The role of cognitive and affective challenge in entertainment experience

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Communication Research

Bartsch, A. & Hartmann, T. (in press). The role of cognitive and affective challenge in entertainment experience. Manuscript accepted for publication in *Communication Research*

Abstract

Recent approaches in entertainment research highlight the distinction between hedonic (pleasure-seeking) and eudaimonic (truth-seeking) entertainment experiences. However, insights into the underlying processes that give rise to these different types of entertainment experiences are still scarce. This study examines the assumption that individuals' entertainment experience varies by the level of cognitive and affective challenge posed by the media content. We tested this assumption in a 2x2 experiment in which we examined the effects of cognitive and affective challenge on individuals' entertainment experience (fun, suspense, and appreciation). Cognitive and affective challenges resulted in stronger appreciation of the movie, affective challenges resulted in heightened suspense, whereas the absence of both cognitive and affective challenges fostered the experience of fun. These results further the theoretical understanding of hedonic and eudaimonic entertainment in that they support the idea that fun is linked to recreation, whereas appreciation is linked to cognitive challenge and personal growth.

Keywords: hedonic and eudaimonic entertainment, cognitive and affective challenge, appreciation, fun, suspense

The Role of Cognitive and Affective Challenge in Entertainment Experience

Audiovisual entertainment media including movies and television are often considered passive “lean back media” as opposed to more challenging “lean forward media” such as, for example, the computer or the Internet (Nielsen, 1999). The apparent lack of activity in users of audiovisual media has lead researchers to assume that these media are mainly used to relax and recover from the activities and challenges of everyday life (Anderson, Collins, Schmitt & Jacobvitz, 1996; Brosius, Rossmann, & Elnain, 1999; Reinecke, Klatt, & Krämer, 2011; Reinecke, Hartmann, & Eden, 2014). The notion of passive “lean back media” does certainly apply to a large share of audiovisual entertainment fare. However, as we will argue in this paper, considering entertainment as merely passive consummatory behavior would oversimplify the complexity of individuals' viewing motivations and experiences. For example, film viewers often seem to be attracted to content that is perceived as meaningful, moving and thought-provoking (Oliver & Bartsch, 2010; Oliver & Hartmann, 2010; Oliver & Raney, 2011). Moreover, entertainment consumption has been linked to experiences of competence and autonomy (Tamborini, Bowman, Eden, Grizzard, & Organ, 2010), contemplation of moral dilemmas (Lewis, Tamborini, & Weber, 2014; Tamborini, Grizzard, Bowman, Reinecke, Lewis, & Eden, 2011), as well as deeper reflection about the characters, and re-evaluation of one's own life (Wirth, Hofer, & Schramm, 2012; Hofer, Allemand, & Martin, 2014). Thus, beneath the surface of apparent inactivity, it seems that users of audiovisual entertainment media may be actively engaged in dealing with cognitive and affective challenges posed by the media content.

Recent theory and research have drawn attention to non-hedonistic viewing motivations, suggesting that entertainment media are used by individuals not only to relax and to and improve their mood but also to experience a sense of challenge, meaningfulness, and personal growth (Cupchik, 1995; Oliver & Bartsch, 2010; Oliver & Raney, 2011; Hofer et al., 2014; Knobloch-Westerwick, Gong, Hagner, & Kerbeykian, 2012; Tamborini et al.,

2010; Vorderer & Ritterfeld, 2009; Wirth et al., 2012). For example, Oliver and Raney (2011) distinguished between two types of viewing motivations in movie audiences that they labeled *hedonic motivations* ("It's important to me that I have fun when watching a movie,") and *eudaimonic motivations* ("I like movies that challenge my way of seeing the world"). In a similar vein, Cupchik (1995) described two modes of aesthetic experience: a *reactive* mode that is characterized by fleeting feelings of positive valence and arousal, and a *reflective* mode associated with more profoundly meaningful emotions and self-reflectiveness.

However, despite a growing body of research and theorizing concerning individuals' ability to derive gratification from their active mental engagement with audiovisual media, research that directly addresses the influence of cognitive and affective challenges on individuals' experience of entertainment is currently lacking. Therefore, the purpose of the present research is to examine the effect of cognitive and affective challenges on three key aspects of the entertainment experience, that is, fun, appreciation, and suspense.

The Entertainment Experience

Traditionally, scholars have argued that individuals feel entertained by media content to the extent that they have fun and enjoy the cognitive and affective states that are elicited during media exposure (Zillmann, 2003; Vorderer, Klimmt & Ritterfeld, 2004). According to mood management theory (Zillmann, 1988), entertainment consumption serves to induce lighthearted and cheerful states that are characterized by positive valence and balanced arousal, and help distract the person from negative thoughts. The conceptualization of entertainment-as-pleasure is also echoed in affective disposition theory (Zillmann & Cantor, 1977). This model argues that the greatest level of enjoyment is experienced when good outcomes occur for liked characters and when bad outcomes befall disliked characters. The concept of excitation transfer (Zillmann, 1996) explains how empathic distress experienced during suspenseful episodes when audiences are made to fear bad outcomes for liked characters can contribute to enjoyment, nevertheless. For example, viewers of a suspenseful

movie may enjoy the resolution of empathic distress at the happy end when residual arousal from the distressing episode combines with a positive reappraisal of the situation, giving rise to strong positive feelings (e.g., Andrade & Cohen, 2007; Zillmann, 1996). As evident from these examples, entertainment has mainly been conceptualized in terms of hedonic affect regulation, that is, the maximization of pleasure and the minimization of pain. This hedonic perspective on media entertainment focuses on carefree consummatory behavior, and on the passive role of viewers who devote themselves to an enjoyment-inducing media stimulus (as reflected in the metaphor of the "couch potato;" see Reinecke et al., 2014).

The conceptualization of entertainment as a purely hedonic experience is intuitive and compelling. However, it may not explain the full spectrum of motivations for entertainment consumption. For example, from a hedonic perspective, entertainment research would be hard pressed to explain why audiences voluntarily expose themselves to sad movies like *Schindler's List*, to tragedies with no happy endings, like *Titanic* or to anti-war-movies like *Grave of the Fireflies* or *Waltz with Bashir*. Viewers may be able to partly reverse the negative valence of affective states such as sadness or grief through cognitive reappraisal (see, Bartsch, Vorderer, Mangold, & Viehoff, 2008; Hofer & Wirth, 2012). But the question remains why audiences should be motivated to expose themselves to tragic entertainment, and to make a cognitive effort to reappraise their negative feelings, when purely enjoyable entertainment fare that does not require such efforts is easily available at all times.

Oliver (2008) suggested that viewers may actively seek out sad movies to make meaningful experiences, and to grow as a person (e.g., by gaining better insight about themselves and the world). Based on the distinction in ancient philosophy between hedonic and eudaimonic happiness (i.e., happiness derived from pleasure vs. happiness derived from meaning and insight, Aristotle, trans. 1931), Oliver and Raney (2011) proposed to conceptualize this more serious type of entertainment experience as a form of eudaimonic gratification. (For related conceptualizations of eudaimonic well-being in the field of social

psychology see Ryan, Huta, & Deci, 2006; Ryff, Singer, & Love, 2004; Waterman, 1993). In line with this concept of eudaimonic viewing motivations, early research by Tesser, Millar, and Wu (1988) not only identified motivations akin to hedonic concerns (e.g., self-escape, entertainment), but also identified a motivational factor "self-development" that was characterized by individuals' interest in viewing films to experience strong emotions and to understand how others think and feel. In a more recent study on lessons learned from meaningful movies, Oliver and Hartmann (2010) found that viewers reflected on the value and fleetingness of life, the importance of human virtue and endurance, and the inevitability of sadness, cruelty and pain as part of the human condition. In their analysis of eudaimonic entertainment experiences, Wirth et al. (2012) found five dimensions of eudaimonic gratification including 1) self-acceptance and purpose in life, 2) autonomy, 3) competence/ personal growth, 4) relatedness, and 5) activation of central values.

These results suggest that viewers may willingly engage in cognitive and affective challenges posed by media content, because such challenging experiences promise important insights about oneself and the world (Bartsch, Kalch, & Oliver, 2014; Eden, Hartmann, & Reinecke, in press; Knobloch-Westerwick et al., 2012; Oliver & Hartmann, 2010). In contrast to the hedonic perspective that applies to light, superficial, or pleasurable media experiences, the eudaimonic perspective focuses on content that is more appropriately characterized as heavy, profound, or serious. Furthermore, the eudaimonic perspective on media entertainment differs from the hedonic perspective in that it highlights the active role of viewers in seeking out challenges for the sake of personal growth.

In a recent set of studies, Oliver and Bartsch (2010) combined both perspectives and offered an integrated conceptualization of entertainment experience. They provided evidence of and measurement for three broad types of entertainment gratifications: fun, appreciation, and suspense. In their study, the fun factor reflected carefree enjoyment of media content (e.g., "I had a good time watching this movie"), echoing the core idea of the hedonic

approach that entertainment serves to provide its audiences with pleasurable experiences. A second factor, “appreciation” emerged that was characterized by “the perception of deeper meaning, the feeling of being moved, and the motivation to elaborate on thoughts and feelings inspired by the experience” (Oliver & Bartsch, 2010, p. 76). This appreciation factor is consistent with the core idea of the eudaimonic approach, that entertainment can serve as an opportunity for deeper reflection and personal growth. In addition, suspense emerged as a unique dimension of entertainment experience. The suspense factor reflected the tension and excitement experienced during media exposure (”I was at the edge of my seat while watching this movie”). This factor is akin to more complex forms of hedonic entertainment that involve the buildup and resolution of suspense, as described for example by excitation transfer theory (Zillmann, 1996).

Although fun and suspense are often theoretically subsumed under the common rubric of enjoyment or hedonic entertainment, the empirical emergence of two independent factors in Oliver and Bartsch's (2010) research suggests that audiences make a qualitative distinction between these two types of entertainment experiences. A similar three-factor structure including “light,” “serious” and “action-oriented” films was found by Hall (2005) in her factor analysis of film viewers' genre preferences. One reason why suspense may be perceived to differ from both fun and appreciation is that, unlike the lighthearted fun factor, suspense involves an element of emotional challenge, but unlike the appreciation factor, suspense-related challenges are mainly affective in nature and do not involve the type of cognitive challenges that serve to stimulate processes of deeper reflection and insight in the case of eudaimonic appreciation.

As several authors have noted (e.g., Carroll, 1990; Zillmann, 1996), suspense involves an element of cognitive uncertainty. However, in the typical suspenseful narrative, the uncertainty about imminent negative outcomes for liked protagonists is resolved at the happy end (Zillmann, 1996). Thus, no cognitive effort is required from the part of the viewer to

resolve this suspense-related type of uncertainty. Rather, the challenge of suspense seems to reside in the affective reaction of fearful apprehension that viewers need to endure until the uncertainty about story outcomes is resolved (Zillmann, 1996).

The experience of eudaimonic appreciation, by contrast, has been linked to challenges on both affective and cognitive levels. Eudaimonic entertainment experiences are typically associated with a need for meaning-making aroused by stories that feature human poignancies, justice violations, or moral dilemmas (Bartsch & Mares, in press; Lewis et al., 2014; Oliver & Hartmann, 2010). Especially in the absence of just or happy endings, viewers are not only challenged to endure negative affect elicited by the media content but are also challenged to engage in a process of meaning-making to resolve cognitive conflict and to restore their threatened belief in a just and meaningful world (Anderson & Kay, 2013; Bartsch & Mares, in press; Lewis et al., 2014).

The current study aims to examine the contribution of affective and cognitive challenges to these three different types of entertainment experiences described by Oliver and Bartsch (2010). While there is evidence from several studies that entertainment audiences make a clear distinction between experiences of fun, suspense, and appreciation (Bartsch, 2012; Oliver & Bartsch, 2010), the explanatory mechanisms behind these three types of entertainment experiences are not sufficiently understood. The concept of entertainment media as a source of cognitive and/or emotional challenge seems to offer a promising theoretical explanation, as well as an opportunity to establish discriminant validity between these three types of entertainment experience. As explained in the following section, experiences of fun likely arise in the absence of both affective and cognitive challenges; experiences of suspense arise from the presence of affective challenges; and experiences of appreciation arise from the combined presence of cognitive and affective challenges.

Challenging Media Content and Entertainment Experience

Hartmann (2013) recently proposed a theoretical framework for explaining the role of

different types of challenges in individuals' entertainment experience (see also, Eden et al., in press). According to this framework, entertaining media content differs in the extent to which it presents the audience with cognitive and affective challenges (i.e., cognitive and affective demands that require self-regulatory behavior). Cognitive challenge implies that media content is difficult to process, because it is either complex or opposes one's intuitive dispositions. Research inspired by Berlyne (1971; e.g., Kreitler, Zigler, & Kreitler, 1974; Roberts, 2007) demonstrates that visual stimuli are more complex if they contain a greater number of elements (e.g., characters, scenes, plots) but less structure or consistency, and if they are novel to users or surprise their expectations. Similar structural and content features underlying complexity have been suggested for audio-visual stimuli such as movies or TV shows (Lee & Lang, in press; Mittell, 2012). In general, complexity arises from the difficulty of integrating new information into existing cognitive schemas (Silvia, 2005). For example, movies like *Babel* or *Inception* are challenging in that they consist of several interrelated stories, requiring viewers to keep track of multiple plot lines with interdependent outcomes. Further sources of cognitive challenge can result from dissonant information, that is, information which is inconsistent with existing attitudinal structures or moral intuitions, and is therefore difficult to integrate (Lewis et al., 2014; Tamborini et al., 2011). For example, a movie may be perceived as cognitively challenging, because it presents insights that are not in line with the viewer's worldview, or because it presents moral dilemmas where some of the viewer's intuitive moral values need to be violated so that moral values in another domain can be fulfilled.

Affective challenges result from the experience of intense negative affect (see Apter, 1992; Rozin, 1999). For example, suspenseful or tragic movies often portray the struggle of a likable protagonist with distressful situations, thus eliciting empathic distress in the viewer (Zillmann, 1996). Moreover, graphic portrayals of blood, gore and other threatening stimuli may elicit intense levels of fear or disgust, for example in the case of horror movies (Cantor

& Reillly, 1982). Theories of emotion regulation (e.g., Gross, 2002) distinguish between two possible strategies of dealing with the affective challenge presented by experiences of intense negative affect. Emotion regulation can either take the form of response-focused regulation, which serves to suppress physiological and behavioral responses, or it can take the form of antecedent-focused regulation, which involves cognitive reappraisal of the situation in more positive and meaningful ways. Thus, in the case of response-focused regulation, the affective challenge is dealt with at the affective level, whereas in the case of antecedent-focused regulation the affective challenge is resolved on a cognitive level. This second strategy of turning affective challenges into cognitive challenges has been found to be particularly functional in terms of promoting sustainable well-being and personal growth (Gross, 2002).

A common characteristic of both cognitive and affective challenges that constitutes their conceptual core is that they require the investment of self-regulatory effort (Baumeister et al., 1998). For example, when watching a movie with a complex or conflicted storyline, viewers need to regulate their attentional focus and need to invest cognitive effort to comprehend the story. When watching a frightening horror movie, viewers need to regulate intense negative emotions, or when watching a tragic movie, viewers need to engage in cognitive emotion regulation to find the silver lining that makes the story meaningful and thus less depressing. In general, the more intense the cognitive and affective challenges posed by media content, the more effortful it is for the viewer to process this content.

Against the background of these considerations, different aspects of entertainment experience may be explained based on the intensity and type of challenges that viewers experience when processing media content. In this context, Hartmann (2013) proposed that entertainment experiences can result from the satisfaction of two psychological mechanisms, namely recreation and psychological growth (see also Tamborini et al., 2010, Vorderer, 2011). Recreation is linked to the maintenance of important physiological resources such as volitional energy. Accordingly, recreation is expected to result from the processing of

entertainment content that is not or only mildly challenging. Cognitive and affective processing of such content is experienced as smooth, and pleasurable (Cabanac, Pouliot, & Everett, 1997; Silvia, 2005), and no self-regulatory effort is required. Most lighthearted comedies, feel-good movies, or romances seem to fall into this "light" category of film genres (see, Hall, 2005). Such movies usually have clear storylines with predictable happy endings, and include little irritating or emotionally disturbing content. Given that mildly challenging media content can be processed with minimal investment of self-regulatory resources, the resulting experience can be described as carefree or lighthearted hedonic entertainment, akin to the fun factor observed by Oliver and Bartsch (2010). In a similar vein, Lewis et al. (2014) argue that enjoyment results from the quick, intuitive processing of content that satisfies the user's salient needs and moral intuitions without cognitive conflict. Thus, it can be assumed that movies that present a low level of *cognitive* challenge receive higher ratings of fun than movies that present a high level of cognitive challenge (H1a). Furthermore, it can be assumed that movies presenting a low level of *affective* challenge receive higher ratings of fun than movies presenting a high level of affective challenge (H1b).

In addition to recreation, entertainment consumption may also be motivated by individuals' search for psychological growth, which is related to the core idea of the eudaimonic approach in entertainment research (Oliver, 2008; Tamborini et al., 2010; Vorderer & Ritterfeld, 2009; Wirth, et al., 2012). The concept of psychological growth implies that individuals gain a deeper, more differentiated, and more consistent understanding of themselves and the world (Oliver & Hartmann, 2010; Deci & Ryan, 2000; Hofer et al., 2014; Wirth et al., 2012). In order to grow psychologically, individuals need to master cognitive challenges that involve successful integration of novel, complex and dissonant information. Moreover, affective challenges can serve as an additional stimulus for meaning-making and psychological growth when antecedent-focused regulation strategies like cognitive reappraisal are used to deal with those challenges (Gross, 2002). Cognitive and

affective challenges posed by media content can offer opportunities for such experiences of psychological mastery and growth without exposing the person to real-world threats that often accompany challenging situations. For example, viewers of more serious movie genres such as dramas or documentaries typically reported that they learned something meaningful about their life, or that a movie broadened their horizon (Oliver & Hartmann, 2010). In a related vein, Oliver and Raney (2011) found that individuals' eudaimonic film viewing motivations were associated with higher levels of need for cognition, and need for affect, suggesting that eudaimonic appreciation typically arises from viewers' engagement with affectively challenging and thought-provoking content. Thus, it can be argued that movies presenting a high level of cognitive challenge receive higher ratings of appreciation than movies presenting a low level of cognitive challenge (H2a), and that movies presenting a high level of affective challenge will receive higher ratings of appreciation than movies presenting a low level of affective challenge (H2b).

Even in the absence of cognitive challenges or cognitive regulation strategies, affective challenges might be sought by entertainment audiences as an opportunity for mastery experiences at the level of response-focused emotion regulation. The ability to keep responses of intense arousal and negative affect under control may result in a sense of mastery and self-control that is intrinsically rewarding for media users (Tamborini, 1991; Wirth & Schramm 2007). Suspenseful entertainment experiences likely result from these types of purely affective challenges that can successfully be mastered at the level of response-focused emotion regulation. As noted above, suspenseful entertainment does not require cognitive effort to resolve the suspense-eliciting uncertainty about possible negative outcomes for liked protagonists, but response-focused emotion regulation skills are challenged to a substantial degree. Some movies may be affectively challenging, simply by featuring extremely gory or disgusting scenes (Cantor & Reillly, 1982; Tamborini, 1991). In most cases, however, affectively challenging movies involve dramatic narratives that feature

the struggle of likable protagonists with distressful situations—a type of content that tends to elicit intense negative emotions in viewers (Zillmann & Cantor, 1977). Such experiences of empathic distress constitute a core theoretical element in conceptualizations of suspense (Zillmann, 1996; Vorderer, Wulff, & Friedrichsen, 1996). Therefore, we expected that movies that present a high level of affective challenge receive higher ratings of suspense than movies that present a low level of affective challenge (H3).

To summarize, our set of hypotheses suggests that the three types of entertainment experiences observed by Oliver and Bartsch (2010) including fun, appreciation and suspense, can be distinguished based on the role that cognitive and affective challenges play in stimulating these experiences. Fun can be characterized as an effortless, recreational type of entertainment experience that arises in the absence of both affective and cognitive challenges. Suspense can be described as a type of entertainment experience that arises from the mastery of affective challenges that can be dealt with at a purely affective level using response-focused emotion regulation strategies. Finally, appreciation can be characterized as a growth-oriented type of entertainment experience that is challenging on both affective and cognitive levels. Cognitive effort is not only required to deal with the complexity and moral conflict of stories but also as part of cognitive emotion regulation strategies to master affective challenges that cannot be resolved on a purely affective level.

Method

Overview

To test this set of hypotheses, the present study examined the influence of cognitive and affective challenge on individuals' entertainment experience using a 2 x 2 (cognitive challenge x affective challenge) design. Participants were randomly assigned to rate a film from one of four lists of movies that were pre-tested to represent different combinations of cognitive and/or affective challenge.

Stimuli and Pretest

The movies included in the four conditions were selected based on pretest results. A pretest sample of 58 students at a German university (21 male, 37 female; age: 18-25, *M* = 19,48, *SD* = 1,41) each rated a list of 40 film titles representing a broad variety of film genres including comedy, action, thriller, horror, drama, and documentary. The films were selected based on box office success within their genre to maximize the likelihood that participants had seen them. Participants of the pretest indicated whether they had seen the movie, and categorized the movies they had seen as either presenting 1) "both intellectual and emotional challenge," 2) "intellectual challenge only," 3) "emotional challenge only," or 4) "neither intellectual nor emotional challenge." To be included in the film lists for the main study, movies had to be well-known among the pretest sample, and a majority of ratings had to fall into the target category of perceived challenge.

Two types of movies received frequent ratings in the category "both intellectual and emotional challenge," namely dramas and brainy thrillers. The following movies were selected for the main study (with the percentage of "both intellectual and emotional challenge" ratings in parentheses): *Schindler's List* (84%), *A Beautiful Mind* (75%), *Seven* (77%), and *City of God* (73%). These movies had two characteristics in common. First, they were emotionally challenging in that they portrayed the struggle of protagonists with overwhelming adversities such as the Holocaust (in *Schindler's List*), gang warfare (in *City of God*), mental illness (in *A Beautiful Mind*), or the machinations of a psychopath (in *Seven*). Second, these movies were cognitively challenging in terms of blurring the lines between good and evil. The main character in *Schindler's List* evolves from a profiteer of Jewish forced labor under the Nazi regime into an altruistic life-savior. The main protagonist of *A Beautiful Mind* comes to realize that the real enemy is his mental illness. The detective in *Seven* is driven to commit revenge murder by the psychopath he is chasing. *City of God* deals with the difficulty of staying a good person in an environment ruled by violence and corruption. Thus, high levels of empathic distress came along with cognitive conflict, moral

ambiguity and a lack of justice-restoration, a type of content that is cognitively challenging to process (Hartmann, 2013; Lewis et al., 2014; Tamborini et al, 2011).

All movies with predominant ratings in the category “emotional challenge only” were horror films. The following movies were selected for the main study (with the percentage of “emotional challenge only” ratings in parentheses): *Jaws* (66%), *A Nightmare on Elm Street* (64%), *Saw* (58%), and *Halloween* (52%). One similarity between these movies were gory portrayals of violence. In the perception of the pretest sample, action movies that featured more sanitized depictions of violence did not seem to pose a comparable level of affective challenge. In addition, these horror movies did not feature predictable happy endings (except for some final survivors)—a narrative structure that should maximize empathic distress according to Zillmann (1996). Thus, the high levels of affective challenge only ratings seemed to reflect a combination of distress-eliciting narratives and graphic gore.

“Neither intellectual nor emotional challenge” ratings were most frequent in the case of comedies. Action movies were frequently rated in this category as well, however, the pattern of ratings was not as clear-cut as in the case of comedies. The following movies were included in the main study (with the percentage of “neither intellectual nor emotional challenge” ratings in parentheses): *American Pie* (70%), *The Devil Wears Prada* (70%), *Manitou's Shoe* (68%) and *Bruce Almighty* (62%). These movies played with the comic exaggeration of stereotypes about sexually frustrated teenagers (in *American Pie*), the lunacy of the fashion world (in *The Devil Wears Prada*), male power fantasies (in *Bruce Almighty*), or genre routines of western films (*Manitou's Shoe*). The characters experience a number of setbacks and embarrassing situations but are never seriously harmed. Their aspirations and fails are rather stereotypic and predictable, thus providing the viewer with a reassuring sense of obviousness and ironic distance.

“Intellectual challenge only” ratings were generally low for all fictional movies (less than 15%). However, a set of documentaries met or approached the criteria for inclusion in

this condition. The following films were included in the main study (with the percentage of "intellectual challenge only" ratings in parentheses): *Darwin's Nightmare* (44%), *Supersize Me* (42%), *An Inconvenient Truth* (33%), *What the Bleep Do We Know!?* (33%). These documentaries were similar in that they addressed unsettling and controversial issues that lack simple, unconflicted solutions, including climate change (in *An Inconvenient Truth*), environmental and social damage (in *Darwin's Nightmare*), health risks of fast food diet (*Supersize Me*), and the mind-matter relationship (*What the Bleep Do We Know!?*). Another similarity of these films was the absence of fictional dramatization. Thus, despite their dealing with problematic, cognitively challenging issues, the narrative elements that typically elicit empathic distress in the viewer were missing in these films.

Overall, the pretest results indicate that perceived levels of affective and cognitive challenge were systematically related to genre-typical characteristics that have been identified in prior research and theorizing as elicitors of challenging media experiences—including the level of graphic gore and empathic distress elicited by the narrative, character and plot complexity, cognitive dissonance and moral conflict (Cantor & Reilly, 1982; Eden, Hartmann, & Reinecke, in press; Hartmann, 2013; Lee & Lang, in press; Lewis et al., 2014; Mittell, 2012; Zillmann, 1996). It is important to note, however, that to a certain extent the experience of affective and cognitive challenge was in the eyes of the beholder. For example, in the case of action films, pretest ratings often disagreed whether or not these movies were affectively challenging. Thus, the experience of affective and cognitive challenge is not exclusively a function of media content, it also depends on the viewer. It is therefore important to keep in mind that levels of affective and cognitive challenge observed in the pretest may generalize to similar student samples like the one employed in the main study (see below), but not necessarily to other, non-student samples.

Sample and Procedure

Two hundred and nine students from an independent sample at the same university in

Germany (99 males, 110 females; age: 18-31, M = 23.08, SD = 2.84) participated in the main study. As an incentive, participants took part in a lottery for gift certificates. After reading an informed consent page, participants were randomly assigned to one of four different versions of the online questionnaire that included the movie titles selected in the pretest to represent different levels of cognitive and affective challenge. The type of movies represented in each film list was covered up by including an equal number of fake titles suggestive of other film genres. Participants were asked to select a film among the list that they liked best. Those who had not seen any of the films they were assigned to were screened out and redirected to another study. After selecting a film, participants were asked to rate their experience of the film from memory.

Measures

Fun, suspense, and appreciation. Ratings of fun, suspense and appreciation suspense were recorded on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) using the scales of Oliver and Bartsch (2010): *fun* (3 items, e.g., "It was fun for me to watch this movie," "I had a good time watching this movie," α = .79, M = 3.97, SD = 0.70), *appreciation* (3 items, e.g., "The movie was thought-provoking," "I found this movie to be very meaningful," α = .89, M = 3.24, SD = 1.13), and *suspense* (3 items, e.g., "The movie was suspenseful," "I was at the edge of my seat while watching this movie," α = .84, M = 3.28, SD = 0.95). Fun was significantly negatively correlated with appreciation (r = -.28, p < .001) and suspense (r = -.17, p < .05); appreciation was positively correlated with suspense (r = .34, p < .001).

Manipulation check. Two anchored rating scales were used to assess perceived levels of cognitive and affective challenge ranging from 1 (*no intellectual challenge at all*) to 5 (*high intellectual challenge*) and 1 (*no emotional challenge at all*) to 5 (*high emotional challenge*). These rating scales served as manipulation check and were included at the end of the questionnaire to avoid potential effects on other responses.

Demographics. Finally, the questionnaire included basic demographic information (age and gender) and other measures that were unrelated to the present research.

Results

Factor Analysis

To validate the factor structure of movie experiences reflected by the fun, suspense and appreciation scales (Oliver & Bartsch, 2010), a principal components analysis with oblique Promax rotation (Kappa = 4) was performed on the set of nine scale items. This analysis revealed three factors with eigenvalues greater than one (3.60, 1.86, 1.54, .49, ...) that together explained 78% of the variance. After rotation, all primary factor loadings of the scale items were substantial (> .80), and secondary loadings on other factors were generally weak (< .45). Thus, the German version of the fun, suspense and appreciation scales that were used in this study showed good internal consistency and distinctiveness. Reliability analyses using Cronbach's alpha also revealed good internal consistency (all scale alphas > .75, see alpha values reported in measures section).

Manipulation Check

To verify that the movies included in the four film list conditions represented different levels of cognitive and/or affective challenge, we examined differences between the four conditions in terms of the two rating scales that served as manipulation checks (i.e., “no emotional challenge at all—high emotional challenge,” and “no intellectual challenge at all—high intellectual challenge”). A repeated measures ANOVA revealed the expected Ratings X Condition interaction, Wilks’ $\lambda = 0.73$, $F\ (3, 204) = 25.48$, $\eta_p^2 = .27$, $p < .001$. As shown in Table 1, comparisons between all pairs of conditions supposed to differ in levels of challenge were substantial and significant. Thus, our attempt to create film list conditions featuring different combinations of high vs. low levels of cognitive and affective challenge seemed to be successful.

Main Analysis

All four hypotheses were tested in a single 2 (cognitive challenge high vs. low) X 2 (emotional challenge high vs. low) multivariate analysis of variance and follow-up univariate ANOVAs with the two experimental factors as independent variables, and fun, appreciation, and suspense ratings as dependent variables. The MANOVA yielded significant multivariate main effects for both cognitive challenge, Wilk's $\lambda = .48$, $F(3,202) = 72.92$, $p < .01$, $\eta_p^2 = .52$, and affective challenge, Wilk's $\lambda = .50$, $F(3,202) = 67.45$, $p < .01$, $\eta_p^2 = .50$, as well as a significant multivariate interaction effect of cognitive X affective challenge, Wilk's $\lambda = .94$, $F(3,202) = 4.66$, $p < .01$, $\eta_p^2 = .07$. Details of the results are displayed in Figures 1, 2, and 3.

We assumed that movies presenting a low level of cognitive challenge (H1a), and movies presenting a low level of affective challenge (H1b), would receive higher *fun* ratings than movies that present high levels of cognitive or affective challenge respectively. The follow-up ANOVA of fun ratings yielded a significant main effect of *cognitive challenge* on fun, $F(1, 204) = 17.78$, $p < .01$; $\eta_p^2 = .08$. In line with H1a, participants reported higher fun ratings for movies that presented little cognitive challenge ($M = 4.16$, $SD = 0.69$) as compared to movies that presented a high level of cognitive challenge ($M = 3.79$, $SD = 0.67$). In addition, the ANOVA also revealed a significant main effect of *affective challenge* on fun, $F(1, 204) = 20.57$, $p < .01$; $\eta_p^2 = .09$). In line with H1b, participants reported higher fun ratings for movies that provided a low level of affective challenge ($M = 4.19$, $SD = 0.63$) as compared to movies that provided a high level of affective challenge ($M = 3.78$, $SD = 0.71$). Taken together, these findings confirm hypotheses H1a and H1b. In addition, the ANOVA also yielded a significant cognitive X affective challenge interaction effect on fun ratings, $F(1, 204) = 5.30$, $p < .05$; $\eta_p^2 = .03$). As shown in Figure 1, the highest fun ratings were reported for movies that were neither cognitively nor affectively challenging.

Further, we predicted that movies that present a high level of cognitive challenge (H2a) and movies that present a high level of affective challenge (H2b) would receive higher appreciation ratings than movies that present low levels of cognitive and affective challenge.

As expected, the follow-up ANOVA yielded a strong and significant main effect of *cognitive* challenge on appreciation, $F(1, 204) = 199.07$, $p < .01$; $\eta_p^2 = .49$). Participants reported greater appreciation for movies that presented a high level of cognitive challenge ($M = 4.02$, $SD = 0.86$) as compared to movies that provided a low level of cognitive challenge ($M = 2.46$, $SD = 0.79$). This finding supports H2a. Furthermore, the ANOVA also yielded a significant but weaker main effect of *affective* challenge on appreciation, $F(1, 204) = 6.42$, $p < .05$; $\eta_p^2 = .03$). Participants reported higher appreciation ratings for movies that were affectively challenging ($M = 3.39$, $SD = 1.08$) as compared to movies that presented only a low level of affective challenge ($M = 3.08$, $SD = 1.16$), supporting H2b. The interaction effect of cognitive X affective challenge was not significant, $F(1, 204) = 1.20$, $p = .27$; see Figure 2).

With regard to *suspense,* we assumed that movies that present a high level of affective challenge would receive higher suspense ratings than movies that present a low level of affective challenge (H3). The follow-up ANOVA revealed a strong main effect for affective challenge, $F(1, 204) = 163.88$, $p < .01$, $\eta_p^2 = .45$, whereas cognitive challenge had no significant effect on suspense, $F(1, 204) = 2.25$, $p = .14$. Confirming H3, participants reported higher suspense ratings for movies that presented a high level of affective challenge ($M = 3.87$, $SD = 0.68$) as compared to movies that presented a low level of affective challenge ($M = 2.62$, $SD = 0.75$). The ANOVA also revealed an unexpected interaction effect of cognitive X affective challenge on suspense ratings, $F(1, 204) = 7.58$, $p = .01$, $\eta_p^2 = .04$. As shown in Figure 3, the effect of affectively challenging vs. non-challenging movies on suspense was more pronounced in the case of movies that presented little cognitive challenge.

[Please insert Figures 1, 2, and 3 about here]

Discussion

This study aimed to investigate the role of cognitive and affective challenge as

explanatory mechanisms behind different types of entertainment experience, including fun, suspense and appreciation. Our assumption was that the experience of challenge can either be conducive to or interfere with entertainment experience depending on the type of entertainment experience considered.

In line with our expectations, we found that film viewers experienced the greatest amount of *fun* when watching movies that presented low levels of both cognitive and affective challenge. Moreover, a significant interaction effect of cognitive and affective challenge emerged, indicating that the combined absence of both types of challenges was most conducive to the lighthearted fun aspect of entertainment experience. These findings are consistent with the conceptualization of fun as the hedonistic side of entertainment that is mainly sought for purposes of effortless enjoyment and recreation (Hartmann, 2013; Oliver & Bartsch, 2010; Reinecke et al., 2011).

This logic of effortless enjoyment that characterizes the fun side of entertainment does not apply to the two other types of entertainment experiences, however. Other than fun, suspense and appreciation seemed to arise from the viewers' active engagement with affective and/or cognitive challenges. As predicted in our third hypothesis, the highest level of *suspense* was experienced by viewers of affectively challenging movies. An unexpected interaction effect of cognitive and affective challenge emerged, indicating that the effect of affective challenge on suspense was more pronounced when cognitive challenge was low. Still, the main effect of affective challenge was substantial and significant across both levels of cognitive challenge, supporting our assumption that the suspenseful facet of entertainment experience arises from viewers' engagement with affective challenges.

This finding offers an explanation why action-oriented genres in Hall's (2005) study, and the suspense factor in Oliver and Bartsch's (2010) research emerged as unique dimensions of entertainment experience. Although fun and suspense are often subsumed under the common rubric of hedonic enjoyment (Oliver & Bartsch, 2010; Vorderer et al.,

2004; Zillmann, 1996), suspenseful entertainment seems to be distinct from lighthearted fun in that it presents the viewer with affective challenges. The fact that suspense is usually resolved at the happy end in action-oriented genres may justify the classification of suspenseful entertainment as a (delayed) form of hedonic gratification—as suggested by Zillmann's (1996) theory of excitation transfer. But not all types of suspenseful narratives have happy endings (Tamborini, 1991). Rather, the current findings indicate that suspense is linked to a sense of affective challenge and mastery that may be gratifying in and of itself. Even if viewers of suspenseful entertainment are sometimes aware that they can expect a happy ending, response-focused emotion regulation efforts may be required to keep arousal and behavioral responses under control until the suspenseful episode is resolved. In the absence of predictable happy endings, additional regulation efforts are required to master affective challenges. Some types of content seem to encourage emotional distancing in the viewer by portraying the victimized characters as morally flawed and deserving of their fate—a response-focused regulation strategy that is typically encouraged by the horror genre (Cowan & Brien, 1990; Oliver, 1993) as represented in the “affective challenge only” condition. In the case of tragic narratives that encourage empathic perspective taking rather than emotional distancing, it seems that response-focused regulation strategies need to be complemented with cognitive, antecedent-focused strategies to master the affective challenge. Such a combined experience of affective and cognitive challenge was typical of the second category of suspenseful movies (the “cognitive and affective challenge” condition) including dramas and brainy thrillers that also elicited high levels of eudaimonic appreciation in addition to suspense.

Consistent with Hypotheses 2a and 2b, *eudaimonic appreciation* of entertainment was mainly driven by the experience of cognitive challenge, or by a combination of affective and cognitive challenge. The main effect of cognitive challenge is consistent with the notion that entertainment consumption can be motivated by the pursuit of cognitive challenges,

because—if mastered—such challenges can prompt rewarding experiences of deeper insight, meaning and personal growth (Oliver & Hartmann, 2010; Oliver & Raney, 2011; Wirth et al., 2012). The films in the two cognitively challenging conditions ("cognitive challenge only" and "both cognitive and emotional challenge") dealt with complex and dissonant issues including human hardship, justice violations, and moral conflict—which have been identified as typical content features in the research literature on eudaimonic entertainment (Bartsch & Mares, in press; Oliver & Hartmann, 2010; Oliver & Raney, 2011; Lewis et al., 2014; Tamborini et al., 2011). In addition, some of the documentaries dealt with controversial scientific and political issues, extending the scope to cognitive conflict aroused by complexity and uncertainty of information. The broad spectrum of cognitively challenging content that elicited eudaimonic appreciation, including genres as diverse as dramas, thrillers and documentaries highlights the need for systematic content analysis in this domain.

In addition to cognitive challenge, there was a significant main effect of affective challenge on appreciation. This finding is in line with the assumption that mastering affective challenges can offer additional opportunities for personal growth. For example, the concept of emotional intelligence (Mayer, Salovey, & Caruso, 2001) points to the importance of individuals' ability to understand and regulate negative feelings. In a related vein, entertainment scholars have argued that gaining insights into one's own feelings and affective abilities can be an important motivation for entertainment use (e.g., Cupchik, 1995; Oliver et al., 2014). This type of emotional mastery that can lead to insight and personal growth goes beyond response-focused regulation efforts that are relevant in the case of cognitively undemanding types of suspenseful entertainment such as horror movies. In particular, stories with tragic endings seem to dictate a need for cognitive regulation efforts, because this type of content does not reward simple response-focused regulation strategies such as emotional distancing, or "sitting it through" until suspense is relieved at the happy end.

The concept of cognitive, antecedent-focused emotion regulation (Gross, 2002)

provides an explanation why affective and cognitive challenges are often closely intertwined in eudaimonic entertainment experience. In particular, this combination of cognitive and affective challenge is compatible with psychological theorizing and research on the processes by which individuals strive to make meaning out of affectively negative experiences (Anderson & Kay, 2013; Park, 2010). According to this literature, a need for meaning-making is aroused by negative events that violate individual's belief in a just and meaningful world where bad things don't happen to good people (including the self). In some cases, the cognitive dissonance resulting from unjust negative events is easily resolved by blaming the victim for his or her fate (i.e., emotional distancing), or by focusing on good things that happen to the same person later in life, such that the negative event is "balanced out" (i.e., happy endings). In the absence of victim blame or material compensation, however, the process of dissonance reduction tends to focus on compensation in the realm of immaterial rewards such as deeper insight, social connection, and personal growth. This process of meaning-making through immaterial rewards (Anderson & Kay, 2013) is compatible with both theories of emotion regulation (Gross, 2002), and eudaimonic well-being (Ryff & Singer, 2008; Waterman, 1993), thus offering a promising framework for explaining the combined role of affective and cognitive challenge in eudaimonic entertainment.

Taken together, the results of this study offer a complex view of audiovisual entertainment that questions the validity of effortless hedonism as a one-fit-all explanation of entertainment experience. Rather, the findings support a dual-process model of entertainment that distinguishes between two types of psychological functions of entertainment consumption, namely recreation and personal growth. According to Hartmann (2013; see also, Eden et al., in press; Reinecke et al., 2014), individuals who are trying to maintain or restore psychological resources (e.g., because they are exhausted) seek media entertainment for recreation, and the experience of fun marks a successful accomplishment of this goal. The present study provides further evidence for this logic by suggesting that the experience of

fun is maximized by an absence of challenges that would require investment of psychological resources. Furthermore, Hartmann (2013) argues that individuals who are willing to invest psychological resources (e.g., because they are well-rested) seek media entertainment that offers challenges and opportunities for personal growth, and that achieving progress in this direction is marked by the experience of eudaimonic appreciation. The present study provides further evidence for this mechanism by suggesting that the experience of appreciation is stimulated by challenging aspects of media entertainment.

The issue of challenge and personal growth is most evident in the case of eudaimonic appreciation, because this type of entertainment experience seems to encourage viewers to make a cognitive effort towards a more profound understanding of the self and the world (Bartsch et al., 2014; Hofer et al., 2014; Lewis et al., 2014; Oliver & Hartmann, 2010; Oliver et al., 2014; Wirth et al, 2012). Suspenseful entertainment seems to occupy an intermediate position. It challenges the viewer on an affective level in that it requires response-focused regulation efforts to keep arousal and behavioral responses under control. However, suspenseful genres often offer predictable happy endings or encourage victim blaming, thus short-circuiting the need for cognitive emotion regulation and deeper reflection. Confronting vicarious experiences of distressful situations and mastering the challenge of response-focused emotion regulation may be a first step toward insight and personal growth. Yet the full potential of the viewer's mental capacities seems to be challenged only in the case of eudaimonic entertainment that requires antecedent-focused emotion regulation and resolution of cognitive conflict.

Thus, the current results provide an important element of discriminant validity and theoretical explication concerning the three types of entertainment experiences described by Oliver and Bartsch (2010), that is, fun, suspense and appreciation. Based on these findings, each type of entertainment experience can be linked to a unique profile of affective and/or cognitive challenge. The findings also provide some preliminary indication concerning the

types of media content that give rise to these different kinds of entertainment experiences. Fun eliciting entertainment that was neither affectively nor cognitively challenging was characterized by rather positive, stereotypical and predictable stories. Entertainment that was affectively challenging and suspenseful was characterized by distress-eliciting narratives without predictable happy endings, either combined with gory violence (in the affective challenge only condition), or with complex and morally ambiguous stories (in the both affective and cognitive challenge condition). The cognitively and affectively challenging type of entertainment that gave rise to eudaimonic appreciation was characterized by content eliciting a combination of empathy and cognitive dissonance, including the depiction of human hardship, justice violation, moral dilemmas, or unresolved controversial issues.

Educational and therapeutic implications of challenging entertainment experiences

These findings have interesting implications in terms of educational and therapeutic uses of entertainment media. For example, Vorderer and Ritterfeld (2009) highlight the role of meaningful and cognitively challenging experiences in individuals' appreciation of serious games. Games for social change such as *Darfur Is Dying* can increase awareness about social and political issues and can foster social participation (Neys & Jansz, 2010). In a health communication context, serious games such as *Re-Mission* have been found to improve young cancer patients' level of knowledge, self-efficacy, and treatment adherence (Kato, Cole, Bradlyn, & Pollock, 2008). Likewise, in a therapeutical context, film therapy has begun to use popular movies as a stimulus for self-reflection and personal growth (Hesley & Hesley, 1998; Schulenberg, 2003). A plausible but untested assumption is that individuals' sense of affective and cognitive challenge is important in mediating these educational and therapeutic effects of serious games and movies.

Thus far, educational uses of media entertainment have mainly been conceptualized in terms of fun and suspenseful entertainment experiences, because such experiences are intrinsically appealing, and because they seem to suppress critical counterarguments against

the educational message (Green & Brock, 2000; Moyer-Gusé, 2008; Slater & Rouner, 2002). Yet an equally plausible and perhaps more straightforward way to engage audiences in processes of attitude transformation and social change would be to offer them opportunities for cognitive challenge and personal growth. For example, in a recent study Oliver, Dillard, Bae, and Tamul (2012) found that the elicitation of compassionate reactions towards members of a stigmatized group increased prosocial attitudes and intentions, and information seeking about the stigmatized group. In a similar vein, Oliver, Hartmann, and Woolley (2012) found that the experience of elevation in response to eudaimonic entertainment gave rise to motivations to embody moral virtues, such as being a better person or helping others.

Limitations

It is important to keep in mind, however, that individuals' experience of cognitive and affective challenge is not a direct function of media content. As Hartmann (2013) has argued, the degree of perceived challenge depends on an interaction of the media content with personal dispositions and situational factors that can influence the viewer's motivation and ability to process the media content. For example, in terms of personal dispositions, young children may find it cognitively challenging to process a feel-good movie with a relatively simple storyline, whereas adults find it easy to process the same movie. Perceived levels of difficulty or challenge may also vary between adult viewers, depending on personality traits such as their need for cognition (Cacioppo & Petty, 1982; Oliver & Raney, 2011), their need for affect (Maio & Esses, 2001; Bartsch, Appel, & Storch, 2010), or their preferred style of emotion regulation (Gross, 2002). These individual difference variables were not assessed in the present study due to time constraints—which presents a serious limitation that did not allow us to examine possible interactions of these individual difference variables with experimental levels of affective and cognitive challenge.

In terms of situational factors, the same person may find the same movie content more or less challenging depending on his or her current mental state (Eden, et al., in press). Given

that challenging movie content requires the investment of self-regulatory effort, viewers may perceive an emotionally disturbing movie (e.g., a horror film), or a morally complex and ambiguous story (e.g., a drama) as more challenging when they are exhausted or ego-depleted as compared to a situation where they are well-rested (e.g., Baumeister et al., 1998; Milkman, 2009). Future studies should take these possible interactions of media content with personal and situational factors into account. In particular, personality traits and situational factors seem to offer interesting opportunities for manipulating viewers' perceived level of cognitive and/or affective challenge during exposure to identical media content.

In addition to the unexplored role of personal and situational factors in challenging entertainment experiences, the findings are limited by the self-report measures employed. Given that our target variables, entertainment and challenge, constitute subjective, experiential phenomena, the use of self-report measures seems indispensable. Nevertheless it would be useful to cross-validate these self-report measures with observational methods such as physiological measures as an additional indicator of affective challenge, or secondary reaction times as an indicator of cognitive load. Moreover, the current study is limited by its focus on the fun, suspense and appreciation scales of Oliver and Bartsch (2012) as measures of entertainment experience. In the meantime, more differentiated measures of eudaimonic entertainment have been developed such as the multi-dimensional scales of Wirth et al. (2012). The sub-dimension competence/personal growth might capture the challenge-driven aspect of eudaimonic entertainment more specifically than the appreciation scale of Oliver and Bartsch (2012), thus future research should include this more specific measure.

Further methodological limitations were associated with the experimental design of this study. First, the stimulus movies were rated from memory. Oliver and Bartsch (2010) found no difference concerning the dimensional structure of entertainment experience between viewers who rated a movie immediately after exposure, and those who rated the movie from memory. Nevertheless, the salience of different facets of entertainment

experience, or the salience of cognitive and/or affective challenge could have changed over time. Thus, the current findings need to be replicated with ratings obtained during or immediately after exposure. Second, the movies included in the four experimental conditions (representing different levels of cognitive and/or affective challenge) were chosen from different film genres. To be able to generalize results beyond specific stimuli, four films were included in each condition. If possible, films from different genres were selected. However, the pretest results often revealed strong connections between film genres and levels of cognitive and affective challenge. Thus, we cannot rule out a confound of cognitive and affective challenge with other genre-typical characteristics. Moreover, the inclusion of several exemplars per condition from which participants were allowed to select might have introduced a random effect. A viable alternative would be to manipulate perceived levels of challenge using the same media content—either based on differences in personal dispositions (e.g., need for cognition, need for affect, genre literacy) or based on situational factors (e.g., exhaustion/ego-depletion).

With these limitations of the present study in mind, we hope that our findings will be fruitful in stimulating further research into the cognitively and affectively challenging aspects of media entertainment. The current findings suggest that entertainment consumption may not only serve to provide audiences with a “brain holiday” from everyday problems and concerns. In addition to such well-researched hedonistic functions it seems that certain types of media entertainment can also be used as an opportunity for challenging experiences that can satisfy individuals' eudaimonic need for deeper insight and personal growth. Moreover, given the self-reflective and prosocial nature of eudaimonic entertainment experiences (Bartsch & Mares in press; Bartsch & Schneider, 2014; Oliver et al., 2014; Oliver, Hartmann, & Woolley, 2012; Oliver et al., 2012), the current findings hint at the fruitfulness of examining possible therapeutic and prosocial outcomes of challenging, eudaimonic entertainment experiences.

References

Anderson, D. R., Collins, P. A., Schmitt, K. L., & Jacobvitz, R. S. (1996). Stressful life events and television viewing. *Communication Research, 23*(3), 243–260. doi:10.1177/009365096023003001

Anderson, J. E., Kay, A. C. (2013). Finding silver linings: Meaning making as a compensatory response to negative experiences. In K. D. Markman (Ed.). The psychology of meaning. Washington, DC: American Psychological Association.

Andrade, E. B. & Cohen, J. B. (2007). On the consumption of negative feelings. *Journal of Consumer Research , 34*(3), 283-300.

Apter, M. J. (1992). *The dangerous edge. The Psychology of excitement.* New York: The Free Press.

Bartsch, A., Kalch, A., & Oliver, M. B. (2014). Moved to think. The role of emotional media experiences in stimulating reflective thoughts. *Journal of Media Psychology, 26*(3),125–140. doi: 10.1027/1864-1105/a000118.

Bartsch, A., & Mares M.-L. (in press). Making sense of violence. Perceived meaningfulness as a predictor of audience interest in violent media content. *Journal of Communication.*

Bartsch, A., & Schneider, F. M. (2014). Entertainment and politics revisited: How non-escapist forms of entertainment can stimulate political interest and information seeking. *Journal of Communication, 64*(3), 369–396. doi: 10.1111/jcom.12095

Bartsch, A., Vorderer, P., Mangold, R., & Viehoff, R. (2008). Appraisal of emotions in media use: Toward a process model of meta-emotion and emotion regulation. *Media Psychology, 11*(1), 7–27. doi:10.1080/15213260701813447

Baumeister, R. F., Bratslavsky, E., Muraven, M. & Tice, D. M. (1998). Ego-depletion: Is the active self a limited resource? *Journal of Personality and Social Psychology, 74*(5), 1252-1265.

Berlyne, D. E. (1971). Aesthetics and Psychobiology. New York: Appleton-Century-Crofts.

Brosius, H.-B., Rossmann, R. & Elnain, A. (1999). Alltagsbelastung und Fernsehnutzung (Stress and TV use). In U. Hasebrink & P. Rössler (Eds.), *Publikumsbindungen* (pp. 167-186). München: Reinhard Fischer.

Cabanac, M., Pouliot, C. & Everett, J. (1997). Pleasure as a sign of mental activity. *European Psychologist, 2*(3), 226-234.

Cantor, J., & Reilly, S. (1982). Adolescents' fright reactions to relevision and films. *Journal of Communication, 32*(1), 87–99. doi:10.1111/j.1460-2466.1982.tb00480.x

Cowan, G., & O'Brien, M. (1990). Gender and survival vs. death in slasher films: A content analysis. *Sex Roles, 23*(3-4), 187-196. doi: 10.1007/BF00289865

Cupchik, G. C. (1995). Emotion in aesthetics: Reactive and reflective models. *Poetics, 23*(1-2), 177–188. doi: 10.1016/0304-422X(94)00014-W

Deci, E. L., & Ryan, R. M. (2000). The „what" and „why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227–268. doi:10.2307/1449618

Eden, A., Hartmann, T., & Reinecke, L. (in press). Tuning in versus zoning out: The role of ego-depletion in selective exposure to challenging media. In H. Wang (Ed.), *Communication and the good life. ICA Annual Conference Theme Book Series, 2014.* New York: Peter Lang.

Fosha, D. (2000). *The transforming power of affect: A model for accelerated change.* New York: Basic Books.

Green, M. C., & Brock, T. C. (2000). The role of transportation in the persuasiveness of public narratives. *Journal of Personality and Social Psychology, 79*(5), 701–721. doi:10.1037/0022-3514.79.5.701

Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology, 39,* 281–291. doi: 10.1017.S0048577201393198

Hesley, J. W., & Hesley, J. G. (1998). *Rent two films and let's talk in the morning: Using popular movies in psychotherapy*. Hoboken, NJ: Wiley.

Hall, A. (2005). Audience personality and the selection of media and media genres. *Media Psychology*, *7*(4), 377-398. doi:10.1207/S1532785XMEP0704_4

Hartmann, T. (2013). Media entertainment as a result of recreation and psychological growth. In E. Scharrer (Eds.), *Media Effects/Media Psychology, Vol. 5. The International Encyclopedia of Media Studies* (pp. 170-188), A. Valdivia (Gen. Ed.). Boston, MA: Wiley-Blackwell.

Hofer, M., Allemand, M., & Martin, M. (2014). Age Differences in Nonhedonic Entertainment Experiences. Journal of Communication, 64(1), 61–81. doi:10.1111/jcom.12074

Kato, P. M., Cole, S. W., Bradlyn, A. S., & Pollock, B. H. (2008). A video game improves behavioral outcomes in adolescents and young adults with cancer: A randomized trial. *Pediatrics*, *122*(2), e305–e317. doi:10.1542/peds.2007-3134

Knobloch-Westerwick, S., Gong, Y., Hagner, H., & Kerbeykian, L. (2012). Tragedy viewers count their blessings: Feeling low on fiction leads to feeling high on life. *Communication Research, 40*, 747–766. doi:10.1177/0093650212437758

Kreitler, S., Zigler, E., & Kreitler, H. (1974). The complexity of complexity. *Human Development, 17*, 54-73.

Lee, S. & Lang, A. (in press). Redefining media content and structure in terms of available resources: Toward a dynamic human-centric theory of communication. *Communication Research.*

Lewis, R. J., Tamborini, R., & Weber, R. (2014), Testing a dual-process model of media enjoyment and appreciation. *Journal of Communication, 64*(3), 397–416. doi: 10.1111/jcom.12101

Mayer, J. D., Salovey, P., Caruso, D. R., & Sitarenios, G. (2001). Emotional intelligence as a standard intelligence. *Emotion, 1*(3), 232–242. doi:10.1037/1528-3542.1.3.232

Milkman, K. L. (2009). Unsure what the future will bring? You may overindulge: Uncertainty increases the appeal of wants over shoulds. Organizational Behavior and Human Decision Processes 119 (2012) 163–176. dii: 10.1016/j.obhdp.2012.07.003

Mittell, J. (2012). *Complex TV: The poetics of contemporary television storytelling.* Pre-publication edition retrieved from http://mcpress.media-commons.org/complextelevision/.

Moyer-Gusé, E. (2008). Toward a theory of entertainment persuasion: Explaining the persuasive effects of entertainment-education messages. *Communication Theory, 18*(3), 407–425. doi:10.1111/j.1468-2885.2008.00328.x

Neys, J., & Jansz, J. (2010). Political Internet games: Engaging an audience. *European Journal of Communication*, *25*(3), 227–241. doi:10.1177/0267323110373456

Nielsen, J. (1999). *Designing Web Usability: The Practice of Simplicity.* Indianapolis: New Riders Publishing.

Oliver, M. B. (1993). Adolescents' enjoyment of graphic horror: Effects of viewers' attitudes and portrayals of victim. Communication Research, 20(1), 30-50. doi: 10.1177/009365093020001002

Oliver, M. B. (2008). Tender affective states as predictors of entertainment preference. *Journal of Communication*, *58*(1), 40-61. doi:10.1111/j.1460-2466.2007.00373.x

Oliver, M. B., & Bartsch, A. (2010). Appreciation as audience response: Exploring entertainment gratifications beyond hedonism. *Human Communication Research*, *36*(1), 53-81. doi:10.1111/j.1468-2958.2009.01368.x

Oliver, M. B., Bartsch, A., & Hartmann, T. (2014). Negative emotions and the meaningful sides of media entertainment. In Parrott, W.G. (Ed.). *The positive side of negative emotions* (pp. 224-246). New York: Guilford Press.

Oliver, M. B., Dillard, J. P., Bae, K., & Tamul, D. J. (2012). The effect of narrative news format on empathy for stigmatized groups. *Journalism & Mass Communication Quarterly*. doi:10.1177/1077699012439020

Oliver, M. B., & Hartmann, T. (2010). Exploring the role of meaningful experiences in users' appreciation of good movies. *Projections*, *4*(2), 128–150. doi:10.3167/proj.2010.040208

Oliver, M. B., Hartmann, T., & Woolley, J. K. (2012). Elevation in response to entertainment portrayals of moral virtue. *Human Communication Research*, *38*(3), 360–378. doi:10.1111/j.1468-2958.2012.01427.x

Oliver, M. B., & Raney, A. A. (2011). Entertainment as pleasurable and meaningful: differentiating hedonic and eudaimonic motivations for entertainment consumption. *Journal of Communication*, *61*(5), 984–1004. doi:10.1111/j.1460-2466.2011.01585.x

Reinecke, L., Hartmann, T., & Eden, A. (2014). The guilty couch potato: The role of negative emotions in reducing recovery through media use. *Journal of Communication, 64* (4), 569–589.

Reinecke, L., Klatt, J., & Krämer, N. C. (2011). Entertaining media use and the satisfaction of recovery needs: Recovery outcomes associated with the use of interactive and noninteractive entertaining media. *Media Psychology*, *14*(2), 192–215. doi:10.1080/15213269.2011.573466

Roberts, M. N. (2007). *Complexity and aesthetic preference for diverse visual stimuli.* Retrieved September 4th, 2014, from http://www.openthesis.org/.

Rozin, P. (1999). Preadaptation and the puzzles and properties of pleasure. In D. Kahneman, E. Diener & N. Schwarz (Eds.).*Well being: The foundations of hedonic psychology* (pp. 109-133). New York: Russell Sage.

Ryan, R. M., Huta, V., & Deci, E. L. (2006). Living well: a self-determination theory perspective on eudaimonia. *Journal of Happiness Studies*, *9*(1), 139-170. doi:10.1007/s10902-006-9023-4

Ryan, R. M., Rigby, S. W., & Przybylski, A. (2006). The Motivational Pull of Video Games: A Self-Determination Theory Approach. Motivation and Emotion, 30, 347–363.

Ryff, C. D., Singer, B. H., & Love, G. D. (2004). Positive health: connecting well-being with biology. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *359*(1449), 1383–1394. doi:10.1098/rstb.2004.1521

Schulenberg, S. E. (2003). Psychotherapy and Movies: On Using Films in Clinical Practice. *Journal of Contemporary Psychotherapy*, *33*(1), 35–48. doi:10.1023/A:1021403726961

Slater, M. D., & Rouner, D. (2002). Entertainment-education and elaboration likelihood: Understanding the processing of narrative persuasion. *Communication Theory*, *12*(2), 173–191.

Tamborini, R., Bowman, N. D., Eden, A., Grizzard, M., & Organ, A. (2010). Defining media enjoyment as the satisfaction of intrinsic needs. *Journal of Communication*, *60*(4), 758-777. doi:10.1111/j.1460-2466.2010.01513.x

Tamborini, R., Grizzard, M., Bowman, N.D., Reinecke, L., Lewis, R., & Eden, A. (2011). Media enjoyment as need satisfaction: The contribution of hedonic and non-hedonic needs. *Journal of Communication, 61*(6), 1025-1042. DOI: 10.1111/j.1460-2466.2011.01593.x

Tesser, A., Millar, K., & Wu, C. H. (1988). On the perceived functions of movies. *Journal of Psychology*, *122*(5), 441-449. doi:10.1080/00223980.1988.10542949

Vorderer, P. (2011). What's next? Remarks on the current vitalization of entertainment theory. *Journal of Media Psychology, 23*, 60–63. doi:10.1027/1864-1105/a000034

Vorderer, P., & Ritterfeld, U. (2009). Digital games. In R. L. Nabi & M. B. Oliver (Eds.), *Handbook of media processes and effects* (pp. 455–467). Thousand Oaks, CA: Sage.

Vorderer, P., Klimmt, C., & Ritterfeld, U. (2004). Enjoyment: At the heart of media entertainment. *Communication Theory*, *14*(4), 388–408. doi:10.1111/j.1468-2885.2004.tb00321.x

Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology*, *64*(4), 678-691. doi:10.1037/0022-3514.64.4.678

Wirth, W., Hofer, M., & Schramm, H. (2012). Beyond pleasure: Exploring the eudaimonic entertainment experience. *Human Communication Research, 38*(4), 406–428. doi:10.1111/j.1468-2958.2012.01434.x

Zillmann, D. (1988). Mood management through communication choices. *American Behavioral Scientist*, *31*(3), 327-340. doi:10.1177/000276488031003005

Zillmann, D. (1991). The logic of suspense and mystery. In J. Bryant, & D. Zillmann, Dolf (Eds.). *Responding to the screen: Reception and reaction processes* (pp. 281-303). Hillsdale, NJ: Lawrence Erlbaum Associates.

Zillmann, D. (1996). The psychology of suspense in dramatic exposition. In *P. Vorderer, H. J. Wulff & M. Friedrichsen (Eds.), Suspense: Conceptualizations, theoretical analyses, and empirical explorations* (S. 199-231). Mahwah, NJ: Lawrence Erlbaum Associates.

Zillmann, D. (2003). Theory of affective dynamics: Emotions and moods. In J. Bryant, D. R. Roskos-Ewoldsen & J. Cantor, (Eds.), *Communication and emotion: Essays in honor of Dolf Zillmann* (pp. 533-568). Mahwah, NJ: Lawrence Erlbaum Associates.

Zillmann, D., & Cantor, J. R. (1977). Affective responses to the emotions of a protagonist. *Journal of Experimental Social Psychology, 13*(2), 155–165. doi:10.1016/S0022-1031(77)80008-5

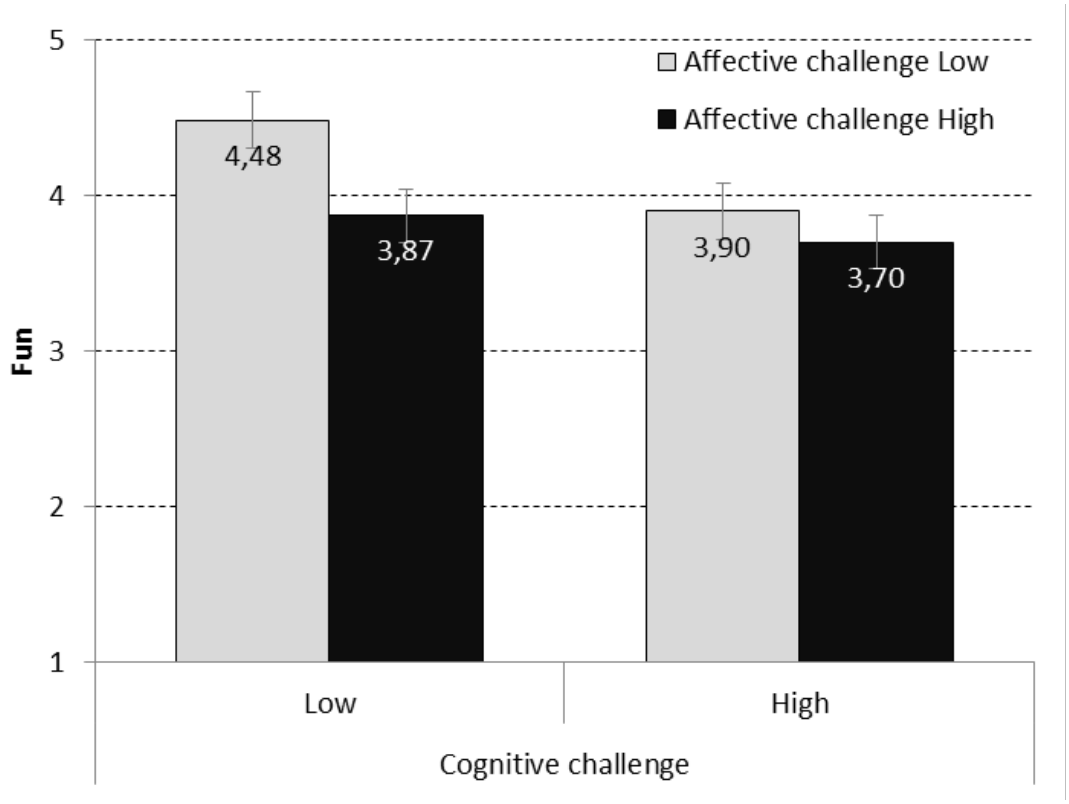
Table 1

Manipulation Checks Cognitive and Affective Challenge by Experimental Condition

	Experimental Condition: Levels of Challenge			
	Cognitive High Affective High (Condition 1)	Cognitive High Affective Low (Condition 2)	Cognitive Low Affective High (Condition 3)	Cognitive Low Affective Low (Condition 4)
Ratings				
Affective Challenge	4.23$_a$ (.13)	2.91$_b$ (.14)	3.91$_a$ (.13)	2.64$_b$ (.14)
Cognitive Challenge	3.81$_a$ (.12)	3.28$_b$ (.13)	2.35$_c$ (.12)	2.06$_c$ (.13)

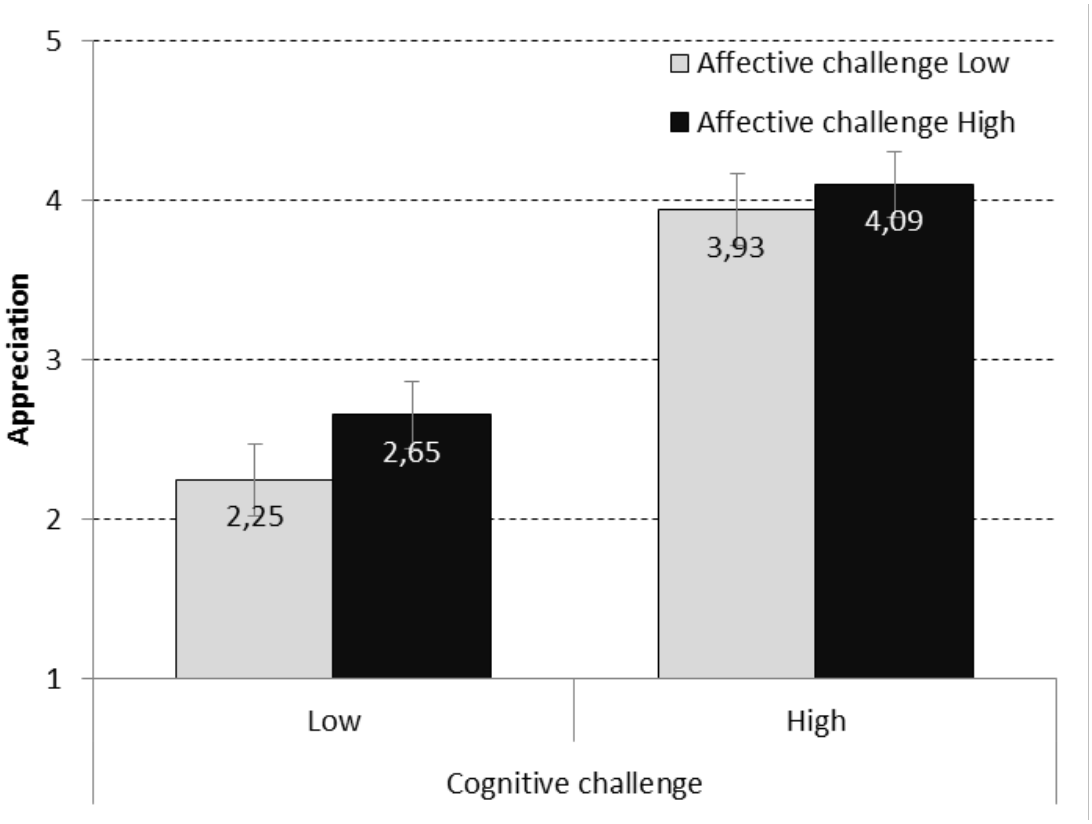
Note. Numbers in parentheses are standard errors. Within rows, means with no subscripts in common differ at $p < .05$ using Tukey's HSD-test.

Figure 1. Effects of cognitive challenge (low/high) and affective challenge (low/high) presented by movies on viewers' experience of fun.



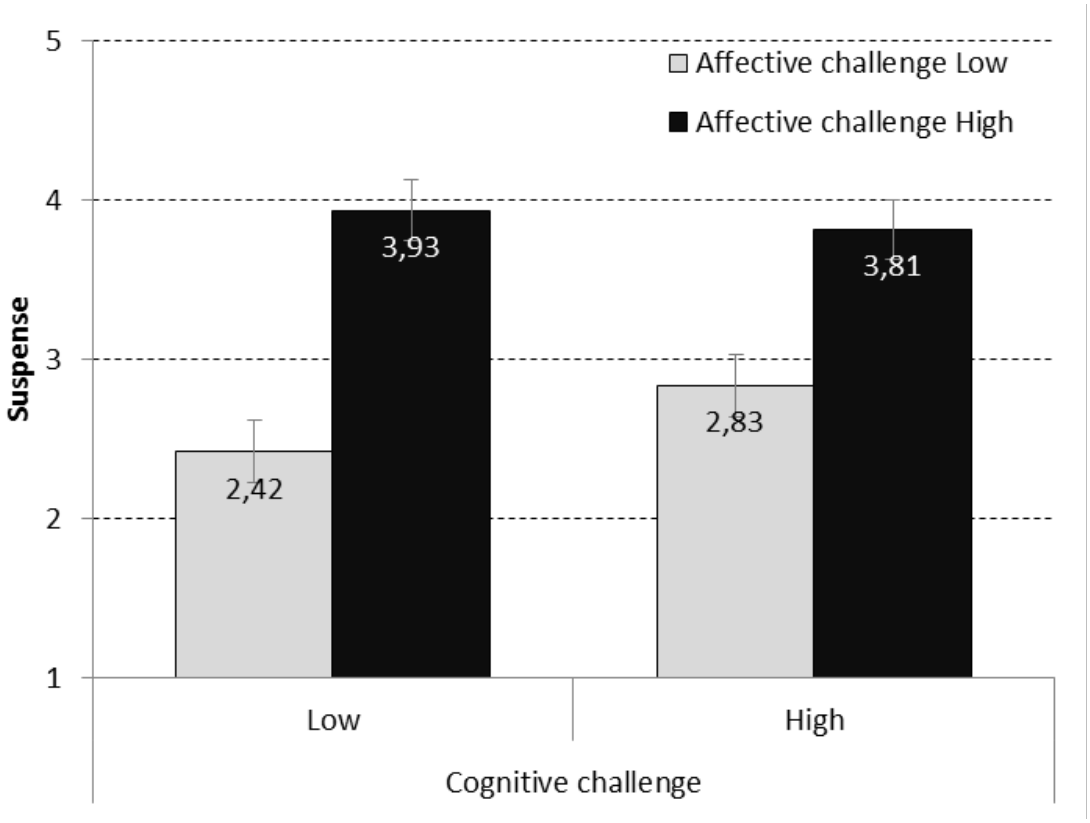
Note. Brackets show 95% CI levels.

Figure 2. Effects of cognitive challenge (low/high) and affective challenge (low/high) presented by movies on viewers' experience of eudaimonic appreciation.



Note. Brackets show 95% CI levels.

Figure 3. Effects of cognitive challenge (low/high) and affective challengen (low/high) presented by movies on viewers' experience of suspense.



Note. Brackets show 95% CI levels.