Research report

Learning from entertaining online video clips? Enjoyment and appreciation and their differential relationships with knowledge and behavioral intentions

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ABSTRACT

Based on assumptions from entertainment theory, an online-study ($N = 419$) was conducted to investigate the differential relationships between enjoyment and appreciation of a video clip that dealt with the features of natural gas as fuel for cars, objective and subjective knowledge about the content of that clip, and behavioral intentions of dealing with the topic of natural gas. Structural equation modeling revealed that enjoyment was directly positively related to objective and subjective knowledge. However, objective knowledge did not predict and subjective knowledge was only weakly associated with behavioral intentions. Appreciation, in contrast, was directly negatively related to knowledge acquisition and not related to subjective knowledge, but was the best predictor for behavioral intentions. These results point to the distinct processes and relationships of different entertainment experiences. Implications for entertainment–education and online video portals are discussed.

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Short online video clips explaining one particular issue have become a popular phenomenon in the past years: There are countless clips on *YouTube* which help users with everyday tasks such as doing the laundry properly or the preparation of a festive meal next Christmas. These comparably simple clips are often made by private persons in their leisure time. However, there is a growing number of companies which, on behalf of economic, educational, or governmental organizations, professionally produce short clips on more complex issues such as learning about how to vote in the European elections or even how to understand the international financial crisis (for examples, see Fleing, 2013). These short films are provided as single clips or video podcasts (Kay, 2012), usually run about two or three minutes and are produced in a narrative and humorous way, very often in the style of cartoons and underscored with music and sound-animations (e.g., the video "How to apply for a PhD position in the Max Planck Society", https://youtu.be/X2yDs5FHDok). From a theoretical perspective, such clips are perfect examples of entertainment–education (EE; e.g., Singhal, Cody, Rogers, & Sabido, 2004).

EE research is concerned with the effects of entertaining media on people's knowledge and behavior (e.g., Singhal & Rogers, 2001). For instance, researchers found that exposure to episodes of US TV dramas that dealt with organ donation facilitated factual knowledge acquisition about organ donation and motivation to become an organ donor (Morgan, Movius, & Cody, 2009); watching an episode of the TV show *Friends* that included condom-efficacy messages led to an increase in self-reported knowledge about condoms (Collins, Elliott, Berry, Kanouse, & Hunter, 2003). Furthermore, viewing episodes of the TV drama *Desperate Housewives* with a cancer storyline improved knowledge about cancer and provoked discussion and behavioral intentions concerning the topic (Murphy, Frank, Moran, & Patnoe-Woodley, 2011). Although most research on EE has been done with traditional media, comparable effects can be expected when the content is provided on a computer or streamed online via tablets or smartphones (Entertainment 1.0; cf. Trepte & Reinecke, 2010). For example, playing the serious online video game *Darfur is Dying* increased behavioral intentions with regard to the crisis in Darfur (Peng, Lee, & Heeter, 2010) and sharing the game with others (Cohen, 2014), and a soap opera was successfully streamed to smartphones to reduce

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HIV sex risk in young urban African American Women (Jones, Hoover, & Lacroix, 2013). Especially, video-sharing online portals like *YouTube* provide an enormous potential for entertaining learning situations (for an overview, visit http://www.teachthought.com/technology/teaching-youtube-197-digital-channels-learning/), and thus, for EE.

However, although EE studies rely on various theories and models to explain how entertainment media affects learning and actions (e.g., social cognitive theory; Bandura, 1977, 2001), the theoretical development is an ongoing area of interest (cf. Moyer-Gusé, 2008). Specifically, up until now there are only few studies which use entertainment theory from a psychological perspective (e.g., Bryant & Vorderer, 2006) in order to explain the learning effects of EE messages on their users (e.g., Moyer-Gusé, 2008; Weinmann, Löb, Mattheiß, & Vorderer, 2013). Accompanying the recent rise of political entertainment research (e.g., Holbert, 2014; Young & Gray, 2013), however, some studies were successful in differentiating between two distinct forms of entertainment experiences, namely enjoyment and appreciation (Oliver & Bartsch, 2010), and their effects on cognitions and the feeling of being informed after exposure to entertainment media (e.g., Bartsch & Schneider, 2014; Mattheiß et al., 2013; Roth, Weinmann, Schneider, Hopp, & Vorderer, 2014; Schneider, Bartsch, & Gleich, 2015).

Thus, in the present study we aim at (1) exploring whether EE online video clips such as the ones described above can evoke different entertainment experiences, and if so, (2) whether these experiences show differential relationships with EE target variables (i.e., knowledge and behavioral intentions). Furthermore, we apply our research questions to a largely neglected field of EE — environmental topics — and investigate the responses to a short online video clip that deals with the features of natural gas as fuel for cars.

1. Dual-process models of entertainment

In the past years, entertainment research has moved from the theoretical and empirical analyses of purely hedonic entertainment experiences to a broader view on what constitutes entertainment experiences (Bartsch & Schneider, 2014; Lewis, Tamborini, & Weber, 2014; Oliver & Bartsch, 2010; Oliver & Raney, 2011; Schramm & Wirth, 2008; Tamborini, Bowman, Eden, Grizzard, & Organ, 2010; Vorderer, 2011; Vorderer & Reinecke, 2012; Wirth, Hofer, & Schramm, 2012).

The idea that viewers choose entertainment media mainly to achieve or maintain an optimal arousal and a positive affective state — the hedonic principle — goes back to mood-management theory (Zillmann, 1988), which has been the predominant framework to investigate the nature of entertainment motivations and experiences. Accordingly, research focused primarily on hedonic experiences such as enjoyment or pleasure, which have been proposed to be the core of entertainment (e.g., Vorderer, Klimmt, & Ritterfeld, 2004).

In addition to the well-established entertainment experience of enjoyment, more recently, communication scholars and media psychologists extended the field of entertainment research and proposed another dimension of entertainment experience. This second dimension has its roots in the distinction between hedonic and eudaimonic well-being: Whereas hedonic well-being focuses on happiness and pleasure, eudaimonic well-being focuses on meaningfulness and self-realization (Ryan & Deci, 2001; Waterman, 1993). The motivation to use cognitively and emotionally more demanding entertainment media such as film clips for educational purposes, serious games, or tragic movies can be traced back to the fulfillment of higher-ordered needs such as truth-seeking, personal growth, and meaningful existence (e.g., Oliver & Raney, 2011). Thus, eudaimonic entertainment experiences are supposed to be theoretically and empirically distinct from hedonic entertainment experiences (Bartsch & Schneider, 2014; Lewis et al., 2014; Oliver & Bartsch, 2010; Vorderer & Reinecke, 2012; Wirth et al., 2012). Specifically, the conceptualization of eudaimonic entertainment experiences as appreciation has received wide attention. Oliver and Bartsch (2010, p. 76) define appreciation as "an experiential state that is 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."

With regard to EE, this distinction has been rarely applied until now (except see above). One reason might be that research on the consequences of hedonic and eudaimonic entertainment experiences is still in its fledgling stages. However, first attempts have been made to connect hedonic and eudaimonic entertainment processes to dual-process models of information processing (e.g., Chaiken, 1980; Kahneman, 2003; Petty & Cacioppo, 1986) and their respective outcomes such as cognitive elaboration, knowledge acquisition, attitude change, and motivational activation (e.g., Bartsch, Kalch, & Oliver, 2014; Bartsch & Schneider, 2014; Lewis et al., 2014; Vorderer & Reinecke, 2012). Thus, applying such a new approach to scrutinize the underlying processes of EE seems to be a useful endeavor.

2. Consequences of entertainment experiences

Domain-specific dual-process models such as the elaboration likelihood model (Petty & Cacioppo, 1986) or the heuristic-systematic model (Chaiken, 1980) in the research field of persuasion have a long tradition in psychology (Payne & Gawronski, 2010; for an overview, see Chaiken & Trope, 1999). In recent years, generalized dual-process models have advanced the field (e.g., Gawronski & Bodenhausen, 2006; Kahneman, 2003; Smith & DeCoster, 2000; Strack & Deutsch, 2004). Common to all these models is the assumption that these processes can be characterized as associative (e.g., automatic, affective, reflexive, and holistic) or rule-based (e.g., non-automatic, cognitive, reflective, and analytic) (Smith & DeCoster, 2000). According to the dual-process models of entertainment (e.g., Bartsch & Schneider, 2014; Lewis et al., 2014; Vorderer & Reinecke, 2012), associative processes correspond to hedonic entertainment experiences, whereas rule-based or reflective processes correspond to eudaimonic entertainment experiences.

These distinct experiences relate to different learning outcomes: On the one hand, a positive affective state might help to encode and store information, thus, facilitate knowledge acquisition and also promote social behavior (e.g., Fredrickson, 1998; Isen, 1987, 2009). Hence, hedonic entertainment experiences could be related to such outcomes in the same vein. On the other hand, according to the affect-as-information hypothesis (Schwarz & Clore, 1983), positive affect might also lead to a more superficial processing followed by less engagement in information use and search (e.g., Forgas, 1995). Thus, it seems possible that enjoyment might also be negatively associated with such outcomes (Roth, 2014). Surprisingly, even though enjoyment is seen as the core of entertainment (Vorderer et al., 2004), this has hardly been explicitly measured in EE research. Thus, we asked the following research question:

RQ1. How is enjoyment related to the acquisition of objective knowledge and behavioral intentions?

Nevertheless, most recently, some studies found that enjoyment of entertainment media positively predicted subjective knowledge (e.g., Mattheiß et al., 2013; Schneider et al., 2015; Weinmann et al., 2013). Subjective knowledge (i.e., the feeling of being informed) can be distinguished from objective knowledge (although they