy our basic psychological needs, but they can also help players better negotiate and understand novel experiences—in particular, emotional experiences not normally part of their daily routine (Grodal, 2000). Similar to this argument, we propose that whereas fun games may be enjoyed because they address needs associated with competency and autonomy, meaningful games may give rise to feelings of appreciation because they address needs associated with insight.

In this study, we sought to empirically examine the viability of the notion that insight represents an additional and different need from those outlined in SDT (Ryan & Deci, 2000) that may be more strongly related to appreciation over enjoyment of media entertainment. In this research, we suggest that the concept of insight may be more akin to the kind of concerns addressed in experimental existential psychology broadly speaking than SDT specifically. These are needs related to "making sense" of major existential concerns regarding death, isolation, identity, freedom, and meaning (Koole, Greenberg, & Pyszczynski, 2006). As Koole et al. point out, SDT addresses many of these concerns (e.g., how we form a sense of identity in the face of external influences), though it may not address other existential questions of meaning and existence which might require additional emotional and cognitive effort or sensemaking. This kind of grappling may, in turn, result in a feeling of illumination, awareness, or what we are calling "insight."

In focusing on "insight" as an additional intrinsic need, we note two aspects of our use of this concept in the context of this research. First, as described previously, we believe that insight likely represents an important aspect of eudaimonic entertainment experiences. However, we do not want to suggest that the fulfillment of needs for insight represent the only gratification that may be associated with eudaimonic

concerns or the experience of appreciation. For example, Wirth, Hofer, and Schramm (2012) included media experiences such as heightened feelings of self-acceptance and the activation of central values (among others) as reflecting eudaimonic responses. Although these additional elements may ultimately be subsumed under our concept of *insight*, we opted to retain our use of this term to both parallel the other intrinsic needs examined in this study, and to also acknowledge that our concept may not fully capture the breadth of conceptualizations of "eudaimonic" experiences discussed in extant theorizing in media psychology.

The second thing we note about our conceptualization is that our use and measurement of the term "insight" does not specify what the object of insight may be. In other words, although we believe the experience of insight to be associated with meaningful entertainment, we recognize that people may find insight about different issues or topics to be meaningful. Whereas some people may find insight about death to be meaningful, others may find insight about love to be meaningful. Consequently, we do not provide an answer to the question "Insight about *what*?" Rather, we are more interested in individuals' subjective perceptions that some forms of entertainment provide them with greater insight, and that the experience of this greater insight is associated with feelings of appreciation, regardless of the variations of the object of what that insight may be. We believe that this approach has two advantages. First, by allowing individuals to report on their subjective experience of insight per se (rather than on insight about specific issues), we believe that our approach is more inclusive in recognizing the innumerable individual differences that may be associated with perceptions of meaningful entertainment. Second, because one goal of this research is to examine insight as an additional intrinsic need to those identified in SDT, we were interested in creating items that are parallel to those previously used. In this research, we used the Player Experience of Need Satisfaction scale (PENS scale; Ryan et al., 2006). This 9-item scale includes three items to represent needs related to autonomy, competence, and relatedness. Importantly, many of the items in this scale do not specify the object of the needs, but rather the experience of need fulfillment per se. For example, one item used to assess competence in this measure is "I felt very capable and effective when playing." Although

this item appears to assess feelings of competence while playing, it does not specify competence about any specific aspect of the game (e.g., shooting opponents, bowling a strike, achieving points, solving clues, etc.). Likewise, one of the items that we created to measure insight was "Playing this game has given me new insights about life." This item was intended to capture the experience of greater insight without targeting any specific topic of insight.

The Present Research

To summarize, entertainment scholarship now recognizes that entertainment can provide viewers with pleasurable as well as meaningful entertainment experiences. Further, research on video games has now begun to examine nonhedonic gratifications. However, this scholarship on gaming has focused its attention on how the fulfillment of these nonhedonic concerns may ultimately serve to increase enjoyment rather than meaningfulness specifically. As a consequence, one overarching research question examined is whether or not individuals experience games as meaningful to the same extent to which they are experienced as fun or pleasurable.

RQ1: Are individuals able to recall meaningful video game experiences at the same rate that they are able to recall enjoyable video game experiences?

Insofar as games may be experienced as meaningful, another goal of this study is to examine the viability of an additional gratification of game play (coupled with gratifications related to autonomy, competence, and relatedness) that may be more reflective of meaningfulness than of enjoyment.

RQ2: Is there an additional nonhedonic gratification that is more characteristic of meaningful than fun game experiences?

The final goal of this article was to expand upon the model provided by Ryan et al. (2006) and Tamborini et al. (2010) to include appreciation (as well as enjoyment) as an outcome variable. Notably in that work,

game characteristics such as intuitive controls and presence were significantly associated with enjoyment (through a direct impact self-determination needs). For this study, gamers are asked to recall experiences they found "fun" or "meaningful" and then asked to review those games, similar to how a review for a gaming magazine might be written. As such, we had them focus specifically on mechanics of gameplay (potentially related to enjoyment mechanics, such as game controls and in-game action) and the narrative of their recalled game (potentially related to appreciation mechanics, such as character and plot development). Thus, we asked:

RQ3: How do game characteristics and need satisfaction work together in predicting both enjoyment and appreciation of games?

Figure 1 provides an overview of the general model examined in this last research question.

Method

Participants and Procedures

The sample of participants in this study consisted of 512 individuals recruited from a variety of online venues. These venues included postings on gaming Web sites (e.g., Gamespot, Gameinformer), gaming forums (e.g., PlayStation® Community Forums, Xbox Forums), social networks (e.g., Facebook and Twitter), professional listservs (e.g., Communication Research Theory Network), and invitations forwarded to other individuals by participants in our study. The majority of these participants were male (67.8%), ranging in age from 18 to 56 (*Median* = 27, *M* = 28.98, *SD* = 7.44). Participants reported playing games for over seven years on average (*M* = 7.47, *SD* = 6.41). In exchange for participation, people were given the opportunity to enter their names in a lottery in which 10 recipients were randomly selected to receive a $50 (USD) gift certificate for Amazon.com.

When participants first logged into the online questionnaire, they first provided basic demographic information (gender, age) and their years of gaming experience. They were then prompted to name a game that they found either fun or meaningful. Subsequently, they rated their affective responses to the game; the extent to which the game fulfilled needs related to competency, autonomy, relatedness, and insight; their evaluation of the game characteristics; and the extent to which they enjoyed and appreciated the game they named. The median time to completion was 19 min and 21 s.
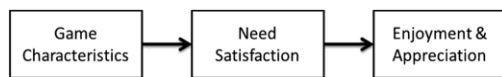
Figure 1. Variables in game-playing experiences.

Measures

Enjoyment and appreciation. Enjoyment and appreciation were assessed with two single item measures described by Oliver and Bartsch's (2010). Specifically, an explanation was first presented that explained to participants that although people often experience enjoyment *and* appreciation when consuming some given type of media entertainment, it is possible that, at times, people may enjoy entertainment fare that they do not necessarily appreciate, or appreciate entertainment that they do not necessarily enjoy. Subsequently, participants indicated how much they enjoyed ($M = 6.64$, $SD = 0.67$) and appreciated ($M = 5.57$, $SD = 1.77$) the game using two separate 7-point scales ranging from 1 (*not at all*) to 7 (*very much*). These single-item measures were used rather than the enjoyment and appreciation scales developed by Oliver and Bartsch (2010) because those scales included items containing the very words used in our manipulation (i.e., *fun and meaningful*). However, their research also provided evidence for the validity of the single-item measures that we used in the present study.[1]

Affective responses. Given the open-ended nature of our "fun" and "meaningful" manipulations, participants were asked to report their affective responses to the games named in each experimental conditions as one means of verifying the effectiveness of our manipulation. These affective responses to the games were assessed by presenting participants with a series of affect terms and having them rate how much they experienced each emotion while playing the game they named (1 = *Not at All*, 7 = *Very Much*). Items were drawn from a variety of sources with the intention of including items that would represent a range of responses including meaningful, positive, and negative affect (Algoe & Haidt, 2009; Edell & Burke, 1987; Oliver, 2008; Oliver et al., 2012; Oliver & Raney, 2011; Schnall, Roper, & Fessler, 2012). An exploratory factor analysis using principal axis factoring and promax rotation was conducted, with items producing low loadings across all factors (e.g., <.4) or higher loadings (e.g., >.6) on more than one factor re- moved from analysis. The resultant factor analysis suggested three factors with strong simple structure and with eigenvalues >1 that explained 54.04% of the variance. Scales were constructed by averaging the items loading on a given factor. The first factor was labeled "meaningful affect" and included the items *touched*, *moved*, *compassionate*, and *inspired* ($M = 4.01$, $SD = 1.76$, Q = .88). The second factor was labeled "negative affect" and included the items *angry*, *anxious*, *tense*, and *negative* ($M = 3.93$, $SD = 1.46$, Q = .81). The final factor was labeled "positive affect" and included the items *amused*, *humored*, *happy*, and *positive* ($M = 5.60$, $SD = 1.06$, Q = .73).

Game characteristics. Single-item measures were used to assess participants' evaluations of two specific game characteristics thought to be specifically related to "fun" and "meaningful" experiences: gameplay (quality of game control mechanics) and story (quality of the narrative told during gameplay). Participants were asked to imagine that they were reviewing the game for a video game Web site, and were asked to report their evaluation of these characteristics on scales ranging from 0 (*bad*) to 100 (*masterful*). These scales were presented using slider bars and were designed to resemble typical user-rating scales used on popular gaming Web sites (e.g., http://www.gamespot.com/).

Need satisfaction. In keeping with prior research (Tamborini et al., 2010), the PENS scale (Ryan et al., 2006) was used to assess the extent to which the game named by each participant satisfied the needs of competence, autonomy, and relatedness. This measure consists of three Likert-type items per need. The items corresponding to relatedness were modified to refer to relationships with game characters rather than with other players, as it could not be assumed that participants would name a multi-player game. Examples of items from these scales include "The game let me do interesting things" (autonomy) and "I found the relationships I formed with the characters in this game fulfilling" (relatedness).

In the interest of extending the focus of gaming to include meaningful game experiences, we also used three additional items that were de- signed to tap into the need satisfaction that we labeled "insight." The three items used to assess insight needs mirrored conceptual work on the construct by Oliver and Bartsch (2010) and included "Playing this game has given me new insights about life," "Playing this game has made me wiser," and "Playing this game has enriched my life in some way." The choice to keep these items broad (e.g., not specifying the specific insights that were provided) was deliberate, as this format was consistent with the breadth of the items in the PENS scale (e.g., not specifying the specific things that the player found interesting to do). Further, the breadth of the items related to insight was used out of a recognition that meaningfulness is likely to be somewhat idiosyncratic, with some insightful experiences considered meaningful for some individuals yet not for others. A confirmatory factor analysis was used in the examination of these measures and is reported in the results section of this article.

Results

Manipulation Checks

Given the open-ended nature of our manipulation (i.e., participants responded to prompts about "fun" and "meaningful" games using their own construal of these terms), two analyses were conducted to better

understand how these terms were interpreted by respondents: one examining the distribution of mean enjoyment and appreciation scores between both experimental conditions, and one examining the distribution of affective response scores be- tween conditions. Only respondents who were able to name a game were included in these analyses ($N = 432$).

Regarding enjoyment and appreciation scores, a 2 (response: enjoyment, appreciation) X 2 (question prompt: fun, meaningful) mixed analysis of variance (ANOVA) was conducted, with response a within-subjects factor and question prompt a between-subjects factor. This analysis revealed no significant main effects, though the expected Response X Question Prompt interaction was observed, $F(1, 430) = 16.93$, $p < .001$, 11p = .04. This interaction reflected that although enjoyment scores were significantly (though modestly) higher for the fun ($M = 6.70$, $SE = .04$) than the meaningful ($M = 6.57$, $SE = .05$) question-prompt condition ($p < .05$), scores were very high for both. However, appreciation scores showed larger differences, with scores significantly higher ($p < .001$) in the meaningful-game ($M = 5.96$, $SE = .13$) than the fun-game ($M = 5.25$, $SE = .11$) question-prompt condition. In addition to supporting the effectiveness of our manipulation, these results generally suggest that meaningfulness in games does not appear to detract from the enjoyment, but it does serve to boost feelings of appreciation—this latter finding is examined in our discussion section.

Regarding affective response, a 3 (affect: meaningful affect, positive affect, negative affect) X 2 (question prompt: fun, meaningful) mixed ANOVA was conducted, with affective response a within-subjects factor and question prompt a between-subjects factor. In addition to revealing main effects for both affect, $F(2, 429) = 261.93$, $p < .001$, 11p = .55, and question prompt, $F(1, 430) = 32.85$, $p < .001$, 11p =.07, this analysis also revealed the expected Affect X Question Prompt interaction, $F(2, 429) = 43.29$, $p < .001$, 11p = .17. Similar to the findings obtained for the response variables, this analysis showed that positive affect was higher than negative and meaningful affect for both the fun- and meaningful-game conditions. Although differences in positive affect between the fun ($M = 5.69$, $SE = .07$) and the meaningful condition ($M = 5.50$, $SE = .08$) only approached statistical significance ($p = .08$), the participants in the meaningful condition re-

ported significantly higher ratings of meaningful affect ($M = 4.77$, $SE = .12$, $p < .001$) and negative affect ($M = 4.17$, $SE = .11$, $p < .01$) than did participants in the fun condition (meaningful affect: $M = 3.43$, $SE = .11$; negative affect: $M = 3.74$, $SE = .09$). As with the analysis of enjoyment/appreciation suggesting that meaningfulness does not necessarily detract from enjoyment, these results generally suggest that meaningfulness in games does not appear to detract from positive affective reactions, but it does appear to boost meaningful and (to a lesser extent) negative affective responses. Perhaps these patterns reflect the idea that one can have positively valenced meaningful experiences such as pride or gratitude when playing. Importantly, these results add further confirmation of our open-ended "fun" and "meaningful" manipulation.

Experience With Fun and Meaningful Games

The first research question pertained to the prevalence of experiencing games as fun and meaningful. Specifically, RQ1 asked if individuals are able to recall meaningful video game experiences at the same rate that they are able to recall enjoyable video game experiences. To examine this question, a 2 (Game Type: Fun, Meaningful) X 2 (Recall of Game Title: No, Yes) chi-square analysis was conducted. This analysis revealed that whereas almost all participants in the fun condition were able to recall and name a game that they had experienced as fun (97.6%), a significantly smaller percentage of individuals in the meaningful condition were able to name a meaningful game (71.9%), $X^2(N = 512$, $df = 1)$ 64.22, $p < .001$, Cramer's $V = .35$. These results suggest that whereas fun games are more commonly or frequently experienced compared with meaningful games, meaningful games were recalled by over two thirds of the participants in the meaningful condition. Thus, RQ1 is not supported in terms of relative frequency, but the data do suggest that meaningful video game experiences are far from uncommon.[2]

Need Satisfaction

RQ2 asked if there is an additional nonhedonic gratification that may be more closely aligned with recollections of meaningful game play experiences than the three needs-based gratifications identified in extant research on gaming (Ryan et al., 2006; Tamborini et al., 2010). To that end, 12 need satisfaction items were submitted to a confirmatory factor analysis (CFA) to examine the viability that an additional gratification could be identified. This CFA specified four factors, each with three items. These four factors corresponded to the three dimensions identified by SDT, competence, autonomy, and relatedness, as well as the additional dimension created in this study that corresponds to greater insight. This analysis yielded an acceptable level of fit, with factor loadings ranging from .59 to .92, X^2 (df = 48) = 130.59, $p < .001$, comparative fit index (CFI) = .96, root mean square error of approximation (RMSEA) .06. Table 1 shows the correlations between these factors. Of particular interest was the strong correlation between relatedness and insight. To further explore whether these two dimensions may be part of the same factor, an additional test was conducted that constrained the correlation between these two factors to 1 to compare these two CFAs—one with four factors and one with three (Brown, 2006; Hayes, Glynn, & Shanahan, 2005). This test revealed a significant deterioration in model fit when the relatedness and insight dimensions were modeled as a single factor, ΔX^2 (df = 1) 246.39, $p < .001$. These scales had acceptable levels of reliability: competence (a = .72, M = 5.94, SD = 0.94), autonomy (a = .74, M = 5.66, SD = 1.20), relatedness (a = .88, M = 4.26, SD = 1.87), and insight (a = .84, M = 4.29, SD = 1.63). Table 2 reports how these scales differed as a function of question prompts for fun versus meaningful games.

Predictors of Enjoyment/Appreciation

The final research question (RQ3) asked how game characteristics and need satisfaction may work together in predicting both enjoyment and appreciation of games. The general relationships of interest were those illustrated in Figure 1. Because we manipulated whether or not participants named a fun or meaningful

game, this manipulated variable was used as the exogenous variable in the model, predicting ratings of game characteristics (game play and story). Game characteristics were then used as predictors of the fulfillment of the four need satisfaction measures, with need satisfaction variables then used as predictors of both enjoyment and appreciation (see Tamborini et al., 2010).

Table 1
Correlations Between Need Satisfaction Factors

Needs	Competence	Autonomy	Relatedness	Insight
Competence	—			
Autonomy	.56	—		
Relatedness	.31	.39	—	
Insight	.34	.43	.70	—

Note. All correlations are significant at $p < .001$.

A two-step approach was used in the testing of the model, with a full measurement model tested before testing the structural equation model (Kline, 2005). The fit of the measurement model was acceptable, $X^2(df = 88) = 198.28$, $p < .001$, CFI = .96, RMSEA = .05.

The fit of the initial run of the structural equation model suggested room for improvement, $X^2(df = 106) = 516.43$, $p < .001$, CFI = .86, RMSEA = .09. Consequently, the model was then revised in three primary ways. First, modification indices suggested that the residuals for the need-fulfillment variables be allowed to covary. Given that this change seemed theoretically justified, we added these covariances (though not illustrated in the figure for purposes of simplicity). Second, direct paths were added from game play to enjoyment and to insight, and from the exogenous variable to insight/ appreciation. Both of these paths seemed theoretically justified in suggesting that some additional mediators that we have not assessed in this study may prove important in more fully explaining the experience of enjoyment, insight, and appreciation—an interpretation that we more consider in our discussion of the findings. Finally, the nonsignificant paths from relation- ship and insight needs to enjoyment, and from competency and autonomy needs to appreciation were trimmed from the model. Although the path from the exogenous variable to game play was not significant, this path was retained in the model, as game play was a

consequential variable for three of the needs and for enjoyment. The final model, illustrated in Figure 2, showed an adequate level of fit, $X^2(df = 104) = 230.60$, $p < .001$, CFI = .96, RMSEA = .05. As this model shows, meaningful games were associated with higher ratings on the story of the game, with higher story ratings associated with greater fulfillment of autonomy, relatedness, and insight needs. Fulfillment of both related and insight needs were, in turn, predictive of greater reports of appreciation, but insight was the strongest predictor. In addition, however, there was a direct relationship between meaningful games and higher scores on insight, suggesting that this gratification, though a reflection of a strong story line in games, is also predicted by other variables not assessed in this study. In contrast, enjoyment of games was directly associated with higher ratings of game play, as well as greater fulfillment of competency and autonomy needs.

Table 2
Need Satisfaction as a Function of Game Type

| | Game type | | | |
Need satisfaction	Fun	Meaningful	Univ. *F*	T^2
Competence	5.90 (0.06)	5.99 (0.07)	1.02	.00
Autonomy	5.63 (0.08)	5.72 (0.09)	0.60	.00
Relatedness	3.80 (0.12)	4.86 (0.13)	36.98***	.08
Insight	3.85 (0.10)	4.86 (0.11)	45.32***	.10

Note. Numbers in parentheses are standard errors. These univariate statistics are associated with *Multivariate F*(4, 426) = 14.56, $p < .001$, Wilks' A = .88, T_p = .12.
*** $p < .001$.

Discussion

The current study focused on the question of whether or not video games can provide players with meaningful entertainment experiences. Although experiences of enjoyment stemming from video game play have been well-documented in extant literature, recent developments in entertainment theory have suggested that an additional dimension of appreciation or meaningfulness plays an important determining role on one's overall evaluation of media experiences (Oliver & Bartsch, 2010; Oliver & Raney, 2011). Given increasingly common efforts by game producers to introduce morally laden narratives into game

content (Kain, 2012), investigating the potential role of meaningfulness in video games seems to be a natural progression for scholars wanting to understand more intimately the phenomenology of the gaming experience.

Data from our study suggest that (a) although enjoyable video games are more readily recalled than meaningful video games, both were recalled by a high percentage of participants, and (b) different attributes of a video game seem to drive experiences associated with resultant enjoyable or meaningful outcomes in a theoretically consistent and practical fashion. Associated with the latter finding was the detection of an additional need satisfaction factor that we labeled "insight" that seems to function in parallel with the intrinsic psychological needs of competence, autonomy, and relatedness shown by Tamborini et al. (2010) to be predictive of game enjoyment. Finally, as suggested in our literature review, we found evidence for the idea that the satisfaction of intrinsic needs can elicit both feelings of enjoyment and appreciation—a novel finding given that past work linking psychological needs and media entertainment has typically only looked at enjoyment outcomes. In our study, increased feelings of autonomy and particularly competence were associated with enjoyment, whereas increased feelings of relatedness and particularly insight were strongly associated with appreciation.
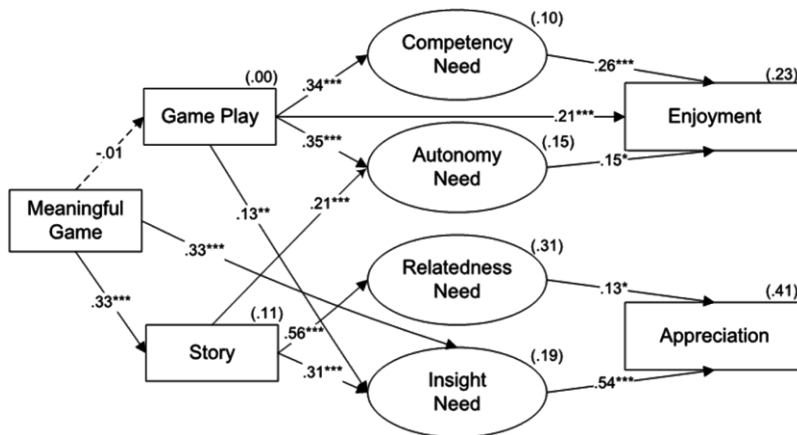
Recollection of Enjoyable and Meaningful Video Games

Our first research question investigated whether participants could recall discrete video games that they could classify as eliciting feelings of meaningfulness as readily as they could recall games that elicited feelings of enjoyment. Here, our data suggest that nearly everyone in the fun question-prompt condition was able to recall an enjoyable video game (nearly 98%), and over 70% of those in the meaningful condition were able to recall a meaningful game when prompted. These patterns suggest that games eliciting meaningfulness do exist, but these meaningful experiences are perhaps less accessible than enjoyable ones. As discussed in the introduction to this article, although examples of meaningfulness as an intended outcome of video games may have been present to some ex- tent for many decades, it now appears to be picking up momentum to include not only role-playing games but also action-oriented titles. These trends, along with the industry's espoused search for the "Shakespeare of video games" (the theme of the keynote speech on game narrative at the industry-wide 2013 Game Developers Conference), suggest that meaningful video games, and meaningful video game experiences, are likely to become more readily available to audiences. For example, the aforementioned Sony release *Heavy Rain* was lauded as a critical and economic success despite the game's focus on rich narrative experiences over fast action. Even more action-oriented violent video games— including the infamous *Grand Theft Auto* series— have begun to focus as much on developing morally complex characters and emotionally engaging storylines as they do on developing thrilling gunfights and death-defying car chases (Limperos, Downs, Ivory, & Bowman, 2013); a similar shift is seen in some of the first-person shooters mentioned earlier in

the manuscript. In fact, many of the games that elicited feelings of meaningfulness in our participants also elicited feelings of enjoyment in others. For example, *Call of Duty: Black Ops* and *Fallout 3* among many others were listed as both as an enjoyable and meaningful game. Moreover, analysis of enjoyment and appreciation means within each experimental condition (recollection of an enjoyable compared with a meaningful game) suggested that whereas both types of games were described as highly enjoy- able, appreciation scores were much higher for video games recalled as meaningful. To us, these data suggest that the notion of appreciation—experiencing introspection and self- reflection from playing video games— does not seem to hinder the entertainment experience by introducing more enriching experiences. Given the industry's self-proclaimed movement to- ward more introspective sorts of gaming and data suggesting that this introspection is both recalled and appreciated by gamers, research should continue to investigate this evolving aspect of the video game experience (Elson, Breuer, Ivory, & Quandt, 2014).

The Influence of Game Attributes on Experiences Predictive of Enjoyment and Meaningfulness

Having established that a large percentage of individuals are able to recall a meaningful game experience (albeit less frequently than an enjoy- able one), our article shifts to examining a comprehensive model linking game characteristics (i.e., gameplay, story) to the satisfaction of intrinsic needs as experiences predictive of both enjoyment and appreciation. In part based on Tamborini et al.'s (2010) assertions as to the role of competence, autonomy, and relatedness in predicting enjoyment experiences from gaming, our data identify an additional need— insight— that serves as an important predictor of appreciation experiences. Specifically, our model

specified dimensions of relatedness and insightfulness to be the primary predictors of heightened appreciation, and dimensions of competence and autonomy to be the primary predictors of enjoyment (see Figure 2). These specified paths are in line with theorizing on enjoyment and appreciation. For example, the idea that enjoyment would be predicted by competence and autonomy is consistent with re- search suggesting that flow states are predictive of gamer enjoyment (Sherry, 2004). Given that flow is thought to reflect the optimal balance of challenge and individual skill (Csikszentmihalyi, 1990), games that satisfy users' needs for choice and competence should be particularly enjoyable. Likewise, appreciation is thought to reflect gratifications related to contemplations regarding life meanings, questions of virtue, and the human condition (Oliver & Bartsch, 2010, 2011). As such, it makes sense that perceptions that the game experience provided greater insight would be particularly important to the experience of appreciation, as would feelings of closeness to the characters in games and the challenges and struggles they may face.

In addition to identifying the need satisfactions that play important roles in gamers' experiences of enjoyment and appreciation, this model also identified the game characteristics that may be particularly consequential in this regard. First, this model showed that gameplay not only led to greater satisfaction of competency and autonomy, but also had a direct relationship with enjoyment. This finding likely reflects, in part, the idea that various aspects of gameplay (e.g., strong programming in the game, motion controllers, etc.) facilitate feelings of mastery and skill in the gaming context. At the same time, though, the direct effect of gameplay on enjoyment suggests additional functions that gameplay may have, such as enhanced feelings of inter- activity or experiences of presence (Lee, 2004). In contrast, the role of story in the games was strongly predictive of need fulfillment of both relatedness and insight. These relationships are consistent

with the idea that narratives frequently provide individuals with feelings of closeness with characters and insight into life meanings and human connection. However, we note that there is a direct path from naming a meaningful game and higher scores on insight. This path suggests that additional elements of games (aside from strong narratives) may be consequential to appreciation. Therefore, future research may find it profitable to examine additional elements of games (e.g., social interaction, sound, etc.) that users may experience as meaningful.

Implications for the Gaming Industry

The data reported in the manuscript suggest that video games can indeed be more than simple hedonic pleasures. As a form of entertainment, it appears that the video-game medium has continued to evolve—as many industry insiders and fans have claimed—to embrace a more humanistic experience that frequently focuses on prolonged and sustained user immersion and involvement into a complex and emotionally rich narrative space. Indeed this evolution is in line with popular culture theorist Stephen Johnson's (2005) assertions about the progression of entertainment culture in general, suggesting that what was once viewed as a mild (and potentially maladaptive) distraction is rap- idly morphing into a more complete (and potentially adaptive) emotional experience. Our data suggest that this seeming shift in production norms for the video-game industry is both acknowledged and desired by the gaming public, and feelings of meaningfulness gleaned from video game play seem to be gratifying to users and not disruptive to overall feelings of entertainment. This is not to suggest that all video games need or should be designed with meaningful storylines, but it does suggest that many gamers may be interested in experiencing the same sort of feelings of insight and introspection while playing a video game as they have when consuming other forms of similarly valenced entertainment media such as books

or Hollywood tearjerkers. Further, we believe that games may provide an enhanced opportunity for experiencing appreciation, as they allow individuals to become further engrossed in these narratives through their own active player agency. In other words, in a video game, if somebody is crying, it's likely because the player both caused it and can solve it.

Moreover, our data highlight discrete dimensions of video games better suited for the elicitation of enjoyable or meaningful experiences, the former being more associated with game- play and the latter being more associated with narrative development. Although these findings might seem obvious on the surface, such data suggest that games aiming to elicit one response or the other should carefully consider the main focus of the game—put another way, a focus on "video" as compared with a focus on "game." For example, popular discussions of *Heavy Rain* often focus far more on the game's narrative rather than its game play mechanics. In fact, many commentators lamented that the game at times felt more like an interactive movie than a video game, yet these lamentations did not seem to diminish the game's critical and economic success.

Limitations and Future Research Direction

Our data should be considered with its methodological limitations in mind. Perhaps the most important limitation to consider is although theoretical arguments do suggest that the model presented in Figure 2 should be a causal one, causality cannot be determined in the current study, as the survey instrument used did not provide an opportunity to establish a temporal causal ordering between our variables. To this end, our empirical model should be replicated in a controlled laboratory setting so that the causal influences of game mechanics and need satisfaction on both enjoyment and appreciation can be determined. Looking at open-ended responses could

help inform the specific aspects of game-play mechanics such as sound and story that might be fruitfully manipulated in experimental con- texts. Likewise, game elements that provide individuals with salient moral lessons or that focus on questions of human virtue may be usefully used as a means of inducing satisfaction of insight needs. Extended further, research might consider other elements of video game play and their unique role in the satisfaction of needs associated with enjoyable or meaningful video game experiences, such as the theoretical links between social presence, character attachment (Lewis, Weber, & Bowman, 2008), and the relatedness and insight needs, and associations between flow experiences (Sherry, 2004) and the satisfaction of competence and autonomy needs. The potential links between character attachment and relatedness and insight needs may be particularly fruitful, as past research (Bowman, Schultheiss, & Schumann, 2012) has found different types of attachment to be associated with pro- and antisocial gameplay styles. It seems reasonable to suggest that prosocial gameplay might be more associated with meaningful gaming experiences (e.g., learning and understanding the narrative space of game) and antisocial gameplay might be more associated with hedonic gaming experiences (e.g., mastery of game controls and challenges). In general, such extensions could work to integrate other theories of gaming into a larger understanding of the entertainment experiences resulting from play.

Regarding our experimental manipulations of recalling a "fun" or "meaningful" game, respondents were intentionally not given a conceptualization of either variable, which resulted in a great deal of variance in terms of the different genres and types of games actually listed. We chose to leave the definition of these experiences up to individuals out of concern that too narrow a definition of each might restrict one's ability to quickly recall a video game fi into either category. However, this approach may have resulted in too much fluctuation in how individuals internalized both

concepts. Future work examining the specific games recalled by participants and content analyzing common themes within gaming genres and types may help elucidate the unique content and game-play characteristics that are consequential in eliciting feelings of enjoyment and appreciation. However, despite the variation undoubtedly present in understandings of meaningful and fun games, the consistent patterns of our findings and their predictive power in explaining variance in enjoyment and appreciation suggest a good deal of commonality as to what constitutes a meaningful or fun experience—particularly given the diversity of our sample.

Finally, this study argues for the notion of insight as an important psychological need rooted in eudiamonia and separate from those already identified in SDT. As such, additional data are needed to replicate the measure proposed and tested here.

Conclusion

We began our article with a recognition that popular conceptualizations of games frequently stress their hedonistic gratifications. This study illustrates that games also hold promise of providing individuals with experiences that are meaningful and appreciated. Although this direction in gaming may still be evolving, our work suggests that the gaming industry may find this to be a particularly fruitful avenue for development. Not only do meaningful games appear to be as enjoyable as fun games, they also appear to provide users with feelings of added insight. Indeed, as one game reviewer noted, recent game releases have featured a number of more serious and insightful games, signifying that the shift toward meaningful gaming experiences may be gaining momentum: "Between delving into complex issues not often discussed in games, and evolution in the way gameplay is used to strengthen bonds be- tween players and characters, the future of

misery-inducing games is looking strong" (Clark, 2012, concluding section, para. 6). As such, we hope that this initial exploration will pave the way toward greater development of such meaningful gaming experiences, as we believe that doing so will not only help to dispel the characterization of games as more shallow forms of entertainment, but also provide players with experiences that are not only enjoyable but also potentially deeply enriching.

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