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The effects of user comments on hedonic and eudaimonic entertainment experiences when watching online videos

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Abstract: Videos presented on social media platforms are frequently watched because people find them entertaining. However, videos on social media platforms are often presented together with user comments containing information about how entertaining previous viewers found them to be. This social information may affect people's entertainment experiences. The goal of the present study was to explore how user comments affect viewers' hedonic and eudaimonic entertainment experiences in response to online videos. The results of an online experiment ($N = 203$) showed that user comments in which previous viewers of a video indicate that they enjoyed or appreciated the video increase the hedonic entertainment experiences of new viewers. Viewers' eudaimonic entertainment experiences were unaffected by user comments. These findings show that entertainment experiences do not emerge in response to online videos alone. Instead, they also depend on information about the entertainment experiences of previous viewers.

Keywords: user comments, entertainment experiences, online videos

1 Introduction

Digitalization has substantially changed the way in which people access and process movies and videos (Valkenburg and Piotrowski, 2017). Especially young people often rely on social media and video-sharing websites to watch videos (Pew Research Center, 2018). An essential new characteristic of online video viewing is that people are not only exposed to the video itself. They are also exposed to social information (Sundar, 2008) – that is, information about media content provided by others which often takes the form of user comments con-

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taining other viewers' opinions and thoughts regarding the content (e. g., Hsueh, Yogeewaran, and Malinen, 2015). Although social information in the form of user comments is widespread, we still know little about how this new context in which audiovisual messages are processed influences recipients' perceptions and responses. Notably, even though people regularly use online videos to satisfy entertainment-related needs (Chau, 2010; Khan, 2017), previous research has neglected the question of how user comments influence recipients' entertainment experiences, and studies that compare the effects on hedonic and eudaimonic entertainment are missing completely.

Learning more about the effects of social information on entertainment experiences is relevant because social information is a prevalent social-context factor in online environments that may influence the perceptions and responses of many media users. In particular, young people are heavy users of online videos and they are particularly focused on their social environment because it plays an important role in their psychosocial development (Arnett, 2000; Steinfield, Ellison, and Lampe, 2008). Thus, social information is as prevalent as well as a potentially very influential context factor. In line with this reasoning, current media effects models propose that social-context factors are crucial boundary conditions of media effects that can substantially alter audience responses (Valkenburg and Peter, 2013). Therefore, the present study aims at contributing to a more thorough understanding of how entertainment responses to videos unfold in online environments. As little is known about the effects of online social information on entertainment experiences, the present study investigates the question of how user comments about online videos affect young people's hedonic and eudaimonic entertainment experiences when watching these videos.

Hedonic and eudaimonic entertainment experiences

One of the main motives for using media is entertainment (Bartsch, 2012; Potter, 2009). Scholars have often described entertainment as enjoyment, or as experiences of fun and excitement. In the literature, these experiences are referred to as hedonic entertainment experiences (Oliver and Bartsch, 2011; Rieger, Reinecke, Frischlich, and Bente, 2014; Wirth, Hofer, and Schramm, 2012). However, people can also feel entertained while consuming media content that is *not* fun or exciting, such as sad movies, dramas, or documentaries. In these cases, individuals feel entertained because the media content is thought-provoking and offers them something other than enjoyment, namely appreciation. This type of entertainment experience is referred to as eudaimonic entertainment (Bartsch and Hartmann, 2017; Oliver and Bartsch, 2011; Wirth et al., 2012).

The specific type of entertainment experience that people have depends on the media content that they consume. While some media content elicits mainly hedonic or eudaimonic entertainment experiences, other media content can elicit a combination of both types of entertainment. For instance, dramatic movies often include cheerful or funny scenes that may elicit hedonic responses. Similarly, comedies can include dramatic or sad moments that can give rise to eudaimonic responses. Hence, when consuming media content people can simultaneously have hedonic and eudaimonic entertainment experiences (Hall and Zwarun, 2012). Consequently, when user comments influence entertainment experiences in online environments, they may affect both hedonic and eudaimonic responses to the video.

Effects of social information on attitudes and evaluations

Research on the influence of user comments on entertainment experiences is scarce. However, some studies have investigated the influence of social information on evaluations and attitudes. Marketing researchers have studied the effects of a specific type of online social information, namely online product reviews, on several outcome variables, such as purchase intention, willingness to recommend products, and consumers' attitudes towards products (Cheung and Thadani, 2012). Specifically, scholars focused on how these variables are affected by the valence (i. e., the positivity or negativity) of online product reviews. They found that the valence of reviews may determine consumers' attitudes towards products and their intention to buy products (Lee, Park, and Han, 2008; Lee and Youn, 2009; Xia and Bechwati, 2008). For example, Lee and Youn (2009) found that as consumers view more reviews about a product with a negative valence, their attitude towards that product becomes more unfavorable.

Another relevant line of research has investigated the effects of online movie reviews on people's evaluations of movies. These studies show that the volume and the valence of online movie reviews can affect people's evaluations of movies (Chakravarty, Liu, and Mazumdar, 2010; Liu, 2006) and impact movie revenues (Baek, Oh, Yang, and Ahn, 2017; Liu, 2006). Liu (2006) suspects that movie reviews create expectations that, in turn, influence audience responses. He found that movie reviews that are written before the release of a movie have a more positive valence than reviews written after a movie's release. According to Liu (2006), reviews often create positive expectations of a movie beforehand. But after the movie is released, people's evaluations of the movie are typically more critical as it does not live up to the high expectations set by the reviews (Liu,

2006). However, the content analysis that Liu performed cannot provide direct evidence for the proposed psychological responses to movie reviews.

Effects of social information on entertainment experiences

The literature on online product and movie reviews suggests that individuals' attitudes towards products or movies can be influenced by social information that they see long before they actually consume a product or watch a movie. However, in the case of online videos, the social information and the video are typically presented together and, thus, the time gap between being exposed to social information and being exposed to the video is very small. User comments should, thus, not only influence pre-exposure attitudes but also the psychological responses that emerge *during* media exposure.

Co-viewing studies investigate the impact of non-verbal social cues during media exposure on entertainment experiences (Tal-Or, 2016; Zillich, 2014; Zillmann, Weaver, Mundorf, and Aust, 1986). Tal-Or (2016) showed that viewing television content together with another person who shows positive reactions to the content increases viewers' immersion in the story. Similarly, Zillich (2014) found that individuals experience more empathy with characters – a response which is associated with enjoyment – when the people with whom they are watching indicate involvement in the story. Finally, Zillmann et al. (1986) found that men enjoyed watching a horror movie more when they were in the company of a woman who showed distress. Women enjoyed the movie more when they watched it in the company of a man who showed mastery of fright. Non-verbal social information can, thus, influence enjoyment during media exposure. However, social information in the form of textual messages, such as comments on YouTube, are processed differently – notably, the processing of text messages is cognitively more demanding than the processing of audiovisual messages (Geise and Baden, 2015; Sparks, Areni, and Cox, 1998) – and the results may, thus, not be directly applicable to the case of written social information.

Only few studies have investigated the influence of written social information on the experience of entertainment during media exposure. Shedlosky-Shoemaker, Costabile, Deluca, and Arkin (2011) investigated how the exposure to social information right before reading a story affects entertainment experiences. They found that participants' enjoyment of a narrative increased when they read reviews that positively discussed the narrative or the characters beforehand. The study is important for two reasons: First, it shows that exposure to social information shortly before exposure to the actual media content can influence enjoyment

of that content. Second, it shows that written social information, in particular, can influence the subsequent enjoyment of media content.

Written social information about online media content is typically presented in the form of user comments. Extant research indicates that it is a common practice to read user comments presented under online videos (Khan, 2017) and so, user comments are likely to affect viewers' entertainment experiences. In an experiment, Waddell and Sundar (2017) let participants watch an episode of a comedy show and either exposed them to positive, negative, or no Twitter messages about the show. Participants who were exposed to negative Tweets about the show reported less enjoyment than participants who were exposed to positive Tweets or no Tweets. Similarly, Winter, Krämer, Benninghoff, and Gallus (2018) let participants watch a talent show on television. One group of participants could read comments about the show on a tablet while watching, while another group of participants only viewed the talent show and did not see any comments. Winter et al. found that positive comments increased viewers' enjoyment in comparison to negative comments or no comments. Thus, there exists some preliminary evidence that written social information influences the experience of entertainment during media exposure.

Explanations of the effects of social information on entertainment experiences suggest social information may promote biased processing of media content. Shedlosky-Shoemaker et al. (2011) proposed that the reviews influence participants' expectations of narratives which, in turn, steer participants' focus when they are reading the narrative and their enjoyment. Thus, positive comments should promote positive expectations, a focus on positive information, and, thus, increase enjoyment. A similar explanation has been provided by Liu (2006). In his study on movie reviews, he suggested that reviews create expectations which have an assimilative effect on the experience of the movie.

Social psychological research on schemas and information processing seems to corroborate this notion. This research shows that prior information can steer individuals' focus when they process novel information so that expectancy-congruent information receives more attention and is recalled better than expectancy-incongruent information (Klaaren, Hodges, and Wilson, 1994; Stangor and Ruble, 1989). Similarly, priming theory suggests that individuals are likely to evaluate media content based on relevant constructs that are readily accessible (Price and Tewksbury, 1997). Accordingly, user comments about the entertainment quality of online videos are likely to make positive or negative constructs more accessible which, in turn, should influence the interpretation of, and entertainment responses to, online videos.

Hedonic versus eudaimonic entertainment experiences

The research discussed above investigated how positive or negative social information increases or decreases enjoyment of media content. While these studies provided crucial insights into the effects of social information on hedonic entertainment, the relationship between user comments and eudaimonic entertainment has been neglected so far. However, a further analysis and comparison of the effects of user comments on hedonic and eudaimonic entertainment responses is relevant for at least three reasons. First, the literature on entertainment experiences clearly suggests that hedonic and eudaimonic entertainment are essential dimensions of users' responses to recreational media content (Oliver and Bartsch, 2011; Wirth et al., 2012). Thus, to acquire a comprehensive picture of media users' entertainment experiences both dimensions should be considered. Second, previous research focused on TV programs with a mainly hedonic appeal, such as talent shows (Winter et al., 2018) or comedy programs (Waddell and Sundar, 2017). However, there exists a lot of media content that appeals to the eudaimonic needs of users, and, moreover, many programs that appeal to both hedonic and eudaimonic needs of recipients (e. g., comedy-dramas or black comedy). To understand the effects of such media contents, both dimensions of entertainment have to be considered. Third, because media contents and user experiences include a hedonic and a eudaimonic dimension, user comments are likely to reflect these two distinct dimensions, too. That is, user comments may specifically address the hedonic or eudaimonic entertainment value of media content. Presumably, these 'hedonic' and 'eudaimonic' comments have specific effects on entertainment experiences. To account for these three limitations of previous research, we test (1) the effects of 'hedonic' and 'eudaimonic' user comments about (2) an online fictional narrative that includes both dramatic and comedic elements on (3) users' hedonic and eudaimonic entertainment experiences.

Based on the existing literature, we propose that comments discussing people's hedonic entertainment experiences in response to a video should lead viewers to focus on hedonic aspects of the video. More precisely, when user comments evaluate the hedonic entertainment value of a video positively, viewers should focus on the aspects of the video that reflect this positive evaluation and they should thus experience more hedonic entertainment. In contrast, negative comments about the hedonic entertainment value should promote a focus on negative aspects and the viewers should thus experience less hedonic entertainment. Therefore, we hypothesize:

H1: Individuals who are exposed to comments in which previous viewers of an online video express high hedonic entertainment will experience more hedonic entertainment when viewing the video than individuals who are exposed to comments that express low hedonic entertainment or individuals who are not exposed to any comments.

User comments can also discuss the eudaimonic entertainment experiences of previous viewers. When video viewers read user comments that evaluate the eudaimonic entertainment value of an online video, they are likely to focus on aspects of the video that reflect its eudaimonic entertainment value which should affect their eudaimonic entertainment. Hence, we propose:

H2: Individuals who are exposed to comments in which previous viewers of an online video express high eudaimonic entertainment will experience more eudaimonic entertainment when viewing the video than individuals who are exposed to comments that express low eudaimonic entertainment or individuals who are not exposed to any comments.

The two hypotheses imply that users are able to discern comments about hedonic and eudaimonic entertainment responses and that comments only influence the corresponding entertainment response. However, two alternative scenarios are possible. First, changes in one entertainment response may spill over to the other entertainment response. Oliver and Bartsch (2011) argue that hedonic and eudaimonic entertainment experiences are not “opposite ends of a continuum” (p. 76) and, accordingly, it has been suggested that hedonic experiences can precede eudaimonic experiences (Roth, Weinmann, Schneider, Hopp, Bindl, and Vorderer, 2017) and that pleasure and fun can be a byproduct of serious leisure experiences (Voigt, Howat, and Brown, 2010). In line with this notion, Rieger et al. (2014) showed that as people experience more hedonic entertainment, they also experience more eudaimonic entertainment.

Second, comments that focus on one aspect of entertainment may simultaneously influence hedonic and eudaimonic entertainment responses. This may occur because viewers often read comments cursorily and, thus, do not notice to which specific aspect of the media content comments are referring. Cameron and Geidner (2014) demonstrate such unspecific effects of the valence of textual social information. In their experiment, participants watched episodes of a talent show while either positive, negative, or no Tweets about the episodes appeared on the screen. Although the Tweets did not refer to the winning chances of the singer featured in the episode, the Tweets’ valence influenced the participants’ sense that the singer would win the contest.

Overall, it is thus possible that comments which focus on one entertainment aspect of an online video influence both the hedonic and eudaimonic entertainment responses of viewers. We thus propose the following research questions:

RQ1: How are viewers' eudaimonic entertainment experiences affected by comments in which previous viewers of an online video discuss their hedonic entertainment experiences?

RQ2: How are viewers' hedonic entertainment experiences affected by comments in which previous viewers of an online video discuss their eudaimonic entertainment experiences?

2 Method

To test the hypotheses and answer our research questions, a one-factorial between-subjects online experiment with five conditions was conducted. In the experiment, participants viewed an online video of a short animated film presented on the video platform YouTube. The participants were randomly assigned to one of five conditions which only differed with regard to the user comments that were shown before the video. After watching the video, participants filled in a survey. The study was granted Institutional Review Board approval by the ethical committee of the authors' university.

Participants

Students of a large European university were recruited through the university's research website, which regularly advertises studies. 213 individuals participated, most of them students who received extra credits for participation. Ten participants failed the suspicion check as they were aware of the goal of the study and were hence excluded from the sample. Thus, the final sample consisted of 203 participants (25.6% male, $M_{\text{age}} = 22.37$, $SD_{\text{age}} = 1.80$). The participants were randomly assigned to one of five conditions which differed with regard to how a series of user comments evaluated the hedonic or eudaimonic entertainment value of the video: high hedonic comments ($n = 35$), low hedonic comments ($n = 40$), high eudaimonic comments ($n = 41$), low eudaimonic comments ($n = 44$), and no comments (control condition) ($n = 43$).

Procedure

To participate in the experiment, participants followed a link on their own computers. This link led to a first page which provided information about the study. After giving consent to participate in the study, participants were asked

to answer a series of questions measuring demographic information. The next page included the experimental manipulation. In the four experimental conditions, participants were presented with different user comments about the video. Participants in the control condition did not see any user comments. Next, the same video was shown to all participants. The video was followed by a questionnaire which first measured the participants' entertainment experiences. Second, participants had to indicate to what extent they expected to watch a video that they would enjoy and to what extent they expected to watch a video that they would appreciate. These questions served as a manipulation check. Third, the questionnaire asked participants what they believed the goal of the study was. This question served as a suspicion check. The final page of the questionnaire contained a debriefing which revealed the true purpose of the study. This page also explained that the comments to which participants in the experimental conditions were exposed were fabricated for the study and that they had not actually been written by previous viewers of the video.

Stimulus materials

Before the film started, participants who were assigned to one of the four experimental conditions viewed a screenshot of five YouTube comments about the film. These comments were fabricated for the study by adapting existing comments posted on YouTube. In addition, the original names of the comments' authors were replaced by fictitious names and the profile pictures replaced with default Google avatars which are used when users do not provide a personalized picture. In each experimental condition, one neutral comment was included (i. e., "Anyone know where I can find the music of this film?"). Four comments were varied across the experimental conditions. Participants in the high hedonic condition viewed comments that emphasize how previous viewers of the video had high hedonic entertainment experiences in response to the video (e. g., "I had such a good time watching this hahaha"). The comments shown to participants in the low hedonic condition emphasize that previous viewers of the video had low hedonic entertainment experiences (e. g., "Such a boring movie"). Participants in the high eudaimonic condition viewed comments that emphasize how previous viewers of the video had high eudaimonic entertainment experiences (e. g., "Makes you think about how we treat those who are different"). Finally, participants who were assigned to the low eudaimonic condition viewed comments in which previous viewers expressed low eudaimonic entertainment experiences (e. g., "From this film we learn absolutely nothing – complete nonsense"). Participants in the control condition viewed only the video and no comments.

All participants viewed the same animated short film *Life is Beautiful* (Ben Brand, 2013), which is 8 minutes and 41 seconds long and available on YouTube (<https://www.youtube.com/watch?v=6fDoTmjHa1I>). This film depicts a main character who is physically very different from others because he is extraordinarily short. Due to his appearance, he leads an isolated and unhappy life. The main character decides to commit suicide to solve his problems. However, at the end of the story, a change of fortune occurs. After he dies, his spirit floats to heaven where it competes with other spirits for a new life. He wins and the final scene indicates that the character is reborn. Thus, the film includes a happy ending. The film's humoristic portrayal of the main character and its happy ending are likely to elicit hedonic entertainment experiences, while the serious topics addressed in it are likely to elicit eudaimonic entertainment experiences.

Measures

After viewing the video, participants filled out a questionnaire which measured their entertainment experiences as well as their expectations of the video. The survey presented several statements. Participants could indicate their degree of agreement with the statements on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*).

Expectations about the video. After participants watched the video, eight indicators were used to measure the expectations that participants had of the video before they watched it. This variable functioned as a manipulation check. Four statements measured whether participants expected to see a film that they would enjoy (e. g., “Before I watched the film I expected to see a funny film”). Four additional statements measured whether participants expected to see a film that they would appreciate (e. g., “Before I watched the film I expected to watch a film that I would appreciate”). Two of these eight items were negatively formulated and therefore reversed before total scores were calculated. A principal-axis factor analysis with oblique rotation (direct oblimin) was run to validate the dimensional structure of the indicators. According to the Kaiser criterion, three dimensions were identified. While seven items loaded highest on the first or second factor, one item only loaded on the third factor and was therefore dropped. In addition, one of the items measuring expected appreciation loaded highest on the factor measuring expected enjoyment and was therefore also excluded from the analyses. A reliability test indicated that the four items measuring participants' expected enjoyment formed a reliable scale (Cronbach's Alpha = .83). For each participant an average score of the items was calculated ($M = 4.19$, $SD = 1.09$). A second reliability test on the two items that measured participants' expectation

of appreciating the film showed that the two items formed a reliable scale (Cronbach's Alpha = .67). An average score was calculated for each participant ($M = 3.68$, $SD = 1.31$).

Hedonic and eudaimonic entertainment experiences. We used Wirth et al.'s (2012) scale which constitutes a comprehensive measure of hedonic and eudaimonic entertainment experiences. The scale includes three items which measure hedonic entertainment experiences (e.g., "Altogether it was fun watching the movie"). Fifteen items represent different dimensions of eudaimonic entertainment experiences, namely reflection on purpose in life/self-acceptance (e.g., "I feel good because this film has helped me to accept myself and my life"), autonomy (e.g., "I feel good because now that I have seen this film I feel that I am in charge of my own life"), competence/personal growth (e.g., "I have a good feeling because the film has made me reflect on myself and my life"), relatedness (e.g., "It felt good to feel compassion for the film's main character during the film") and activation of central values (e.g., "Precisely because the film was so distressing I had the feeling that the film delivered central values of life in an authentic way").

To verify that the items differentiate between hedonic and eudaimonic entertainment, we conducted a principal-axis factor analysis with oblique rotation (direct oblimin). The analysis showed that the three indicators of hedonic entertainment (eigenvalue = 2.10) and the 15 indicators of eudaimonic entertainment formed distinct factors. Thus, the indicators adequately distinguish between hedonic and eudaimonic entertainment. Unsurprisingly, the factor analysis also showed that the measure of eudaimonic entertainment was not completely unidimensional; that is, its indicators loaded on multiple factors. However, in relation to the number of indicators, only one of the eudaimonic entertainment factors had a substantial eigenvalue (eigenvalues = 8.88, 1.45, and 1.04).¹ Because only one eigenvalue was substantial and because we did not expect distinct effects of user comments on the sub-dimensions of eudaimonic entertainment, we summarized the indicators of eudaimonic entertainment in a mean index ($M = 3.65$, $SD = 1.10$). Similarly, the items measuring hedonic entertainment were averaged to create an overall score ($M = 3.73$, $SD = 1.53$). The results of a reliability analysis showed that the indicators of hedonic entertainment experiences (Cronbach's

¹ It is noteworthy that the Kaiser criterion (i.e., extract factors with an eigenvalue larger than 1) is prone to overestimating the number of factors (Zwick and Velicer, 1986), especially when the number of indicators is high (as in the case of the measure of eudaimonic entertainment). When we conducted an additional exploratory factor analysis and requested a two-factorial solution, a "eudaimonic" and a "hedonic" factor were identified, which corroborates that the instrument discriminates between the two dimensions of entertainment.

Alpha = .94) and the indicators of eudaimonic entertainment experiences (Cronbach's Alpha = .94) formed reliable scales.

Tests of statistical assumptions

We checked whether the dependent variables were normally distributed. Scores on variables with a skewness or kurtosis within the range of -2 and 2 were considered normally distributed. We found that expected enjoyment, expected appreciation, hedonic entertainment experiences and eudaimonic entertainment experiences were approximately normally distributed (see Table 1). In addition, we tested the assumption of homoscedasticity for each dependent variable. When the results showed that the variances were equal across conditions, Fisher's Least Significant Difference (LSD) post-hoc tests were run. If the variances were not equal among the conditions, Games-Howell post-hoc tests were used. Levene's test showed that the assumption of homoscedasticity held for expected enjoyment ($F(4,198) = 1.24$, $p = .29$), expected appreciation, $F(4,198) = 0.52$, $p = .72$, and for hedonic entertainment experiences, $F(4,198) = 0.34$, $p = .85$. However, the assumption was violated for eudaimonic entertainment experiences, $F(4,198) = 2.91$, $p = .02$.

Table 1: Descriptive statistics of dependent variables.

Variable	Min	Max	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
Hedonic entertainment experiences	1.00	7.00	3.73	1.53	-0.06	-1.04
Eudaimonic entertainment experiences	1.07	6.00	3.65	1.10	-0.12	-0.69
Expected enjoyment	1.75	6.50	4.19	1.09	0.12	-0.72
Expected appreciation	1.00	7.00	3.68	1.31	-0.03	-0.65

Randomization check

Participants' entertainment experiences may be affected by their gender and their genre preferences (Hixson, 2005; Oliver, Weaver, and Sargent, 2000). Therefore, we conducted a randomization check which assessed whether there existed systematic differences in gender, preference for sad films, and preference for comedies across conditions. Results of a chi-square test showed that the conditions did not differ with regard to participants' gender, $\chi^2(4, N = 203) = 4.32$, $p = .36$. Two analyses of variance (ANOVA) showed that the conditions did not differ with regard to participants' preference for sad films, $F(4,198) = 1.28$, $p = .28$ or

preference for comedies, $F(4,198) = 1.96$, $p = .10$. Hence, the randomization was deemed successful.²

Manipulation check

The manipulation of the comments could be considered successful if two criteria were met. First, participants in the high hedonic condition should expect to watch a film that they would enjoy more than participants in the low hedonic condition and the control condition. Second, participants in the high eudaimonic condition should expect to watch a film that they would appreciate more than participants in the low eudaimonic condition or in the control condition. Two analyses were performed to determine whether the manipulation of the comments was successful. First, an ANOVA was performed which compared the expectations to watch a film that is enjoyable across the high hedonic condition, the low hedonic condition, and the control condition. The results show that there was a difference in expected enjoyment between the three conditions, $F(2,115) = 26.79$, $p < .001$, part. $\eta^2 = .32$. Post-hoc tests showed that participants in the high hedonic condition had a higher expectation to see a film that they would enjoy ($M = 5.14$, $SD = 1.02$) than participants in the low hedonic condition ($M = 3.49$, $SD = 1.08$), $p < .001$, and participants in the control condition ($M = 4.51$, $SD = 0.87$), $p = .01$. Moreover, participants in the low hedonic condition had a significantly lower expectation to watch a film that they would enjoy ($M = 3.49$, $SD = 1.08$) than participants in the control condition ($M = 4.51$, $SD = 0.87$), $p < .001$.

Second, an ANOVA was performed in which the expected appreciation of participants in the high eudaimonic condition was compared to that of participants in the low eudaimonic condition and those in the control condition. Results of the analysis showed that participants in the three conditions differed with regard to their expected appreciation, $F(2,125) = 8.55$, $p < .001$, part. $\eta^2 = .12$. The post-hoc tests showed that participants in the high eudaimonic condition had a higher expected appreciation ($M = 4.49$, $SD = 1.26$) compared to participants in the low eudaimonic condition ($M = 3.55$, $SD = 1.18$), $p = .001$ and participants in the control condition ($M = 3.45$, $SD = 1.36$), $p < .001$. However, there was no significant difference between the control condition and the low eudaimonic condition, $p = .74$. Overall, the results showed that both conditions for the manipulation check to be successful were met.

² Because participants' preference for comedies was not normally distributed, we validated the findings using bootstrapped standard errors. This analysis corroborated the original findings.

3 Results

Tests of hypotheses

The hypotheses were tested using a multivariate analysis of variance (MANOVA) in which the five conditions were included as the independent variable and hedonic and eudaimonic entertainment experiences as the dependent variables. An inspection of Roy's Largest Root revealed that the user comments had a significant effect on the entertainment experiences, $F(4,198) = 3.10$, $p = .02$. To learn more about the specific pattern of results and to evaluate the hypotheses, post-hoc tests were run.

The first hypothesis stated that individuals who view high hedonic comments have stronger hedonic entertainment experiences than participants who viewed low hedonic comments or no comments. A post-hoc test showed a marginally significant difference between the hedonic entertainment experiences of participants in the high hedonic condition ($M = 3.83$, $SD = 1.57$) and those in the low hedonic condition ($M = 3.16$, $SD = 1.43$), $p = .06$. But there was no difference in hedonic entertainment experiences between participants in the high hedonic condition ($M = 3.83$, $SD = 1.57$) and those in the control condition ($M = 3.77$, $SD = 1.58$), $p = .86$. Thus, the first hypothesis received only partial support.

According to hypothesis 2, viewers who see high eudaimonic comments have stronger eudaimonic entertainment experiences than viewers who see low eudaimonic comments or no comments. The post-hoc test showed that there are no differences between the high eudaimonic condition ($M = 3.82$, $SD = 1.22$) and the low eudaimonic condition ($M = 3.58$, $SD = 1.06$), $p = .86$ or the control condition ($M = 3.75$, $SD = 0.88$), $p = .92$, rejecting hypothesis 2.

Analysis of research questions

The first research question asked how comments in which previous viewers of a video discuss their hedonic entertainment experiences affect new viewers' eudaimonic entertainment experiences. The results of the post hoc test showed that participants in the high hedonic condition ($M = 3.70$, $SD = 1.30$) did not differ from participants in the low hedonic condition ($M = 3.38$, $SD = 1.01$), $p = .76$ or from participants in the control condition ($M = 3.75$, $SD = 0.88$), $p = 1.00$ with regard to their eudaimonic entertainment experiences. In addition, no differences were found between the low hedonic condition ($M = 3.38$, $SD = 1.01$) and the control condition ($M = 3.75$, $SD = 0.88$), $p = .40$.

The final research question asked how comments in which previous viewers of a video discuss their eudaimonic entertainment experiences affect new viewers' hedonic entertainment experiences. The results of the post-hoc test showed that participants in the high eudaimonic condition ($M = 4.30$, $SD = 1.50$) had stronger hedonic entertainment experiences than participants in the low hedonic condition ($M = 3.16$, $SD = 1.43$), $p = .001$. In addition, the results showed that participants in the high eudaimonic condition ($M = 4.30$, $SD = 1.50$) had stronger hedonic entertainment experiences than participants in the low eudaimonic condition ($M = 3.58$, $SD = 1.43$), $p = .03$.

4 Discussion

The goal of this study was to explore the effects of user comments on viewers' entertainment experiences in response to an online video. The results of an experiment showed that individuals who saw user comments which indicated the video was enjoyable, had stronger hedonic entertainment experiences in response to the video than individuals who saw comments which indicated low enjoyment. Similarly, individuals who viewed comments which expressed high appreciation had stronger hedonic entertainment experiences than individuals who viewed comments which expressed low appreciation or low enjoyment. In contrast to hedonic entertainment experiences, we found that eudaimonic entertainment experiences were not affected by any type of user comments.

The findings of this study have two main theoretical implications. First, they suggest that the valence of user comments is the main predictor of entertainment responses and not so much their specific content, that is, whether they refer to hedonic or eudaimonic experiences. This result is in line with the findings of Shedlosky-Shoemaker et al. (2011), who found that the valence of reviews as opposed to their specific content affected viewers' enjoyment of a written narrative. However, based on our results it is unclear what mechanisms underlie the valence effects that were identified. A first explanation may be that the two dimensions of entertainment affect each other. Accordingly, factors which influence one entertainment dimension may have an indirect effect on the other dimension. In fact, an inspection of the correlation between hedonic and eudaimonic entertainment reveals that the two responses were related to each other, $r = .49$, $p < .001$. However, we also found that the hedonic and eudaimonic comments only affected hedonic responses; this contradicts the interpretation that spillover effects produced the results. A second explanation is that participants did initially recognize the difference between positive and negative comments

as well as the difference between hedonic and eudaimonic comments, but that they only relied on the valence as a heuristic when deciding on which aspects to focus on. Such an effect might have emerged because valence was the more easily applicable information (Price and Tewksbury, 1997) during the processing of the video. Future research should further investigate the specific mechanisms that underlie the effects of user comments on entertainment responses.

Second, and relatedly, our findings suggest that user comments rather influence hedonic than eudaimonic entertainment experiences. A reason for this finding may be that hedonic entertainment experiences are based on cognitively less demanding information processing compared to eudaimonic entertainment experiences, which are associated with careful thinking about the themes and topics discussed in a story (Lewis, Tamborini, and Weber, 2014). Because eudaimonic entertainment experiences require substantial cognitive resources and intrinsic motivation from the recipient, they may be less susceptible to influences of contextual factors such as user comments. In contrast, hedonic entertainment experiences are cognitively less demanding so that simple cues provided in user comments may be reason enough to engage in hedonic processing. In line with this reasoning, our results showed that participants had relatively low levels of eudaimonic entertainment experiences – possibly, because their intrinsic motivation to carefully reflect about the video during the study was low – and positive comments did not increase eudaimonic responses. In contrast, viewers' hedonic entertainment experiences were overall higher and were influenced more strongly by positive user comments. Still, further insights into the underlying processes that produce these results are required.

Overall, our findings expand our knowledge on entertainment experiences by suggesting that user comments influence entertainment experiences but that hedonic and eudaimonic entertainment experiences differ in their susceptibility to this social-context factor. We thus suggest that entertainment researchers should take into account the social information that contextualizes online media contents. Specifically, they should assess the valence of the social information that accompanies online media contents. As media content presented on social media is often presented together with social information, including the social information as a factor in future studies allows researchers to arrive at a clearer picture on the effects of these online contents.

Given that this study explored a relatively new topic, some limitations need to be discussed. The first limitations relate to the stimulus materials used in this study. Before watching the online video, participants in the experimental condition viewed a set of five comments about the video. These comments were fabricated for the study and consisted of one neutral comment and four positive or four negative comments. Hence, to the viewers of the comments it may have

seemed that all authors of the comments were unanimous in their evaluation of the video. This raises the question of how entertainment experiences are affected when user comments express a mix of positive and negative evaluations. Future studies should investigate how comment sections with a mixed valence influence viewer responses because they are likely to be prevalent on social media and video-sharing platforms.

Second, we followed related research (Waddell and Sundar, 2017; Winter et al., 2018) and employed one specific video stimulus in the experiment. This approach has been criticized because it can potentially affect the generalizability of the results, and it has been emphasized that clear rationales for the selection of the media stimulus are crucial (Slater, Peter, and Valkenburg, 2015). In the present study, we selected an animated short film because it both includes comedic and dramatic elements that are likely to elicit average levels of hedonic as well as eudaimonic entertainment. This ensured that potential effects of user comments are not suppressed by very weak or very strong entertainment responses. However, we cannot rule out that characteristics of the video constitute a boundary condition of the effects of user comments. For instance, because animated films have a relatively low level of realism, adult viewers' preference for realistic media contents (Konijn and Hoorn, 2004) may be an important determinant of eudaimonic experiences, and user comments may only play an ancillary role. Thus, the role of genre characteristics and genre preferences in the elicitation of entertainment responses should be investigated more closely.

Finally, the participants of this study were randomly assigned to experimental conditions and then 'forced' to read comments before watching the video. The forced exposure paradigm is a cornerstone of experimental communication research because it supports the internal validity of the findings (see Leshner, 2017). But it also may affect ecological validity. When using video-sharing websites such as YouTube, viewers can completely ignore user comments, read them while watching an online video, or read them after having watched the video. Although reading comments is a common activity on YouTube (Khan, 2017), it is, thus, not fully clear whether the effects identified in this study would also emerge among individuals who use YouTube outside of experimental settings. Indeed, our study increases our knowledge about how user comments affect entertainment experiences *when* comments are read. But it is an empirical question how frequently this boundary condition is fulfilled. Preliminary evidence by Waddell and Sundar (2017) suggests that the timing of exposure to social information does not make a substantial difference – which supports the ecological validity of our findings. Still, future research should address in more detail the role of the amount and timing of exposure to user comments in explaining entertainment experiences.

Future research can continue on the line set out by the present experiment by including additional factors that may influence the relationship between user comments and entertainment experiences such as social-context factors. Walther, Deandrea, Kim, and Anthony (2010) found that the extent to which viewers of a video identify with the authors of user comments influences effects of the comments on the viewers' evaluations of the video. Accordingly, the strength of the effects of comments on entertainment experiences may depend on the viewers' identification with the authors of the comments. By including additional factors, such as the identification with the posters of user comments, our understanding of entertainment responses to online media could be further refined.

Overall, this study contributed to entertainment research by addressing how an essential social-context factor in online environments influences recipients' responses to entertaining media content. The study showed that user comments can affect hedonic entertainment responses to online videos and that the valence of user comments is the main determinant of viewers' entertainment experiences. Thus, the way people process online videos depends on the social information which accompanies the videos.

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