Appreciation in the Face of Death: Meaningful Films Buffer Against Death-Related Anxiety

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Entertainment media are found to evoke appreciation when they deal with topics such as moral virtues, values, or questions of sense in life. Drawing upon terror management theory, we question whether meaningful media can also serve as anxiety buffer shielding against the threat of death, as they transport cultural worldviews and enhance self-esteem among recipients. Results of an experimental study ($N = 122$) confirmed that participants under mortality salience appreciated a meaningful movie more than participants in a control condition. Further, only a meaningful movie, not a pleasurable or an informative film, decreased the necessity to activate further anxiety buffers after mortality salience. The findings are discussed in relation to entertainment media as means to handle existential fears.

\textbf{Keywords:} Appreciation, Terror Management Theory, Mortality Salience, Meaningful Media, Anxiety Buffer.

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Think that you have to die someday, maybe this morning.

I think of it all the time, and so I play hooky from the office and let myself bask in the sun. (Pascal Mercier, 2008)

Traditionally, entertainment research has been guided by a hedonic perspective, assuming that the consumption of media entertainment predominantly serves the purpose of experiencing pleasure (Vorderer, Klimmt, & Ritterfeld, 2004). Accordingly, the entertainment experience has often been conceptualized in terms of hedonic pleasure and positive affect elicited by media content (Oliver & Raney, 2011). More recently, entertainment research has seen a shift from this primarily
hedonic view to “two-process models” of entertainment (Vorderer, 2011) proposing that entertainment experience consists of more than mere pleasure and is characterized by mixed affect and more complex experiences such as feeling inspired, touched, or moved, which have been described as “meaningful affect” (Oliver, Hartmann, & Woolley, 2012). These new theoretical models complement hedonic experiences with a second, eudaimonic dimension of entertainment referring to feelings of meaningfulness and the experience of moral and intellectual virtues (Oliver & Bartsch, 2010; Oliver & Raney, 2011).

One characteristic of this more “serious” form of entertainment therefore is its co-occurrence with troubling, challenging, or disturbing topics of life and humanity. For instance, Tsay, Krakowiak, and Oliver (2012) found that meaningful films reminded viewers of mortality. More concrete, they elicited higher levels of sad affect, which was associated with death-related thoughts. However, those films also elicited higher levels of elevating affect, which was associated with the thought that life has a meaning.

This points toward the idea that while we seek enjoyment from, for example, lighthearted comedies, we find appreciation in media of artistic value such as meaningful portrayals focusing on human virtues—for example, justice, courage, and truthfulness—encouraging the viewer to think about his life or even life in general (Oliver & Bartsch, 2011; Oliver & Hartmann, 2010). Meaningful films were for instance found to amplify feelings of self-worth or self-acceptance (Tesser, Millar, & Wu, 1988; Wirth, Hofer, & Schramm, 2012). Enhancing people’s sense of self-worth and meaning in life via meaningful entertainment matches the assumption described within terror management theory (Greenberg, Pyszczynski, & Solomon, 1986) that people need to cope with the potential terror emerging from death reminiscences by engaging in symbolic activities—such as basking in the sun as suggested by Mercier.

Terror management theory assumes that a coping mechanism is offered by striving for symbolic immortality that results from being a “valuable contributor to a meaningful, eternal universe” (Pyszczynski, Greenberg, & Solomon, 1999, p. 839). It is the individuals’ (a) cultural worldview, their meaningful conception of reality; and (b) their self-esteem as measurement of their value for the world, which have been found to buffer the threat of death, as so called anxiety buffers (for a review, see Hayes, Schimel, Arndt, & Faucher, 2010). More scientifically, the meaning of the universe is reflected in the cultural worldview one commits to and one’s individual value in the self-esteem resulting from being a “good [ ] boy or girl” in terms of that worldview (Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004, p. 454). Ultimately, meaningful movies might therefore be able to help in coping with one’s mortality by pointing out the eternal meaning or presence of values and virtues even after one’s own death.

A first study to assess experimentally the relationship between mortality salience and appreciation of meaningful entertainment was conducted by Hofer (2013). He provided initial evidence that mortality salience increased the appreciation of
meaningful media. The meaningful movie was evaluated as more valuable by participants who were aware of their own mortality in comparison to a control group, if simultaneously the participants declared an increased search for meaning in life. Yet this study cannot answer the question: (a) whether really meaningful media (in contrast to other media stimuli) are the driving force in altering reactions to entertainment when thinking about one’s own death; and (b) a test whether these meaningful films can provide a coping mechanism (i.e., an anxiety buffer) in defending against the threat of death has not been conducted so far.

This study aims at closing this gap by comparing entertainment experiences of meaningful and pleasurable media content under mortality salience in comparison to a control group, regarding the appreciation and enjoyment of movie stimuli. In addition, we examined whether meaningful media can help people to cope with death-anxiety by measuring whether media consumption decreases the subsequent engagement in other anxiety buffering processes in terms of the implicit activation of self-esteem. We believe that this study makes an important contribution to the notion of meaningful entertainment in context of terror management theory in two central ways: (a) Our results extend prior research by comparing mortality salience effects of meaningful versus pleasurable entertainment; and (b) Furthermore, this study addressed the question whether meaningful entertainment can serve an anxiety-buffering function as described within the framework of terror management theory. Based upon studies showing that the activation of one buffer makes the other redundant, we examined whether participants in the mortality salience condition would no longer need to cope their fear of death with another anxiety buffer after the reception of a meaningful movie as compared with other media stimuli.

Meaningful media in the context of and terror management theory

Terror management theory is based on the assumption that every human being is caught in the dilemma between the innate instinct of self-preservation and the cognitive ability to realize that death is inevitable (Greenberg et al., 1986). In order to manage the potential terror emerging from that insight, humans engage in a symbolic anxiety buffering process encompassing the defense of one’s cultural worldview and the preservation of one’s self-esteem. In the foreword to the book The Denial of Death by Ernest Becker (1973), Sam Keen wrote: “The root of humanly caused evil is not man’s animal nature, not territorial aggression, or innate selfishness, but our need to gain self-esteem, deny our mortality, and achieve a heroic self-image. Our desire for the best is the cause of the worst” (p. XIII).

Cultural worldview refers to the symbolical system one feels belonging to that will outlast the own end. Being part of a culture and engaging in its shared rites and values promises stability (Harmon-Jones et al., 1997). A meaningful reality allows the individual to transcend the own mortality (Castano, Yzerbyt, & Paladino, 2004). Self-esteem can be characterized by the belief that one is meeting or exceeding the standards and values inherent in that worldview (Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989). Two main hypotheses address the interplay of death and
defense: the mortality salience hypothesis and the anxiety buffer hypothesis (Burke, Martens, & Faucher, 2010).

Mortality salience
The mortality salience hypothesis predicts that individuals have an enhanced desire to defend their cultural worldview and self-esteem after death reminders. Based on the notion that cultural worldviews and accordant norms are fragile social constructions that need constant consensual validation (Festinger, 1954), after the induction of mortality salience, individuals prefer those who validate their worldview and derogate those who threaten it. Convincing evidence for this assumption emerges for instance from studies showing that individuals have been found to be appealed more by others sharing their religious (Greenberg et al., 1990; Kosloff, Greenberg, Sullivan, & Weise, 2010) or political values (Burke, Kosloff, & Landau, 2013) and to decrease their interest in dissimilar others (Frischlich, Rieger, Dratsch, & Bente, 2014) after death-reminders. Albeit the majority of studies tested the mortality salience hypothesis using cultural worldview defense as dependent variable (Burke et al., 2010), individuals have also been found to activate their self-esteem after the induction of mortality salience (Mikulincer & Florian, 2002). For example, Kosloff et al. (2010) could show that individuals under conditions of mortality salience as compared to a control group completed more words as self-esteem-related in a word-stem task—for instance, completing “L_ _ ED” as “LIKED” instead of “LURED” (Kosloff et al., 2010, p. 1054). Relatedly, Paulhus and Levitt (1987) found that after being confronted with death-related words, participants evaluated positive traits faster as applying to themselves as compared to neutral adjectives. Using a comparable approach, Frischlich, Kneer, and Bente (2011) could show that subjects evaluated positive adjectives faster when judging how far these traits applied to them only when their mortality had been made salient.

With regard to entertainment media, it has been suggested that “thinking and feeling about death, and also coping with one’s own mortality, are likely to play a major role in people’s search for meaning in life; this in turn implies that complex modes of entertainment experiences may somehow be connected to issues of death and dying.” (Klimmt, 2011, p. 36). Consequently, mortality salience should enhance the interest and liking of media validating one’s cultural worldview or self-esteem. Indeed, studying print media, Goldenberg, Pyszczynski, Johnson, Greenberg, and Solomon (1999) pioneered the idea that tragedies might serve terror management needs by allowing for a safe “fictional” confrontation with life’s finitude. Participants in their study evaluated tragic or nontragic excerpts from a novel. Indeed, participants in the mortality salience condition were touched more by the tragic excerpt and reported less enjoyment after the nontragic excerpt than control participants. In a related vein, focusing on paintings, Landau, Greenberg, Solomon, Pyszczynski, and Martens (2006) found that “meaningless” modern art was evaluated more negatively after mortality salience unless the abstract art was imbued with meaning.
The first study to relate directly terror management to different entertainment experiences and in particular to appreciation was conducted by Hofer (2013). He examined the effects of mortality salience on the perception of meaningful movies and included search for meaning in life as a potential moderator. Participants in his study were randomly assigned to either a mortality salience or a control condition. They watched a meaningful movie, *My Life Without Me* (Coixet, 2003), displaying how a terminally ill woman arranges the life of her beloved ones after her physical death. His results showed that after mortality salience in contrast to the control condition, participants appreciated the meaningful movie more. Building upon this result, we hypothesize that mortality salience leads to a higher appreciation of meaningful movies (H1).

For enjoyment, the opposite pattern emerged in Hofer’s study: Participants high in search for meaning in life reported less enjoyment of the movie after mortality salience. However, Goldenberg et al. (1999) found a higher enjoyment of a tragic novel than a nontragic one under mortality salience. Results from other studies also point toward emotional effects of terror management as response to medial stimuli (Kneer, Hemme, & Bente, 2011; Taylor, 2013). Directly addressing audio-visual media, Taylor (2013) found a higher preference for series such as *Sex and the City* or *Grey’s Anatomy* in a mortality salience group as compared with the control group. Although Taylor (2013) attributed this difference to the sexual content in these media, the chosen examples predominantly advocate intimate relationships and transport central cultural values such as friendship or professional success, which could have contributed to the effect. Supporting this idea, Kneer et al. could show that an advertisement transporting emotional values was evaluated better than informational commercials after mortality salience.

Recent research in the context of media use and well-being further amplifies the idea that serious or challenging media content can contribute to positive outcomes, such as mood repair and psychological recovery (Rieger, Bowman, Frischlich, & Bente, 2014; Rieger, Reinecke, Frischlich, & Bente, 2014). From a terror management perspective, being in a self-threatening state results in the wish to turn toward positive information (DeWall & Baumeister, 2007). While this evidence suggests that arousing states or serious media stimuli can increase enjoyment, research so far does not give a definite answer toward enjoyment after mortality has been made salient. We therefore question what effect mortality salience has on the enjoyment of movie clips (RQ1).

**Anxiety buffer**

The anxiety buffer hypothesis predicts that buffering structures that shield against the threat of death decreases the necessity to engage in further defenses after mortality salience (Greenberg, Pyszczynski, Solomon, Simon, & Breus, 1994).

For example, dispositional high self-esteem has been shown to reduce the necessity to defend one’s worldview after mortality salience (Harmon-Jones et al., 1997) and activating one component of the anxiety buffer system reduces the necessity for the other after the induction of mortality salience (Arndt, Greenberg, & Cook, 2002).
Supporting this assumption, Schmeichel and Martens (2005) found that after having written about one’s most important value, mortality salience no longer fostered the derogation of those not sharing one’s worldview.

Consequently, if meaningful media are preferred under conditions of mortality salience as they validate the symbolical anxiety buffer system, meaningful films might serve as an anxiety buffer against death-related thoughts themselves. If so, individuals should no longer need an additional buffer to defend against mortality salience after the reception of a meaningful movie. As such films often transport central values and cultural worldviews, and have been found to motivate behavior according to these norms (Oliver et al., 2012), we focused on self-esteem activation in order to realize the complementary component of the symbolical anxiety buffer.

For fans of a specific music genre, it could already be demonstrated that listening to this music after mortality salience decreased the necessity to defend one’s cultural worldview (Study 1) or one’s self-esteem (Study 2) (Kneer & Rieger, in press): Based on this research, we examined the implicit activation of self-esteem-related concepts as a measure for the ongoing self-esteem buffering needs (Kosloff et al., 2010). We predicted that participants whose mortality salience had been made salient would implicitly activate self-esteem fostering aspects after they watched an informative or a pleasurable movie in order to defend against the ongoing threat of death but no longer after the meaningful movie (H2). That is, we expected participants to activate implicit self-esteem and respond faster to self-esteem adjectives after induction of mortality salience in all conditions except when a meaningful movie was presented.

In relation to this assumption and the idea that meaningful films can serve as anxiety buffer, we also questioned the relationship between appreciation and self-esteem activation (RQ2). If appreciation of a meaningful film indeed serves as a coping mechanism to deal with the threat of one’s own death, it should be positively related to self-esteem activation (longer response latencies indicating less need to engage in self-enhancement as anxiety buffer).

To expand previous work on the role of entertainment experiences to buffer against mortality salience our research design differed from prior studies in two ways: (a) In Hofer’s (2013) study only a meaningful film was used as stimulus. As such, his design cannot rule out whether mortality salience influences the appreciation and enjoyment of any media stimulus used to distract from the fear of death or just meaningful stimuli specifically. (b) Relatedly, it has been hypothesized that meaningful media stimuli provide the recipients with feelings of self-worth, self-acceptance, and moral values and virtues (Oliver et al., 2012; Wirth et al., 2012) and thereby can serve as anxiety buffer against self-threatening states, such as mortality salience. Therefore, our design included a measurement of subsequent anxiety buffer activation test whether participants would still engage in self-esteem defenses after the consumption of meaningful media.

To test our hypotheses and research questions, we realized a 2(Priming: Mortality salience versus Control) × 3(Movie Stimulus: Meaningful versus Pleasurable versus Informative movie) between-subjects design.
Method

Participants
A total of 122 college students (104 women) participated. They were on average 24.96 years ($SD = 6.81$) old (range 18–52). Participants were randomly assigned to one of the six experimental conditions: mortality salience and meaningful film ($n = 22$), mortality salience and pleasurable film ($n = 22$), mortality salience and informative control film ($n = 20$), control and meaningful film ($n = 19$), control and pleasurable film ($n = 19$), and control and informative control film ($n = 20$). The groups did not differ with regard to gender, $\chi^2(2) = 0.14$, $ns$, or age, $F < 1$.

Procedure
The experiment took place at a laboratory at a large Western university. Participants took part for course credits in a study about movie perception. After their arrival they were placed in separate cubicles, equipped with notebooks from the same type and headphones in order to avoid social contagion. After signing an ethical consent, participants put on the headphones and started the experiment via mouse click. The whole experiment was programmed using OpenSesame (Mathôt, Schreij, & Theeuwes, 2012). In a first step, participants completed a baseline measure of their self-esteem activation before they answered the search for meaning in life questionnaire. Then, they were assigned to the mortality salience or the control condition. The manipulation of mortality salience was done by a frequently used method (Goldenberg et al., 1999; Hofer, 2013; Rosenblatt et al., 1989): Participants in the mortality salience condition answered two open-ended questions about their death. In contrast, participants in the control condition wrote about watching television. In detail, the first question asked “what do you think will happen to you when you (physically) die (/watch television)?” The second question was “which emotions arise in you when you think about your own death (/watching television)?” Participants had 5 minutes to complete this task.

Afterward, one of three movie stimuli (meaningful, pleasurable, or informative) was shown for another 5 minutes, before self-esteem activation was measured for the second time. Subsequently, appreciation and enjoyment were measured before in the last step the demographic variables were examined. After the last question, participants were thanked and fully debriefed.

Media stimuli
The media stimuli were selected via pretest. Based on the notion that meaningful media are characterized by stimulating mixed affective responses (Oliver et al., 2012; Wirth et al., 2012), a total of 17 movie clips were tested for the affect they elicit by $N = 71$ subjects ($n = 45$ female, $M_{age} = 28.31$, $SD_{age} = 9.39$) in an online survey. After each video, participants responded to the positive and meaningful affect subscales developed by Oliver et al. (2012) on a 7-point scale (1 = “not at all,” 7 = “very much”).
The film that scored the highest on the positive subscale ($M = 4.08$, $SD = 1.62$), a scene from *Along Came Polly* (scene length: 00:05:08; Hamburg, 2004), was chosen as pleasurable stimulus. Consequently, the scene scoring highest on mixed affect, ($M = 4.78$; $SD = 1.50$), a scene from *Amélie* (scene length: 00:04:59; Jeunet, 2001), was chosen to represent the meaningful movie. A documentary on caffeine (scene length: 00:05:25; Wagner, 2011), which scored only mediocre on both positive and meaningful affect, represented the informative film ($M_{positive} = 3.39$, $SD = 1.51$; $M_{mixed} = 1.84$, $SD = 1.01$).

**Measures**

**Search for meaning in life**
Search for meaning in life was measured using Steger, Frazier, Oishi, and Kaler (2006) scale (e.g., “I am looking for something that makes my life feel meaningful”; $\alpha = .79$, $M = 3.02$, $SD = 0.71$). Participants answered on a 5-point Likert scale (1 = “I do not agree at all,” 5 = “I totally agree”).

**Appreciation and enjoyment**
The evaluation of the media stimuli themselves was measured using three scales by Oliver and Bartsch (2010). Appreciation was operationalized via the thought-provoking (e.g., “The movie was thought provoking”) and lasting impression scales (e.g., “I know I will never forget this movie”), and enjoyment via the fun scale (e.g., “It was fun for me to watch this movie”). Each scale consists of three items and was answered on a 7-point scale (1 = “I do not agree at all”; 7 = “I totally agree”). A principal axis factor analysis with promax rotation ($\kappa = 4$) including the items of the thought-provoking, lasting impression, and fun scale (see also Hofer, 2013) confirmed the distinction: Two factors resulted which explained 74.48% of total variance. As expected, all items of the subscales thought-provoking and lasting impression loaded high on one factor (all factor loadings $> .50$, Eigenvalue: 5.89). Following Hofer’s (2013) procedure, items were aggregated to represent appreciation (Cronbach’s $\alpha = .93$, $M = 3.87$, $SD = 1.73$). Conversely, all items of the fun scale loaded high on the other factor (all factor loadings $> .50$, Eigenvalue: 1.36). They were aggregated to represent enjoyment (Cronbach’s $\alpha = .95$, $M = 5.60$, $SD = 1.61$).

**Self-esteem activation**
Based on former research, showing a higher implicit activation of self-esteem-related concepts after mortality salience (Kosloff et al., 2010), we used a response-latency-based implicit measure to examine self-esteem activation. More precisely, drawing upon research on self-evaluation (Mussweiler & Bodenhausen, 2002), participants evaluated a total of 20 positive (such as “intelligent”) and 20 negative (such as “cruel”) traits on a 9-point scale in how far these traits would apply to them (1 = “totally not,” 9 = “totally”). This procedure was already used before in media psychological research to assess anxiety-buffering characteristics (Kneer & Rieger, in press). Activation was measured via response latencies, whereby smaller latencies indicated a higher
implicit accessibility of self-esteem components. It had been shown that after a mortality salience induction, but not in a control group, participants had smaller response latencies for positive than negative traits in this task, indicating an activation of the self-esteem component of the anxiety buffer (Frischlich et al., 2011). To control for preexisting differences in self-esteem activation (Schmeichel et al., 2009), the adjectives were presented twice: The first measurement serving as baseline and the second measure (post) was performed after the participants had watched the movie clip. Item order was randomized. For the dependent variables, response latencies for the positive adjectives and for negative ones were aggregated for the baseline and dependent measure (postexposure) after having been controlled for outliers using a z-criterion of $z_{absolut} > 3$ (Field, 2009).

Results

Appreciation and enjoyment
H1 predicted mortality salience to increase appreciation of the meaningful film as compared with the pleasurable and the informative stimulus. The hypothesis was tested via 2 (Priming: Mortality salience versus Control) × 3 (Movie Stimulus: Meaningful versus Pleasurable versus Informative) ANOVAs and a priori contrasts based on previous studies (Hofer, 2013). The main effect for Movie Stimulus, $F(2, 113) = 42.86$, $p < .001$, $\eta^2_p = .43$, confirmed that participants appreciated the meaningful film the most ($M = 5.41$, $SD = 1.30$) and the pleasurable film the least ($M = 2.71$, $SD = 1.26$), with the informative film scoring in-between ($M = 3.59$, $SD = 1.42$). The main effect for Priming reached marginal significance, $F(1,113) = 2.95$, $p = .089$, $\eta^2_p = .03$, whereas the interaction failed to reach significance, $F(2,113) = 0.54$, ns.

To test the specific assumption that the meaningful film stimulus would increase appreciation under mortality salience, we used contrast weights to formalize this prediction: Appreciation should be highest in the mortality salience × meaningful film condition (contrast weight: 5) compared with all other conditions (contrast weights: −1). This contrast analysis reveals that participants under mortality salience who watched a meaningful film excerpt appreciated this stimulus more than participants in all other conditions, $t(113) = 6.71$, $p < .001$ (see Figure 1).

RQ1 asked for the influence of mortality salience on the enjoyment of the three movie types. To answer this question, the same 2 × 3 ANOVA was conducted on enjoyment. Again, the main effect for Stimulus reached significance, $F(2,116) = 4.42$, $p < .05$, $\eta^2_p = .07$. Interestingly, the meaningful movie ($M = 6.19$, $SD = 1.28$) was enjoyed most, followed by the pleasurable ($M = 5.39$, $SD = 1.80$) and the informative stimulus ($M = 5.20$, $SD = 1.57$). All other effects failed to reach significance, all $F < 1$. Means and standard deviations are depicted in Table 1.

Self-esteem activation
H2 stated that a meaningful film could serve as anxiety buffer under mortality salience and thus reduce the necessity to activate the self-esteem component of the
symbolical anxiety buffer, whereas a similar effect was not expected for the pleasurable and the informative movie stimulus or the control condition. Therefore, we expected participants in all mortality salience conditions to show implicit self-esteem activation except for the ones who watched the meaningful film. To test this hypothesis, we conducted a $2(\text{Priming}) \times 3(\text{Film Stimulus}) \times 2(\text{Time: Baseline vs. Post})$ mixed ANOVA with implicit self-esteem as the dependent variable, operationalized as response latencies to positive adjectives before and after the movie stimulus. The specific assumption was tested using a priori contrasts.

All means and standard deviations are reported in Table 1. The ANOVA revealed a main effect for Time, $F(1,112) = 49.65, p < .001, \eta^2_p = .3$: Participants were faster to react to the adjectives at the second time of measurement ($M = 1.78\, \mathrm{s}, SD = 0.50\, \mathrm{s}$) than at the first time ($M = 1.98\, \mathrm{s}, SD = 0.49\, \mathrm{s}$). The interaction between Time and Priming did not reach significance, $F(1,112) = 2.34, ns$. The three-way interaction did not reach significance either, $F(2,112) = 0.92, ns$. However, the interaction between Time and Film Stimulus was significant, $F(2,112) = 6.09, p < .05, \eta^2_p = .10$. Single comparisons (LSD) revealed that over time, both participants in the pleasurable movie condition as well as in the informative movie condition reacted faster ($ps < .001$). Participants in the meaningful movie condition did not ($p = .22$; Table 2).

Table 1 Means and Standard Errors for Enjoyment of the Meaningful, Pleasurable, and Informative Film Stimulus Split by Condition

<table>
<thead>
<tr>
<th>Priming</th>
<th>Meaningful</th>
<th>Pleasurable</th>
<th>Informative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality salience</td>
<td>6.27$^a$ (.34)</td>
<td>5.50$^{a,b}$ (.34)</td>
<td>5.05$^b$ (.35)</td>
</tr>
<tr>
<td>Control</td>
<td>6.09$^a$ (.36)</td>
<td>5.26$^a$ (.36)</td>
<td>5.35$^a$ (.35)</td>
</tr>
</tbody>
</table>

*Note: Different subscripts per row indicate single comparisons (LSD) to be significant at $p < .05$.**
Table 2  Mean Response Latencies and Standard Deviations (in Brackets) in Seconds, Split by Priming (Mortality Salience vs. Control), Stimulus (Meaningful, Pleasurable, and Informative), and Time (Baseline vs. Post)

<table>
<thead>
<tr>
<th>Priming</th>
<th>Mortality Salience</th>
<th>Control</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Baseline</td>
<td>Post</td>
</tr>
<tr>
<td>Positive adjectives</td>
<td>2.02a (0.45)</td>
<td>2.05a (0.66)</td>
</tr>
<tr>
<td>Meaningful</td>
<td>1.86a (0.56)</td>
<td>1.59b (0.51)</td>
</tr>
<tr>
<td>Pleasurable</td>
<td>1.90a (0.42)</td>
<td>1.66b (0.38)</td>
</tr>
<tr>
<td>Informative</td>
<td>2.14a (0.52)</td>
<td>2.03a (0.79)</td>
</tr>
<tr>
<td>Negative adjectives</td>
<td>2.00a (0.71)</td>
<td>1.65b (0.72)</td>
</tr>
<tr>
<td>Meaningful</td>
<td>2.01a (0.37)</td>
<td>1.71b (0.39)</td>
</tr>
</tbody>
</table>

Note: Different subscripts in lines and rows indicate significant single comparisons at \( p < .05 \).

For our hypothesis, a specific pattern of activation across the six experimental conditions was predicted. As response latencies did not differ across conditions during baseline testing (\( F < 1 \)), we calculated differences (response latencies \( t_2 - t_1 \)) for the contrast analysis. We again used contrast weights in order to test the assumption that response latencies should be higher in the mortality salience × meaningful film stimulus condition (contrast weight: 5) than in any other condition (contrast weights: −1). This analysis revealed that participants under mortality salience who watched a meaningful film stimulus showed a significantly lower difference than any other condition, \( t(112) = 3.76, p < .001 \). In all experimental conditions, response latencies were smaller at \( t_2 \), except for the mortality salience × meaningful film condition.

On the one hand, this result speaks for the specificity of meaningful media stimuli and could possibly hint at the anxiety-buffering effect of meaningful media stimuli. On the other hand, a second possibility would be that meaningful media demand more cognitive capacity that interferes with response latencies right after having watched the movie, for example, because meaningful content evokes more involvement (Rieger, Reinecke, & Bente, in press), and is considered to be more thought-provoking (Bartsch, Kalch, & Oliver, 2014). To rule out this possibility, we additionally looked at response latencies (baseline vs. post) for the meaningful media stimulus in the control condition. There was a significant effect of Time, \( t(18) = 2.75, p < .05, d_z = .63 \). Thus, participants in the control condition did also react faster to positive adjectives after having watched the meaningful movie stimulus.

Concerning negative adjectives, the same pattern was found. The ANOVA revealed a main effect for Time, \( F(1,113) = 79.63, p < .001, \eta_p^2 = .41 \): Participants were faster to react to the adjectives at the second time of measurement (\( M = 1.78 \) s,
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SD = 0.56 s) than at the first time (M = 2.08 s, SD = 0.57 s). The interaction between Time and Priming did not reach significance, F(1,113) = 1.98, ns. The three-way interaction did not reach significance either, F(2,113) = 0.28, ns. However, the interaction between Time and Film Stimulus was marginally significant, F(2,113) = 3.00, p = .05, η² = .05. As response latencies did again not differ during baseline testing (F < 1), we calculated the same differences for negative adjectives and also performed a contrast analysis. Participants under mortality salience who watched a meaningful film stimulus had a lower difference in response latencies than any other condition, t(113) = 2.44, p = .02.

To relate this result to our findings for appreciation and enjoyment, we further looked at the correlations between our dependent variables (RQ2). While enjoyment and self-esteem activation did not correlate significantly with each other, r = .03, ns, we found appreciation and self-esteem to be related, r = .22, p = .02. The higher the appreciation, the higher were the response latencies. Thus, in sum, these results speak for the assumption that meaningful media content is able to serve as anxiety buffer after mortality salience and thus support H2 (Figure 2).

Discussion

The aims of the present study were (a) to extend prior research by comparing mortality salience effects for meaningful versus pleasurable and informative entertainment media and (b) to address the question whether meaningful movies can serve as anxiety buffer for people whose mortality had been made salient. Our results demonstrated that meaningful media indeed serve terror management needs.

More precisely, we first tested the hypothesis that mortality salience leads to an increase in appreciation specifically of a meaningful film, but not of a pleasurable or informative film (H1). Our results demonstrated that only the meaningful film was appreciated more under mortality salience. There were no such differences for the pleasurable or the informative film. These results are in line with previous research, replicating the notion that meaningful media are appreciated more after...
death reminders (Hofer, 2013). Additionally, this study nourishes the idea that this effect was unique for meaningful media.

It has to be noted that while Hofer (2013) found mortality salience to affect predominantly individuals scoring high on search for meaning in life, search for meaning in life did not predict appreciation, $\beta = -.02$ in this study.

In RQ1, we questioned the influence of mortality salience on the enjoyment of different movie clips. In this case, our findings did not reveal any effects of mortality salience for the enjoyment of any of the movie stimuli. Yet, the three films were enjoyed to a different extent: Enjoyment of the meaningful film was higher than for the informative. Our single comparisons (see Table 1) shed some light on the idea that mortality salience might foster emotionality (operationalized through enjoyment here) in participants: In comparison to the informative movie clip, participants under mortality salience reported more enjoyment for the meaningful movie stimulus. This differs from Hofer’s (2013) finding: He found mortality salience to have a negative effect on enjoyment, given that participants scored high on search for meaning in life. Yet, in his study a meaningful movie stimulus was chosen that featured death reminders itself (*My Life Without Me*). In contrast, our stimulus for the meaningful movie condition (*Amélie*) did not encompass death reminiscences and therefore more closely resembles the results of Goldenberg et al. (1999), who did not find any differences in perceived enjoyment of a tragic novel between mortality salience and a control condition.

Our results to some extent reflect research on terror management theory which found participants to more often turn to positive information after mortality salience (DeWall & Baumeister, 2007) and also mirrors media psychological research on socioemotional series (Taylor, 2013), emotional advertisements (Kneer et al., 2011a), or mood repair and recovery (Rieger, Bowman, et al., 2014). These findings further resemble arousal transfer as described by Zillmann (1971): After disturbing or challenging media content, the arousal of this experience is transferred to later evaluations. Arousal associated with death-related thought could thereby enhance enjoyment with meaningful stimuli. Yet, future research is needed to disentangle effects for enjoyment and mortality salience.

Beyond testing the effects of mortality salience on movie evaluation, we also extended former research by testing whether the increased appreciation of meaningful films under mortality salience might root in the anxiety-buffering function of this genre. This study merged two lines of research that have often been discussed to complement each other, namely terror management and appreciation (Klimmt, 2011; Oliver et al., 2012), by directly examining whether media stimuli can serve as anxiety buffer. Mortality salience effects were tested by implicitly measuring self-esteem activation in response to mortality salience versus a control topic. Usually one would expect people who are aware of their own mortality to score higher on self-esteem measures due to self-enhancement (Lambert et al., 2014; Pyszczynski et al., 2004). Yet, our findings show that participants in the mortality salience condition who watched a meaningful film did not self-enhance, as opposed to those who watched
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a pleasurable or an informative film after the induction of mortality salience. This suggests that meaningful media hold a specific position when handling death-related thoughts. We thereby provide initial evidence that meaningful content can serve as anxiety buffer whereas pleasurable and informative media cannot (H2). Additionally, our findings suggest that there is a direct link between appreciating a movie and a decreased need to self-enhance; the more people appreciated a media stimulus, the longer were their response latencies (RQ2).

With regard to the results found for response latencies, it has to be noted however that the pattern we found can at least in part be explained by a practice effect: Response latencies at t2 are shorter than at t1 (Forbach, Stanners, & Hochhaus, 1974). Therefore, we cannot rule out the point that faster reaction times at t2 might not only resemble self-esteem activation but also mere habituation. Nevertheless, future studies should try to disentangle those effects to clearly demonstrate why participants under mortality salience who watch a meaningful film do not show patterns ascribed to be either self-esteem activation or practice effects.

Regarding terror management theory, in the face of death a meaningful movie may serve as anxiety buffer because it provides the viewer with the idea of persistence of enduring values and a meaning in life. After all, generating meaning is one way of overcoming the distress and anxiety caused by the salience of one's own death (Park & Folkman, 1997). The meaningful film stimulus we used might have been able to generate meaning because it dealt with memories, the experienced satisfaction of helping others and love for estranged family members, thus making accordanant values salient. Movies dealing with serious topics on the one hand appear to elicit sad affect but on the other hand also approach thoughts about the transience of life. Those thoughts—sadness in combination with reminiscence of life's beauty or worth—might be able to serve as means to display a valuable worldview or trigger thoughts of self-worth within one's own life. Relatedly, mortality salience could also be considered a moderator when it comes to experiencing media. Self-threatening thoughts (such as mortality salience) might be able to moderate the effect between the valence of a stimulus (e.g., mixed affect in meaningful movies) and the subsequent experience; in a way that self-threats intensify the experience of entertainment media.

In regard to these last comments, it has to be noted that a number of empirical studies found close relationships to serve as anxiety buffer when reminded of one's own mortality (e.g., Arndt, Greenberg, Schimel, Pyszczynski, & Solomon, 2002; Taubman-Ben-Ari, Findler, & Mikulincer, 2002). Our meaningful film addresses the issue of relationships and their importance, but so did the pleasurable film. We therefore suppose that the anxiety-buffering effect of the meaningful film may not only be attributed to the depiction of relationships, because otherwise we would have found a buffering effect of the pleasurable film as well.

To a greater degree, movies depicting one's own values or supporting one's moral virtues might be beneficial for self-esteem. Eudaimonic entertainment experiences were for instance associated with the experience of mastery (Rieger, Reinecke, et al., 2014). Frischlich, Rieger, and Rutkowski (2014) found participants who chose an
avatar to play in a simulation game to report higher identification with the virtual team after mortality salience only when their team served a self-esteem buffering function (in this case: successful team).

In particular, the concept of elevation as response to meaningful media content connects to the idea of entertainment being able to provide help against the fear of death: “[...] elevation may be experienced in response to sad films that feature characters displaying courage or facing hardship, dramas that grapple with issues of human value, or even more serious romances that depict the power of love in lifting the human spirit” (Oliver et al., 2012, p. 362). The importance of portrayed values or moral virtues should be addressed in more detail in future research. For instance, in a terror management study on online dating, results suggested that under mortality salience the similarity in terms of values and hobbies of a potential dating partner was important for dating intentions. Participants showed decreased dating intentions, when a potential dating partner of their in-group (same cultural background) was dissimilar to them (Frischlich et al., 2014). This finding corroborates the idea that shared values or moral questions are important in response to mortality salience. It also challenges Klimmt’s (2011) comment on “solace” (p. 36): Maybe solace can only be provided by similarity—be it in culture, value, vision of life, or morality.

Limitations and directions for future research

Some limitations have to be acknowledged with regard to the present study. First, our informative film was appreciated more than the pleasurable film. One reason could be that the clip imparted knowledge in an interesting way. A recent study by Roth, Weinmann, Schneider, Hopp, and Vorderer (2014) also found that informative television programs (in this case, serious political talk shows) can be appreciated. Furthermore, the topic of the excerpt was about the effects of caffeine, a topic that might be relevant for most students. So the excerpt could have provoked thoughts about one’s own consumption behavior and thereby provoked thoughts and lasting impressions. Although the informative movie did lead to appreciation in the viewers, it did not yield the same results as our meaningful movie condition as far as mortality salience effects on appreciation or self-esteem activation are concerned. These results suggest that there are special characteristics inherent in meaningful narratives that speak to people whose mortality threat was salient. One idea—in line with thoughts on elevation (Oliver et al., 2012) or solace (Klimmt, 2011)—is that meaningful movie stimuli activate central life values. This was also demonstrated by Wirth et al. (2012), who found eudaimonic entertainment experiences to encompass different subdimensions, such as the activation of values or feelings of personal growth. In light of the results of the present study, future research should address the differences in eudaimonic entertainment experiences more closely with regard to terror management effects.

In addition to that, our experiment only used one single stimulus per condition. We therefore cannot rule out the possibility that our results are based on specific characteristics of the used stimuli. Whereas studies relying on the selective exposure
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paradigm or stimulus sampling are able to make a point about the effects of choosing a specific stimulus or can compare effects of various stimuli of one category, forced exposure experiments (with a single stimulus per condition) are limited in the generalizability of their results.

Related research in the context of eudaimonic versus hedonic media or terror management relies on the same logic to present participants with only one specific stimulus, such as testing two novel excerpts (Goldenberg et al., 1999), two or more different film clips (Rieger, Bowman, et al., 2014; Rieger, Reinecke, et al., 2014; Wirth et al., 2012), two different songs as music stimuli (Kneer et al., 2011b), a film stimulus with or without music (Bartsch et al., 2014), or even one movie only (Hofer, 2013; Hofer, Allemand, & Martin, 2014). Although we used pretested material, supporting the internal validity of our design, future studies should use a broader variety of film stimuli, and most importantly test different stimuli (less appreciative) as control stimuli. Taking into account that all of these cited studies found similar effects — although based on different single stimuli — it can be concluded that material found to be distinguishable on one dimension (e.g., tragic versus nontragic, hedonic versus eudaimonic, positive versus negative affective valence, with or without music) is able to — at least in part — produce generalizable results. Nonetheless, those findings also point toward the necessity to investigate which basic mechanisms for instance in meaningful films do contribute to the anxiety buffering effect. More importantly, the preponderance of studies with single stimuli also demonstrates that more research designs using for instance stimulus sampling should be employed.

Second, in a related vein, one limitation of research on meaningful media using excerpts of these movies only is that meaning was found to envelop over time (Leontiev, 2013). This concerns the length of the media stimuli used in the study. All three video clips were of similar length and lasted about 5 minutes. Consequently, media exposure in the present study was limited to a short time period. Future studies on the relationship between meaning and mortality salience should replicate the findings of the present study using longer exposure times. However, the exposure time in Hofer’s (2013) study was 30 minutes. As our findings for appreciation replicate his results, this can be seen as initial evidence that mortality salience effects are stable over time (at least between 5 and 30 minutes).

Third, although we relied on the standard procedure to induce mortality salience (Burke et al., 2010; Rosenblatt et al., 1989), the external validity of open ended questions to provoke thoughts about one mortality can be questioned. A replication of our results using mortality salience inductions that occur naturally in daily life (such as walking past a graveyard; see Jonas, Schimel, Greenberg, & Pyszczynski, 2002; Pyszczynski et al., 1996) is thus desirable to examine the everyday interaction of existential concerns and media consumption.

Fourth, all people are afraid of death and apply, consciously or unconsciously, different strategies in order not to altercation with their own mortality and the linked anxieties. Hereby, terror management theory differentiates between distal and proximal anxiety buffers (Pyszczynski et al., 1999). Comparing ours with Hofer’s (2013)
design, the movie sequence he used was directly related to death (Coixet, 2003). To see a person dying in a movie is conscious, rational, and immediate. On the one hand, this could produce a cathartic effect which helps people to push death-related thoughts away through acknowledging “It is not me” or “This is fictional” (Goldenberg et al., 1999). On the other hand, Hofer’s results could be interpreted as a proximal anxiety buffer in the context of terror management because during the “delay” (hence the movie reception time), participants in his experiment were continuously confronted with death-related topics. We used a meaningful stimulus without any death reminders. Therefore, our “delay” most closely resembles distraction as it is used in other studies to trigger distal defenses (Frischlich et al., 2014). However, our design did not directly test for this assumption as it did not contain a delay between mortality salience induction and watching the film excerpt. So, a further limitation of this study is that we cannot determine whether the meaningful movie worked as a proximal or distal defense mechanism. These differences should be explored in future studies.

An interesting aspect would also be the examination concerning gender and age of the participants. Although both factors were equally distributed among experimental conditions, our study had a preponderance of females and also a rather young sample (students). Recent research demonstrated that older viewers appreciate meaningful movies more than younger ones (Bartsch, 2012; Hofer et al., 2014). Relatedly, mortality salience effects were found to be stronger for elderly people (Taubman Ben-Ari & Findler, 2005) because they are faced with their mortality on a more regular basis. For gender, research on the sad film paradox (Oliver, 1993) for instance demonstrated that females reacted more emotionally to sad films than men. As far as terror management theory is concerned, the meta-analysis by Burke et al. (2010) reported no gender differences in response to mortality salience. However, women may consciously fear death more than men, which would result in more unconscious defenses among men (Greenberg et al., 1994). Our results are therefore only generalizable for other student samples. It appears promising to investigate the interplay between mortality salience and meaningfulness in different age groups as well with regard to gender effects. For older and more men-based samples, one could expect stronger unconscious distal defense effects.

**Conclusion**

Overall, this study provides significant insights into the effects of mortality salience on the appreciation of entertainment media. Furthermore, our findings provide first evidence that meaningful media can serve as anxiety buffer against the fear of death. This, on the one hand, underlines the usefulness of research on appreciation in the context of more poignant states of mind. On the other hand, the results can be discussed concerning the role of entertainment media in handling existential fears. In light of the current results, one first response could be: Better watch a meaningful movie than bask in the sun.
Note

1 Additional analyses on eudaimonic entertainment experiences indeed revealed that the activation of central values differed significantly between film conditions, $F(2, 119) = 75.52; p < .001, \eta^2_p = .56$. A meaningful stimulus led to higher activation of values ($M = 3.55, SD = .94$) than a pleasurable ($M = 1.71, SD = .73$) and an informative stimulus ($M = 1.50, SD = .80$).

References


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