Research Reports

The Effect of Mortality Salience and Type of Life on Personality Evaluation

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Abstract

Mortality salience, or awareness of the inevitability of one's own death, generates a state of anxiety that triggers a defense mechanism for the control of thinking that affects different human activities and psychological processes. This study aims to analyze the effect of mortality salience on the formation of impressions. The sample comprised 135 women who made inferences about a woman's personality from information about her life (type of life, LT: positive, negative), provided through five words, all positive or negative, that appeared surrounding a photograph, together with a sixth word that indicated whether she was "dead" or "alive" at the time (mortality manipulation, MM: dead, alive). The results pointed to a more negative assessment of life (Dead M - Alive M = -1.16, SE = .236, \(p < .001\)), emotional stability (Dead M - Alive M = -1.13, SE = .431, \(p = .010\)), and responsibility (Dead M - Alive M = -1.14, SE = .423, \(p = .008\)) only when the participants had access to negative information about the person assessed, and she was known to be dead. We discuss the results within the framework of Terror Management Theory, and analyze the different effects that the manipulation of mortality has on the formation of impressions depending on the type of information available.

Keywords: emotion, formation of impressions, Terror Management Theory, personality, prominence of death

According to the Terror Management Theory (TMT; Greenberg, Pyszczynski, & Solomon, 1986), all human behavior is motivated by the fear of one's own demise, giving rise to a state of anxiety that arises when we confront the awareness of our own mortality (MS: Mortality Salience) with the desire to survive. The anxiety produced when MS is activated is reduced via mechanisms for thought control, such as proximal and distal defenses (Pyszczynski, Greenberg, & Solomon, 1999).

Proximal defenses are initiated when MS is activated; i.e., when thoughts about death enter our consciousness. They are rational, and allow us to escape such thoughts by fixing our attention on other things, reducing the attention focused on oneself, or trivializing one's own vulnerability to death (Arndt, Cook, & Roulledge, 2004; Pyszczynski et al., 1999). This can be achieved, for example, by enhancing our thoughts about our longevity (Greenberg, Arndt, Simon, Pyszczynski, & Solomon, 2000), or by manifesting the intent to carry out more healthy activities (Arndt, Schimel, & Goldenberg, 2003; Taubman-Ben-Ari & Findler, 2005).
Proximal defenses prevent thoughts about death from persisting in our awareness, although they continue to be accessible unconsciously. At this point, and at some time after proximal defenses have been raised, distal defenses are brought into play; these allow thoughts about death to be banished for longer. These distal defenses involve the cultural systems that give meaning and support to our existence (e.g., religion, politics) and also self-esteem, leading a person to feel special and important to the extent to which he or she is so according to cultural values (Rodriguez & Osorio, 2014).

Different methods allow MS and the consequent proximal defenses to be activated. In particular, participants in experiments can be asked to write what they think will happen when they die, and to express their feeling about the idea of their own death (e.g., Kashima, Halloran, Yuki, & Kashima, 2004). Another possibility is the use of videos or images (e.g., Greenberg, Simon, Pyszczynski, Solomon, & Chatel, 1992), and even subliminal information (e.g., Arndt, Cook, Goldenberg, & Cox, 2007). Another way of activating MS and the consequent proximal defenses consists in bringing other people’s mortality into one’s consciousness (e.g., accidents, wars, terrorism) (e.g., Arndt et al., 2007; Pyszczynski, Solomon, & Greenberg, 2003). According to Kashima et al. (2004), the MS that arises when we become aware of the mortality of others generates anxiety in the same sense as that generated by awareness of our own mortality, but also installs in the person the perception that the world is an unpredictable and dangerous place, although the effect would be greater in collectivist populations, and lesser so in individualistic ones (e.g., Japan vs. Australia).

The tendency to reduce anxiety elicited by the awareness of death has an effect on a broad range of human behaviors, such as pro-social behavior, aggression, self-esteem, sexual attitudes, the tendency to take risks, the management of close relations (see Pyszczynski et al., 2003; Solomon, Greenberg, & Pyszczynski, 2013), group conflicts, political attitudes (Greenberg & Kosloff, 2008), and peace processes (Nieta, Fritsche, & Jonas, 2008). Likewise, its effects on different psychological processes have been noted, such as the perception of facial expressions (Anaki, Brezniak, & Shalom, 2012) or decision-making in health matters (Goldenberg & Arndt, 2008). However, little is known about how the proximal defenses used to reduce anxiety about death may affect the formation of impressions.

The formation of impressions is a classic line of research in Social Psychology (Anderson & Barrios, 1961; Asch, 1952), which begins when we associate the personality traits of the individuals we perceive with the characteristics accumulated in our cognition (Newman & Uleman, 1990). These judgments can be made because people develop preconceived associations between personality traits and behavior (Brown, 1986; Fiske & Taylor, 1991). This ability has high adaptive value insofar that knowing someone’s personality allows us to predict his or her behavior (Bar, Neta, & Linz, 2006; Knutson, 1996). In this sense, within the context of TMT it could be proposed that MS generates a bias in the assessment of the personality of someone who has died (with respect to someone living), which would allow the idea of mortality to be kept out of our awareness and have a marked rational character (proximal defense). One should therefore ask under what conditions and in which direction death will bias the assessment of the deceased’s personality.

Different studies have explored this topic, finding that death has a positive bias on the assessment of the deceased’s personality, specifically when the deceased is a recognized leader (Allison, Eylon, Beggan, & Bachelder, 2009). In a recent investigation (Hayes, 2016), the participants were asked to name someone they knew well (relative, friend, etc.) and someone else they knew only superficially, and then they were asked to describe them, thinking either that they had died or that they were still alive. The data showed that death had a
positive effect on the assessment of personality traits. Furthermore, the effects were independent of the degree of closeness maintained with the person assessed. Hayes (2016) has conducted a second experiment to explore the role played by the fact that the person to be assessed, according to the same paradigm as the previous experiment, was considered pleasant or unpleasant by the assessor. This second experiment revealed that although the participants did not refrain from negatively assessing the person they found unpleasant when they knew that person was dead, this negative assessment was significantly tempered, thus revealing a “positive effect of death”.

Nevertheless, the experimental design used in these investigations did not allow a suitable control to be made of the type of life and emotional behavior associated with the person to be assessed, whereby no hypotheses could be formulated based on attributional processes, understood within TMT to be proximal defenses (To what should their death be attributed in order to banish my own mortality from my mind?). Taking these data into account, it would be interesting to explore the effects of the emotional component related to the life of the person assessed. Specifically, and considering TMT, one might expect that when faced with the death of a person for whom we have a negative life concept, there would be a tendency to make a more negative assessment of those internal and stable (personality) traits that could further explain the reason for their death, clearing one’s mind of one’s own mortality, and thereby reducing one’s own levels of anxiety (proximal defenses). This mechanism proposed as a proximal defense against attributional defenses is consistent with the so-called “Ultimate Attribution Error” (Pettigrew, 1979), defined as the tendency to attribute other people’s negative actions to internal, stable causes, and one’s own, in turn, to external, one-off causes. Nevertheless, when the type of life a person has led is positive, their personality traits would not be variables that could explain their death.

The aim of this work is to analyze the effect of the proximal defenses generated from MS on the formation of impressions (emotional stability, responsibility, sociability, friendliness, and creativity). In the context of TMT, proximal defenses are expected to have a negative effect on the evaluation of personality when the information about the life of a person who has died is negative. In this case, to expel thoughts of death from one’s consciousness and reduce anxiety, one’s own vulnerability to death would be trivialized by assuming that the death of that person is the result of the lifestyle he or she led, with an origin in stable internal variables such as personality (H1: Differences are expected in the evaluation of personality between the group with a mortality manipulation of “dead” and “alive” when the information about the life of the person to be evaluated is negative). Moreover, when the information about the life of the person to be evaluated is positive the effect of MS is expected be apparent in the lack of significant differences between the group with a mortality manipulation of “dead” and the one in which it is “alive”. When a person’s death cannot be attributed to internal causes because their life has been positively assessed, the dimensions of their personality variables would not be sensitive to the effect of MS. (H2: No difference are expected in the evaluation of personality between the group with a mortality manipulation of “dead” and “alive” when the information about the life of the person to be evaluated is positive).
Method

Participants
The sample comprised 135 female psychology students at the National Autonomous University of Mexico (Age: $M = 20.82$, $SD = 2.76$), who gave written informed consent to participate.

Materials
Five words with positive valence (family, excitement, adventure, sex, and optimism) and five words with negative valence (abuse, poverty, horror, nightmare, and depression) were used. They were obtained from the seminal study by Redondo, Fraga, Comesaña, and Pérea (2005). All were similar in levels of arousal. Prototypical facial expressions were used, one of happiness and the other of sadness, obtained from the NimStim Face Stimulus Set database (Tottenham et al., 2009), to elaborate a neutral expression using the Magic Morph program (iTinysoft, 2002) (50% happiness, 50% sadness). This program allowed one photo to be transformed into another, marking the transition points on each one of the images. Thanks to its greater ambiguity, this type of expression favors the appearance of the effects sought (Hassin, Aviezer, & Bentin, 2013). What’s more, the choice of the mixed neutral expression of a young woman is justified because it had similar characteristics to those of the sample, thus fostering empathy (Stürmer, Snyder, Kropp, & Siem, 2006), as a way of enhancing the effect of MS on the formation of impressions. For the assessment of personality, we took into account the dimensions of the NEO Five Factor Inventory of Costa and McCrae (1985). The Big Five Model derives from the analysis of the attributes that in natural languages describe individual differences (see Costa & McCrae, 1992), and hence was the most suitable for this work, in which we used words to conform the levels of the independent variable.

Procedure
Stage I: Coding and Emotional Assessment
A color photograph on paper of the face of a woman with a neutral expression (50% happiness, 50% sadness) was given to the participants. The photo was shown in a circle surrounded by five positive or negative words associated with a particular age, together with a sixth word that allowed MS to be activated or not, and with information stating whether that person was alive or dead. In the upper part, the participants were told that the words described the life of the woman in the photograph, and that they had to observe the scheme for 60 seconds. They were then asked to give an emotional assessment of the life described by the words. The participants were asked to state to what extent the life of that person seemed to be positive or negative (very negative_1….9_very positive) (Figure 1).
Stage II: Assessment of Facial Expression

Once the first page had been handed in, the participants were asked to continue with the second one. The photo of the mixed expression was shown again, but without the words, together with the following question:

To what extent do you believe that the person in the photo is/was?

EMOTIONALLY STABLE: very little_ 1… 9_ A lot

FRIENDLY: very little_ 1… 9_ A lot

RESPONSIBLE: very little_ 1… 9_ A lot

SOCIABLE: very little_ 1… 9_ A lot

CREATIVE: very little_ 1… 9_ A lot

Variables and Analyses

Independent Variables

1. Type of Life (TL, negative, positive). This was established via words with a positive or negative emotional content referring to the life of the person whose personality was to be assessed. 2. Mortality Manipulation (MM: dead, alive): it was established by including the word “death” or “living”, together with the words conforming the TL. Bearing in mind these variables, the participants were distributed randomly into four groups (TL/MM) [Group 1: negative/dead, n = 38; Group 2: negative/alive, n = 31; Group 3: positive/dead, n = 35; Group 4; positive/alive, n = 31].

Dependent Variables

1. Life evaluation. The measurement was made in phase 1 by means of a scale from one to nine, in which the life described via words ranging from very negative to very positive was assessed. 2. Personality. The measurements were taken during stage II via five scales: emotional stability, friendliness, responsibility, sociability, and creativity. The values ranged between one and nine.
Analysis

We performed an ANOVA with the type of life factor (TL: negative, positive) and the mortality salience factor (MM: dead, alive) as independent variables, and emotional assessment and personality (emotional stability, friendliness, responsibility, sociability, and creativity) as the dependent variables.

Results

Life Evaluation

A significant effect of the TL factor was observed \( F(1, 131) = 828.08, p < .001, \eta^2 = .86, P = 1.00 \), in favor of the positive TL \((M = 7.39, SD = .94)\) with respect to the negative one \((M = 2.39, SD = 1.78)\). A significant effect of MM was also observed \( F(1, 131) = 20.71, p < .001, \eta^2 = .14, P = 1.00 \) in favor of the alive MM condition \((M = 5.26, \text{DT} = 2.46)\) with respect to dead \((M = 4.38, \text{DT} = 2.80)\). The interaction effect also proved to be statistically significant \( F(1, 131) = 5.55, p = .020, \eta^2 = .04, P = .65 \).

An analysis of simple effects (Bonferroni method for the control of the error rate) revealed that the differences between dead MM \((M = 1.87, SD = .16)\) and alive MM \((M = 3.03, \text{DT} = .18)\) were significant within the level of negative LT \((M_{i-j} = -1.16, SE = .236, p < .000)\), but no significant differences were observed between dead MM \((M = 7.11, \text{DT} = .17)\) and alive MM \((M = 7.48, SD = .18)\) in the level of positive LT \((M_{i-j} = -.37, SE = .241, p = .241)\) (Figure 2).

Assessment of Personality

Emotional Stability

A significant effect of the LT factor was observed \( F(1, 131) = 10.620, p = .001, \eta^2 = .075, P = .899 \) in favor of positive TL \((M = 4.74, SD = 1.78)\) with respect to negative TL \((M = 3.67, SD = 1.86)\). No significant effect of MM was observed \( F(1, 131) = 1.096, p = .297, \eta^2 = .008, P = .180 \). The effect of the interaction proved to be statistically significant \( F(1, 131) = 6.919, p = .010, \eta^2 = .05, P = .742 \). An analysis of simple effects (Bonferroni method for the control of the error rate) revealed that the differences between dead MM \((M = 3.16, SD = 1.93)\) and alive MM \((M = 4.29, SD = 1.60)\) were significant within the level of negative LT \((M_{i-j} = -1.132, SE = .431, p < .001)\).
Furthermore, significant differences were found between negative TL ($M = 3.16$, $SD = 1.93$) and positive TL ($M = 4.97$, $SD = 1.71$) within the level of dead MM ($M_{i-j} = -1.814$, $SE = .418$, $p < .000$). The results show that only when we know about the negative aspects of a person’s life and MS has been activated do we infer lower levels of emotional stability in that person (Figure 3).

**Figure 3.** Interaction between Type of Life (TL) and Mortality Manipulation (MM) in the assessment of Emotional Stability. Error bars represent the standard errors.

*p < .05. **p < .001.

**Friendliness**

No significant effect of the TL factor was observed [$F(1, 131) = 1.24$, $p = .267$, $\eta^2 = .01$, $P = .20$], nor of the MM factor [$F(1, 131) = .002$, $p = .966$, $\eta^2 = .00$, $P = .05$]. The interaction was not significant either [$F(1, 131) = 3.03$, $p = .084$, $\eta^2 = .02$, $P = .41$].

**Responsibility**

No significant effect of the TL factor was observed [$F(1, 131) = 3.86$, $p = .052$, $\eta^2 = .03$, $P = .50$], nor of the MM factor ($1, 131) = .090$, $p = .344$, $\eta^2 = .01$, $P = .16$]. The effect of the interaction was statistically significant [$F(1, 131) = 7.94$, $p = .006$, $\eta^2 = .05$, $P = .16$]. An analysis of simple effects (Bonferroni method for the control of the error rate) revealed that the differences between dead MM ($M = 5.18$, $SD = 1.86$) and alive MM ($M = 6.32$, $SD = 1.54$) were significant within the level of negative TL ($M_{i-j} = -1.14$, $SE = .423$, $p = .008$, $\eta^2 = .05$, $P = .76$).

Furthermore, significant differences were observed between negative TL ($M = 5.18$, $SD = 1.86$) and positive TL ($M = 6.63$, $SD = 1.61$) within the level of death MM ($M_{i-j} = -1.44$, $SE = .410$, $p = .001$, $\eta^2 = .09$, $P = .94$). The results show that only when we know about the negative aspects of the life of a person and MM has been dead do we infer lower levels of responsibility in that person (Figure 4).
Sociability
A significant effect of the TL factor was observed \( [F(1, 131) = 15.20, p < .001, \eta^2 = .10, P = .97] \) in favor of positive TL (\( M = 5.76, SD = 2.06 \)) with respect to negative TL (\( M = 4.33, SD = 2.06 \)). The effect of the MM factor was also significant \( [F(1, 131) = 4.13, p = .044, \eta^2 = .03, P = .52] \) in favor of alive MM (\( M = 5.44, SD = 2.06 \)) with respect to dead MM (\( M = 4.68, SD = 2.22 \)). However, the interaction was not significant \( [F(1, 131) = 2.54, p = .113, \eta^2 = .02, P = .35] \).

Creativity
A significant effect of the TL factor was observed \( [F(1, 131) = 10.34, p = .002, \eta^2 = .07, P = .89] \) in favor of positive TL (\( M = 5.26, SD = 1.99 \)) with respect to negative TL (\( M = 4.12, SD = 1.98 \)), and also of the MM factor \( [F(1, 131) = 4.57, p = .034, \eta^2 = .03, P = .57] \) in favor of alive MM (\( M = 5.08, SD = 2.04 \)) with respect to dead MM (\( M = 4.33, SD = 2.02 \)). However, the interaction was not significant \( [F(1, 131) = 3.14, p = .079, \eta^2 = .02, P = .42] \).

Total Personality
A significant effect of the TL factor was observed \( [F(1, 131) = 13.21, p < .001, \eta^2 = .09, P = 1.00] \) in favor of positive TL (\( M = 5.67, SD = 7.26 \)) with respect to negative TL (\( M = 4.73, SD = 7.16 \)). The effect of the MM factor was not significant \( [F(1, 131) = 2.82, p = .096, \eta^2 = .02, P = .39] \).

The effect of the interaction was statistically significant \( [F(1, 131) = 7.72, p = .006, \eta^2 = .06, P = .79] \). An analysis of simple effects (Bonferroni method for the control of the error rate) revealed that the differences between dead MM (\( M = 4.25, SD = 6.47 \)) and alive MM (\( M = 5.32, SD = 6.93 \)) were significant within the level of negative TL (\( M_{ij} = -5.38, SE = 1.69, p = .002 \)). Furthermore, significant differences were observed between negative TL (\( M = 4.25, SD = 6.47 \)) and positive TL (\( M = 5.79, SD = 6.81 \)) within the level of death MM (\( M_{ij} = -7.74, SE = 1.64, p < .0001 \)). The results show that only when we know about the negative aspects of the life of a person and MM was “dead” do we infer lower levels of responsibility in that person (Figure 5).

*Figure 4. Interaction between Type of Life (TL) and Mortality Manipulation (MM) in the assessment of responsibility. Error bars represent the standard errors.

*p < .01, p < .005.
Discussion

The aim of this study was to analyze the effect on the formation of impressions of mortality manipulation (dead, alive) in interaction with information about the life of the person to be evaluated (positive, negative). The results pointed to a more negative assessment of emotional stability and responsibility only when the participants had access to negative information about the person assessed, and it was also known that she was dead. This effect could be explained in terms of a process of rationalization that would allow the idea of one’s own death to be removed from one’s consciousness through attributional processes (“that happened to her because she was emotionally less stable and responsible than me”).

In daily life, what we know about others is neither all negative nor all positive, but when we have more negative information than positive about someone, and we also know that the person has died, there will be a tendency to trivialize our own vulnerability by seeking a cause for that death as far removed as possible from the circumstances of our own lives. When this happens, it is internal variables such as personality that are seen to be more sensitive to its effects, because the ability to infer the personality of others allows us to predict their behavior (Stecher & Counts, 2008), or, as in this case, to attribute past behavior to personality. The fact that the dimensions of emotional stability and responsibility were the most sensitive to this attributional process makes sense insofar as they allow a more direct type of reasoning congruent with the causes of death (having little stability and not being very responsible would increase the chances of dying), whereas the other three dimensions do not permit a direct type of reasoning about the causes of death (not being friendly, sociable or creative does not mean that the likelihood of dying would be increased).

However, when we know more positive aspects than negative ones about the person who has died, the attributional processes cannot be achieved through the same reasoning. The absence of significant differences between the dead and alive levels of the MM variable within the positive level of the TL variable, as considered in the second hypothesis, would be explained by the fact that the negative evaluation of personality traits as a
stable, internal variable would suitably explain the reason for the death of a person who has had a negative lifestyle, but the same reasoning could not be applied in the case of a positive one.

More specifically, and considering basic cognitive processes such as attention, a recent study has reported a bias towards the positive information generated by MS (Kashdan et al., 2014); that is, when the idea of death enters our consciousness, a bias towards positive information occurs. This could be understood as a deviation of our attentional focus towards what is positive, thus preventing the entry of negative information. Under this perspective, the positive content of the words used to generate the positive TL would have generated a certain neglect of the word “death”. This reasoning would not run contrary to that made regarding the attributional process, but instead complement it, albeit at a more basic level of analysis.

Regarding the data obtained when jointly considering all the dimensions of personality, it is noted that the data are consistent with those obtained considering the personality dimensions separately, obtaining significant differences between the dead and alive levels of the MM variable when the type of life was negative, but not when it was positive. It may be a general tendency to assess the deceased’s personality more negatively when their life has had a negative content, and that certain personality traits are more sensitive to this effect given their greater attributional capacity (e.g., a person’s death can be more readily explained by a lack of stability or responsibility than by a lack of creativity).

This work has focused on the formation of impressions owing to their importance in different contexts of our lives. As stated above, the ability to infer personality is especially important because it allows us to predict behavior (Stecher & Counts, 2008), and hence governs the decisions we make with respect to others, with clear advantages in work (Will this worker perform well?), personal (will the couple suit each other?), or legal (will the accused be found guilty?) situations. When making a decision in which a person is involved, the congruent information will be retrieved more easily with the personality we attribute to that same person (see Stecher & Counts, 2008; Ferreira et al., 2012). MS may arise not only directly, associated with someone’s demise, as in the present research, but also through broader contexts (cultural), where the greater or lesser danger of the context in which a person lives could determine the frequency the concept of death enters one’s consciousness, affecting the formation of impressions with an important modulating effect on personal relationships.

This research has analyzed a type of proximal defense based on the devaluation of the deceased’s personality traits when they are associated with a negative type of life. On this matter, social psychology long ago considered people’s tendency to attribute other people’s negative actions to internal, stable causes, whereas when they are referred to oneself they will be attributed to external causes (Pettigrew, 1979); this finding would undoubtedly give consistency to the direction and operation of this type of proximal defense, which would allow attributing internal and stable causes to the death of someone who has been associated with negative behavior representative of their type of life.

Another relevant issue is whether the manipulation made in this study has been effective when inducing mortality salience in the participants’ consciousness; in other words, whether another person’s death has introduced the idea of one’s own mortality into consciousness. On this point, authors such as Greenberg, Pyszczynski, Solomon, Simon, and Breus (1994) posit that MS occurs solely when an individual contemplates the possibility of their own death, although there are authors who contend that other people’s death could generate similar effects, but only on an unconscious level (see Hayes et al., 2010), or else that variables such
as the population’s collectivism vs. individualism would be keys for understanding the efficacy of the death of others for generating an awareness of one’s own mortality. Hence the reason this research has used the term mortality manipulation in the experimental design, leaving for future research the issue of whether the effects found ultimately derive from the awareness of one’s own or another person’s mortality.

In this research, MS was introduced by the death of another person, and the results show that different effects are produced on the assessment of the personality of that person, although it is to be expected that the effect would persist when awareness of death is not directly related to the person who has died, and arises, as in the traditional studies of Rosenblatt, Greenberg, Solomon, Pyszczynski, and Lyon (1989), from questions about one’s own death. From all the foregoing, it may be suggested that there are some very relevant variables to be taken into account when attempting to understand the effect of MS on behavior and cognitive processes, and in particular on the formation of impressions, such as: 1) the focus inducing MS (the fear derived from the death of others or one’s own death); 2) hedonic value of the type of life associated with the deceased (positive, negative); 3) internal variables such as personality (e.g., anxiety trait); 4) external variables such as culture (e.g., how the idea of death is processed in different cultures); and 5) differences in the capacity of personality traits to act as causal agents of the deceased (attributional power).

The limitations of this work can be found in the number of stimulations used to identify the type of life (two sets of words). Although the words used were selected by controlling the levels of activation, in future work it would be appropriate to use different sets of words that would allow the levels of activation to be manipulated, as this variable could be relevant for this type of research. Future research should further explore and systematize the analysis of all the modulating variables of MS in order to understand their main effects and interactions on the formation of impressions. It would also be useful to study how distal defenses are involved in the formation of impressions insofar as they could be governing the cultural differences mentioned previously.

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### References

Allison, S. T., Eylon, D., Beggan, J. K., & Bachelder, J. (2009). The demise of leadership: Positivity and negativity biases in evaluations of dead leaders. *The Leadership Quarterly, 20*(2), 115-129. doi:10.1016/j.leaqua.2009.01.003

Anaki, D., Brezniak, T., & Shalom, L. (2012). Faces in the face of death: Effects of exposure to life-threatening events and mortality salience on facial expression recognition in combat and noncombat military veterans. *Emotion, 12*(4), 860-867. doi:10.1037/a0029415
Anderson, N. H., & Barrios, A. A. (1961). Primacy effects in personality impression formation. *Journal of Abnormal and Social Psychology, 63*, 346-350. doi:10.1037/h0046719

Arndt, J., Cook, A., Goldenberg, J. L., & Cox, C. R. (2007). Cancer and the threat of death: The cognitive dynamics of death-thought suppression and its impact on behavioral health intentions. *Journal of Personality and Social Psychology, 92*(1), 12-29. doi:10.1037/0022-3514.92.1.12

Arndt, J., Schimel, J., & Goldenberg, J. L. (2003). Death can be good for your health: Fitness intentions as a proximal and distal defense against mortality salience. *Journal of Applied Social Psychology, 33*, 1726-1746. doi:10.1111/j.1559-1816.2003.tb01972.x

Arndt, J., Cook, A., & Routledge, C. (2004). The blueprint of terror management: Understanding the cognitive architecture of psychological defense against the awareness of death. In J. Greenberg, S. L. Koole, & T. Pyszczynski (Eds.), *Handbook of experimental existential psychology* (pp. 35-53). New York, NY, USA: Guilford Press.

Asch, S. E. (1952). *Social psychology*. New York, NY, USA: Prentice-Hall.

Bar, M., Neta, M., & Linz, H. (2006). Very first impressions. *Emotion, 6*(2), 269-278. doi:10.1037/1528-3542.6.2.269

Brown, J. D. (1986). Evaluations of self and others: Self-enhancement biases in social judgments. *Social Cognition, 4*(4), 353-376. doi:10.1521/soco.1986.4.4.353

Costa, P. T., & McCrae, R. R. (1985). *The NEO Personality Inventory Manual*. Odessa, FL, USA: Psychological Assessment Resources.

Costa, P. T., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual*. Odessa, FL, USA: Psychological Assessment Resources.

Ferreira, M. B., García-Marqués, L., Hamilton, D., Ramos, T., Uleman, J. S., & Jerónimo, R. (2012). On the relation between spontaneous trait inferences and intentional inferences: An inference monitoring hypothesis. *Journal of Experimental Social Psychology, 48*(1), 1-12. doi:10.1016/j.jesp.2011.06.013

Fiske, S. T., & Taylor, S. E. (1991). *Social cognition* (2nd ed.). New York, NY, USA: McGraw-Hill.

Goldenberg, J. L., & Arndt, J. (2008). The implications of death for health: A terror management health model for behavioral health promotion. *Psychological Review, 115*(4), 1032-1053. doi:10.1037/a0013326

Greenberg, J., Arndt, J., Simon, L., Pyszczynski, T., & Solomon, S. (2000). Proximal and distal defenses in response to reminders of one’s mortality: Evidence of a temporal sequence. *Personality and Social Psychology Bulletin, 26*, 91-99. doi:10.1177/0146167200261009

Greenberg, J., & Kosloff, S. (2008). Terror management theory: Implications for understanding prejudice, stereotyping, intergroup conflict, and political attitudes. *Social and Personality Psychology Compass, 2*(5), 1881-1894. doi:10.1111/j.1751-9004.2008.00144.x

Greenberg, J., Pyszczynski, T., & Solomon, S. (1986). The causes and consequences of the need for self-esteem: A terror management theory. In R. F. Baumeister (Ed.), *Public self and private self* (pp. 189-212). New York, NY, USA.
Greenberg, J., Pyszczynski, T., Solomon, S., Simon, L., & Breus, M. (1994). Role of consciousness and accessibility of death-related thoughts in mortality salience effects. *Journal of Personality and Social Psychology, 67*, 627-637. doi:10.1037/0022-3514.67.4.627

Greenberg, J., Simon, L., Pyszczynski, T., Solomon, S., & Chatel, D. (1992). Terror management and tolerance: Does mortality salience always intensify negative reactions to other who threaten one’s worldview? *Journal of Personality and Social Psychology, 63*(2), 212-220. doi:10.1037/0022-3514.63.2.212

Hassin, R. R., Aviezer, H., & Bentin, S. (2013). Inherently ambiguous: Facial expressions of emotions, in context. *Emotion Review, 5*(1), 60-65. doi:10.1177/1754073912451331

Hayes, J. (2016). Praising the dead: On the motivational tendency and psychological function of eulogizing the deceased. *Motivation and Emotion, 40*(3), 375-388. doi:10.1007/s11031-016-9545-y

Hayes, J., Schimel, J., Arndt, J., & Faucher, E. H. (2010). A theoretical and empirical review of the death-thought accessibility concept in terror management research. *Psychological Bulletin, 136*(5), 699-739. doi:10.1037/a0020524

iTinysoft. (2002). Magic Morph (Version 1.95B) [Computer software]. Available at www.itinysoft.com

Kashdan, T. B., DeWall, C. N., Schurtz, D. R., Deckman, T., Lykins, E. L. B., Evans, D. R., . . . Brown, K. W. (2014). More than words: Contemplating death enhances positive emotional word use. *Personality and Individual Differences, 71*, 171-175. doi:10.1016/j.paid.2014.07.035

Kashima, E. S., Halloran, M., Yuki, M., & Kashima, Y. (2004). The effects of personal and collective mortality salience on individualism: Comparing Australians and Japanese with higher and lower self-esteem. *Journal of Experimental Social Psychology, 40*(3), 384-392. doi:10.1016/j.jesp.2003.07.007

Knutson, B. (1996). Facial expressions of emotion influence interpersonal trait inferences. *Journal of Nonverbal Behavior, 20*(3), 165-182. doi:10.1007/BF02281954

Newman, L. S., & Uleman, J. S. (1990). Assimilation and contrast effects in spontaneous trait inference. *Personality and Social Psychology Bulletin, 16*, 224-240. doi:10.1177/0146167290162004

Niesta, D., Fritsche, I., & Jonas, E. (2008). Mortality salience and its effects on peace processes: A review. *Social Psychology, 39*(1), 48-58. doi:10.1027/1864-9335.39.1.48

Petitgrew, T. F. (1979). The ultimate attribution error: Extending Allport’s cognitive analysis of prejudice. *Personality and Social Psychology Bulletin, 5*(4), 461-476. doi:10.1177/014616727900500407

Pyszczynski, T., Greenberg, J., & Solomon, S. (1999). A dual-process model of defense against conscious and unconscious death-related thoughts: An extension of terror management theory. *Psychological Review, 106*(4), 835-845. doi:10.1037/0033-295X.106.4.835

Pyszczynski, T., Solomon, S., & Greenberg, J. (2003). *In the wake of 9/11: The psychology of terror*. Washington, DC, USA: APA Books.

Redondo, J., Fraga, I., Comesaña, M., & Pérea, M. (2005). Estudio normativo de 478 palabras españolas. *Psicológica, 26*, 317-326.
Rodriguez, G. L., & Osorio, C. (2014). Aportes de la psicología existencial al afrontamiento de la muerte. *Tesis Psicológica, 9*(1), 50-63.

Rosenblatt, A., Greenberg, J., Solomon, S., Pyszczynski, T., & Lyon, D. (1989). Evidence for Terror Management Theory: I. The effects of mortality salience on reactions to those who violate or uphold cultural values. *Journal of Personality and Social Psychology, 57*(4), 681-690. doi:10.1037/0022-3514.57.4.681

Solomon, S., Greenberg, J., & Pyszczynski, T. (2013). The cultural animal: Twenty years of terror management theory and research. In J. Greenberg, S. L. Koole, & T. Pyszczynski (Eds.), *Handbook of experimental existential psychology*. New York, NY, USA: The Guilford Press.

Stecher, K. B., & Counts, S. (2008). Spontaneous inference of personality traits and effects on memory for online profiles. In E. Adar, M. Hurst, T. Finin, N. Glance, N. Nicolov, & B. Tseng (Eds.), *Proceedings of the Second International Conference on Weblogs and Social Media (ICWSM)* (pp. 118-126). Menlo Park, CA, USA: The AAAI Press.

Stürmer, S., Snyder, M., Kropp, A., & Siem, B. (2006). Empathy-motivated helping: The moderating role of group membership. *Personality and Social Psychology Bulletin, 32*(7), 943-956. doi:10.1177/0146167206287363

Taubman-Ben-Ari, O., & Findler, L. (2005). Proximal and distal effects of mortality salience on willingness to engage in health promoting behavior across the life span. *Psychology & Health, 20*(3), 303-318. doi:10.1080/08870405123331317661

Tottenham, N., Tanaka, J. W., Leon, A. C., McCarry, T., Nurse, M., Hare, T. A., . . . Nelson, C. (2009). The NimStim set of facial expressions: Judgments from untrained research participants. *Psychiatry Research, 168*, 242-249. doi:10.1016/j.psychres.2008.05.006

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