



universität
wien

MASTERARBEIT / MASTER'S THESIS

Titel der Masterarbeit / Title of the Master's Thesis

“The Meaning of Dying”

verfasst von / submitted by

Felipe Gonzalez Tubio Machado

angestrebter akademischer Grad / in partial fulfillment of the requirements for the degree of

Master of Science (MSc)

Wien, 2020 / Vienna 2020

Studienkennzahl lt. Studienblatt /
degree programme code as it appears on
the student record sheet:

A 066 013

Studienrichtung lt. Studienblatt /
degree programme as it appears on
the student record sheet:

Joint Degree Programme MEi:CogSci Cognitive Science

Betreut von / Supervisor:

Univ.-Prof. Dr. Alexander Batthyány

Acknowledgements

I would like to thank Prof. Alexander Batthyány for being a kind and admirable supervisor and for giving me the opportunity in engaging in this fulfilling journey.

I would also like to thank my professors, university staff, and friends who have contributed and helped me with my academic endeavor.

A special thanks to Nori, Rainer, Zeno, Niko, Fini, Alina, and Charlie, who became my Austrian family and participated in this quest since the beginning.

Thank you to my girlfriend, Anita, for all the help, for being so supportive, and for encouraging me through the process of researching and writing this thesis.

I must express my profound gratitude to my family who was always caring and who have thought me values I will not forget. Thanks to my father, Mauricio for his warm heart. To my sister, Viviane for her kindness. To my brother Rodrigo for his inspiring sense of responsibility. To my uncle Perez for being a role model throughout my life. To my uncle, Marcos, and my aunt Graça for being lovely. A special thanks to my mother, Rosa, who is one of the most special persons I have ever had the chance of meeting. Thank you for all the support and encouragement. Without them I would not be now writing a thank you note.

Thank you.

Contents

Abstract	vii
Zusammenfassung	ix
List of Tables	x
List of Figures	xi
1 Introduction	1
1.1 Motivation	1
1.2 Goal and Research Question	2
1.3 Structure of the Thesis	3
2 The Threat of Death	4
2.1 Terror Management Theory and its empirical evidence	6
2.1.1 Terror Management Theory and Politics	8
2.2 Attraction to Leaders Who Offer a Sense of Meaning	10
3 The Threat of Meaninglessness	13
3.1 Meaningless Lies in The Background of Emptiness	14
3.2 Meaninglessness as a Potential Threat	16
3.3 Why Is It Increasingly Important?	19
3.4 The Necessity of Meaning	20
4 Dealing With Existential Terror - Possible Solutions	22
4.1 First Solution - The Quest for immortality	23
4.2 Second Solution - Tolerant and Open Worldviews	24
4.3 Reinterpreting The Idea of Dying	26
4.3.1 Third Solution - Death Reflection	26
4.3.2 Forth Solution - The Meaning of Dying	27
5 Method	31
5.1 Participants and Design	32
5.2 Procedure and materials	33

6 Results	38
7 Discussion and Conclusion	43
7.1 Conclusion	45
Bibliography	47
A My appendix	52
A.1 Bogus Scientific Articles	52

Abstract

Humans know that one day they are going to die. The potential anxiety that this knowledge produces and how human attitudes and behavior manage the terror created by the threat of death has been vastly studied by Terror Management Theory (TMT). But humans know more than the inevitability of their own demise. They also now know they inhabit a relatively small planet in an expanding universe. They are no longer certain about the assumptions they once had about the structure of reality, and as a consequence, the sense of significance they derive from those assumptions might be at risk. This creates yet another potential aspect for existential anxiety - the threat of meaninglessness. TMT has seen meaning fundamentally as a tool that humans use to deny their mortality, arguing that the threat of meaninglessness would only produce existential terror, insofar as it exposes individuals to the very threat of death. This master's thesis proposes that the threat of meaninglessness should be considered as a more fundamental element in the existential spectrum, arguing that it can produce as much existential terror (or even more) than the threat of death.

To test the hypothesis that the threat of meaninglessness can surpass the threat of death in producing terror management processes a study was conducted with 300 participants. They were randomly assigned into 3 conditions in which they were exposed to a bogus scientific article arguing either in favor of the existence of an afterlife, but devoid of meaning (meaningless immortality); against the existence of an afterlife, but seeing mortality as a call to achieve meaning (meaningful mortality); or an aversive control condition (dental pain). They were later reminded of death or dental pain as typically done in terror management theory experimental design. Terror management processes were measured as a function of evaluation and preference for political candidates that can offer psychological strategies to cope with the produced terror.

Confirming the prediction of this thesis, male participants with low-self esteem showed an increased preference for the relationship-oriented leader in the meaningless immortality condition when compared to the Dental Pain control group. These results suggest (that the threat of meaninglessness might surpass the threat of death in producing terror management processes

and) that meaning might triumph over the promise of immortality in reducing existential terror. Accepting death and taking it seriously might also be a way of bringing the urge to meaning into existence. Perhaps meaning is not just a tool to deny death, but rather death is a tool to achieve meaning.

Zusammenfassung

Die Menschen wissen, dass sie eines Tages sterben werden. Die potenzielle Angst, die dieses Wissen hervorruft, und wie menschliche Einstellungen und Verhaltensweisen mit dem Terror der Todesangst umgehen, wurde von der Terror Management Theory (TMT) eingehend untersucht. Aber die Menschen wissen mehr als die Unvermeidlichkeit ihres eigenen Todes. Sie wissen auch, dass sie einen Planeten in einem expandierenden Universum bewohnen. Die Menschen sind sich nicht mehr sicher über die Annahmen, die sie einst über die Struktur der Realität hatten; demzufolge könnte das Sinngefühl, das sich aus diesen Annahmen ergeben kann, gefährdet sein. Dies schafft einen weiteren potenziellen Aspekt für existenzielle Angst: die Gefahr der Sinnlosigkeit. TMT versteht die Sinnhaftigkeit grundsätzlich als ein Instrument, mit dem Menschen ihre Sterblichkeit leugnen, und argumentiert, dass die Gefahr der Sinnlosigkeit nur existenziellen Terror erzeugen würde, sofern sie den Einzelnen der Gefahr des Todes aussetzt. Diese Masterarbeit schlägt vor, dass die Gefahr der Sinnlosigkeit als ein grundlegendes Element im existenziellen Spektrum betrachtet werden sollte und argumentiert, dass sie genauso viel existenziellen Terror (oder sogar mehr) hervorrufen kann wie die Todesangst.

Um die Hypothese zu überprüfen, dass die Gefahr der Sinnlosigkeit die Todesangst bei der Erzeugung existenziellen Terrors übertreffen kann, wurde eine Studie mit 300 Teilnehmern durchgeführt. Sie wurden zufällig in drei Gruppen eingeteilt, in welchen sie einem gefälschten wissenschaftlichen Artikel ausgesetzt waren und entweder für die Existenz eines Jenseits ohne Sinn (sinnlose Unsterblichkeit) eintreten sollten; gegen die Existenz eines Jenseits argumentieren, wohl aber die Sterblichkeit als Aufruf zur Sinnfindung sehen sollten (sinnvolle Sterblichkeit); oder eine aversive Kontrollbedingung (Zahnschmerzen) bedenken sollten. Sie wurden später an den Tod oder Zahnschmerzen erinnert, wie es üblicherweise im experimentellen Design der Terror-Management-Theorie gehandhabt wird. Terror-Management-Prozesse wurden als Funktion der Bewertung und Präferenz für politische Kandidaten gemessen, die psychologische Strategien zur Bewältigung des produzierten Terrors anbieten können.

Als Bestätigung für die Vorhersage dieser These zeigten männliche Teilnehmer mit geringem

Selbstwertgefühl eine erhöhte Präferenz für den beziehungsorientierten Leader in der sinnlosen Unsterblichkeitsbedingung, wenn verglichen mit Zahnschmerzen Kontrollgruppe. Diese Ergebnisse deuten darauf hin, dass die Gefahr der Sinnlosigkeit die Todesangst bei der Erzeugung von Terror-Management-Prozessen übertreffen könnte und, dass der Sinn über das Versprechen der Unsterblichkeit bei der Reduzierung des existenziellen Terrors triumphieren könnte. Den Tod zu akzeptieren und ernst zu nehmen, könnte auch eine Möglichkeit sein, der Existenz einen Sinn zu geben. In diesem Zusammenhang könnte ein Gefühl der Sinnhaftigkeit nicht nur ein Instrument sein, um den Tod zu leugnen, sondern der Tod gar ein Instrument sein, um Sinnhaftigkeit zu erlangen.

List of Tables

6.1	Number of votes for each candidate in each experimental condition	41
6.2	Number of votes by condition for males with low self-esteem	41

List of Figures

2.1	Visual representation of the conceptualized anxiety buffer.	5
3.1	Visual representation of the conceptualized anxiety buffer and its relationship with existential terror and potential threats that might trigger it.	17
4.1	Possible solutions and how they act in the anxiety buffer.	23
6.1	Mean evaluation for each candidate in each group	39

1

Introduction

In a sense, and most probably in many senses, we are all dying. While these words are being typed by the writer of this text, while the reader goes through those very same words, both share an inherent, fundamental and silent reality - they move between birth and death; dying in the process of becoming.

Yet, in this transformation process which mostly characterizes the essence of being, both are also living. Affirming their own existence in the engagement with what ought to be of themselves. Understanding and shaping reality, claiming presence, striving for meaning and significance, maintaining and sustaining life, even in the face of death.

1.1 Motivation

The distinctive capacity of abstraction that humans possess grant them the possibility to know that one day they will die. They do not know how or when, but they do know that death is an intrinsic part of life. But, at the same time, they want to stay alive and this contrast between what they want and what they know creates a potential for anxiety. The existential anxiety associated with the threat of death.

This however is not the only thing humans know. They also now know that they are not in

the center of the universe and that they inhabit a planet in one of the existing galaxies. They are no longer certain about the assumptions they once had about the structure of reality. Their worldviews, threatened by uncertainty created the potential to expose humans to yet another existential threat - the threat of emptiness and meaninglessness.

This thesis aims to address those two fundamental existential concepts which permeate the essence of Man's being. How they might affect how individuals act in the world and how they might shape human existence. How they affect how people live and die.

1.2 Goal and Research Question

In an interdisciplinary endeavor, combining the fields of anthropology, philosophy, biology, psychoanalysis, and social psychology, the cultural anthropologist Ernest Becker aimed to address the psychological underpinnings of human behavior. In order to do that he investigated the role that the knowledge of one's own mortality played in how people live.

An increasing body of research has been conducted in the field of experimental existential psychology. Especially Terror Management Theory (TMT) inspired in Becker's ideas has investigated empirically how the threat of death might affect how people behave. How existential terror produced by reminding people of their mortality is managed and which outcomes one should expect from this management process has flourished as a field, providing convincing evidence in different areas of human activities - from politics to the willingness to have off-springs.

TMT addresses the existential concept of meaning fundamentally as a tool to cope with death, arguing that any threats to it would only produce existential terror, insofar as it exposes individuals to the very threat of death, the one which they were constructed to defend humans from.

This master's thesis has two goals. The first one is to argue for the consideration of one more existential layer in TMT's scope of investigation - the threat of meaninglessness. It will be argued and tested that this threat can produce as much existential terror (or even more) than the threat of death. As a consequence then the threat of meaninglessness should be considered as an extra layer in the existential spectrum since it is responsible for producing management processes that control existential terror, similar to the ones observed when only the threat of death is considered. The second goal is to propose and test a solution to the problem obtained with potential undesirable terror management processes - such as aggression and hostility toward people that do not subscribe to one's cultural worldview - also known as defense mechanisms. This solution argues for a reinterpretation of the idea of dying and encompasses both existential threats addressed in this thesis.

In light of those two goals, the research question in this work will try to address whether the threat of meaninglessness can surpass the threat of death in producing existential terror, or in other words if meaning can exceed the promise of immortality in the endeavor of mitigating existential terror. If that is the case, meaninglessness would produce a stronger need for terror management processes. The defense mechanism will be measured as a function of the attraction people feel to political candidates that can offer psychological strategies to cope with the produced terror. Addressing this question will provide the opportunity for further examination of the solution proposed in this thesis, which could deal with unwanted defense mechanisms.

1.3 Structure of the Thesis

This thesis was structured with the intention of giving incremental steps towards the development of what it tries to answer. The thesis is divided into 3 parts:

The first part addresses two existential threats, more specifically how they can affect human behavior and shape how one understands and deals with the world. This part is composed of chapter 2 in which the problem of death is explored and TMT's experimental evidence is presented. Chapter 3 tries to tell the same story presented in the previous chapter, but under the perspective of the threat of meaninglessness. Existing evidence is presented and analyzed. Section 3.3 goes into more detail about why the topic being addressed in this thesis is increasingly important in contemporary society.

The second part deals with possible solutions to the problems addressed in the former chapters. Chapter 4 presents three different solutions that have been tested and the chapter culminates in section 4.3.2 which lays out the solution presented by this thesis.

The third and last part tries to explore, using TMT's experimental paradigm, the solution proposed and the claim that the threat of meaninglessness might surpass the problem of death in producing existential terror. In chapter 5 the experimental design and method used to investigate the research question are presented. Chapter 6 provides the conducted statistical analysis and findings obtained. In Chapter 7 the results are discussed and analyzed. Possibility for future research is also addressed. Elements used in the experiment are presented in Appendix A.

2

The Threat of Death

The role of death in life and how that changed human behavior was one of the central concerns in the work of the cultural anthropologist Ernest Becker. In an effort to integrate findings from different disciplines he aimed to investigate the psychological underpinnings of human behavior (Solomon et al., [2019](#)). Inspired by Becker's ideas, Terror Management Theory (TMT) has argued that the capacity of abstraction that Humans possess allows them to know that one day they are going to die. Their instinctive animal desire to survive contrasted with this knowledge of their own mortality creates a potential for anxiety. Humans then used that very same capacity of abstraction to create strategies that would help them deal with their own demise, developing according to TMT a dual-component anxiety buffer (Burke et al., [2013](#)).

The first component is presented in the form of a cultural worldview, a socially shared conception of reality that offers norms and standards to pursue personal value. Cultural worldviews reduce death anxiety by offering a sense of meaning, order, and permanence. Self-esteem is the second component in this anxiety buffer, giving the perception that one is achieving or exceeding the expectations and values brought by one's cultural worldview (Greenberg and Kosloff, [2008](#)). The most efficient way to cope with death in this humanly constructed anxiety buffer is not just to subscribe and believe in one's worldview, but also to be recognized, within it, as a valuable and praised individual.

In following these psychological structures humans could hope to transcend their death, achieving literal immortality - some religions, for instance, reduce the threat that death imposes offering the belief that it is just a transition to eternity - and symbolic immortality by which people exceed death by being part of a framework that goes beyond their finite existence, that provides the opportunity to be eternal. That is partly why people write books, give their names to scientific discoveries and why ideologies, political parties, and concepts such as the one of a nation have a strong appeal. Those structures survive the participant's death, and provide a possibility that the participant will survive within it, being mentioned and remembered. Figure 2.1 illustrates the concept of the anxiety buffer that was theorized by TMT.

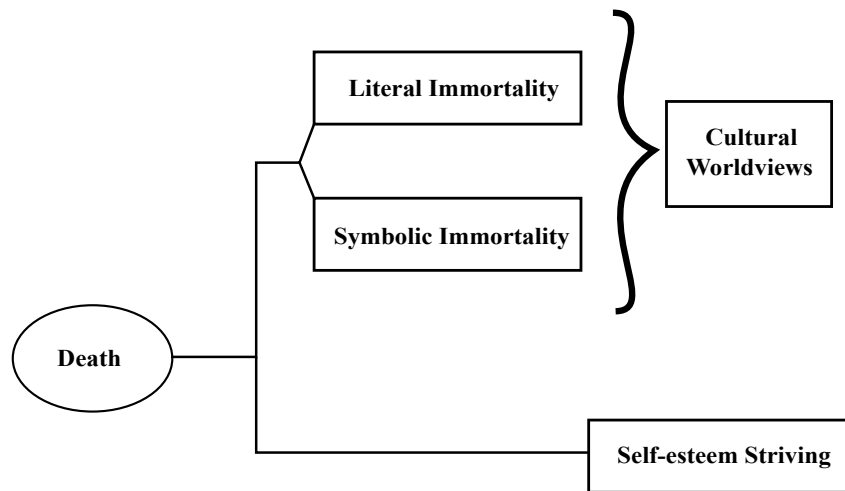


Figure 2.1: Visual representation of the conceptualized anxiety buffer.

According to TMT, cultural worldviews and self-esteem play a fundamental role in keeping the potential paralyzing terror of death at bay, they work then as a coping mechanism. The problem comes when an individual, subscribed to a specific cultural worldview encounters the other, who is different, who is part of an alternative set of beliefs, norms, and values. The different other represents a threat to the coping mechanism the individual uses. Accepting the validity of the contrasting worldview - the different other - comes with the reduced confidence that one has in one's own worldview, diminishing then, as a consequence, the capacity that this cultural worldview will work as the necessary meaning providing structure to cope with death. In other words, TMT argues that when A grants the possibility that the worldview of the different other, B, is right, it comes necessarily with the acknowledgment that A's cultural worldview might be wrong. This process would in turn expose A to the potential of anxiety that death may cause, since A can no longer confidently rely on the worldview that protected A from the idea of death in the first place. In order to avoid this possibility, A tends to try to convert, reject, or annihilate the different other, reducing then the threat that B generates

to A’s worldview. This process of trying to diminish the threat that the existence of the other creates is called cultural worldview-defense.

When exploring the theoretical background of TMT, it would be expected that if people are reminded of their mortality (*Mortality Salience*) they would need these meaning providing structures even more, since they would work in controlling the potential for anxiety that reminders of death had created. Therefore if those worldviews about reality were erected to protect people from the terror that the thought of death may produce, people would then need to bolster the faith they have in those worldviews, manifesting as a result a cultural worldview defense. This terror management process could be reflected in an increased agreement and affection for those who subscribe to the same beliefs and worldview and hostility towards those who do not share the same conception of reality. That was exactly what TMT through its experimental paradigm aimed to investigate.

In TMT’s experimental design Mortality Salience (MS) is typically evoked with two questions: “Please describe the emotions that the thought of your own death arouses in you.” and “Jot down, as specifically as you can, what you think will happen to you as you physically die and once you are physically dead.”. MS induction can also be achieved with subliminal exposure to the word “dead” or “death”, or by the mere fact of being near a cemetery while answering a questionnaire. Participants in the MS condition are commonly compared with a control group, in which participants have to engage in similar questions, but related to a neutral or aversive, but not fatal topic, such as failing an exam, going to the dentist, or being in extreme pain. The prediction that, following MS, participants would manifest different forms of cultural worldview defense when compared to a control condition was obtained in hundreds of studies, providing substantial evidence for TMT’s assumptions.

2.1 Terror Management Theory and its empirical evidence

In the large existing literature which investigates terror management processes, cultural worldview defense was obtained for example when MS led Christians participants to evaluate more favorably in-group members (fellow Christians) and less favorably out-group members (Jewish targets). In another study, MS also led American participants to have an increased positive reaction for an essay and its author that supported US-foreign policy, while it increased the negative reaction to the essay and author who had an anti-U.S. perspective. (Greenberg et al., 1990). American participants who viewed a gory accident footage endorsed a harsher monetary penalty against an auto manufacturer, but only if they thought the manufacturer was Japanese, and only among participants for whom the footage led to thoughts of their own death.

Such nationalistic bias did not occur in the control condition, in which participants watched a neutral driver's educational video (Nelson et al., 1997).

In order to investigate the possibility of a higher willingness to engage in conflict or to consider aggression towards the different other, who offers a threat to one's own belief, empirical evidence in TMT has found that when participants had been reminded of their mortality they allocated a particularly higher amount of painfully spicy hot-sauce when they were later presented with targets that hold different political views when compared to when they were presented to targets that share their political orientation (McGregor et al., 1998). In another study, Iranian college students were either reminded of death or an aversive topic unrelated to death. They were later asked to evaluate texts from other fellow students who either supported or were opposed to martyrdom attacks against the United States. Participants in the control condition (who were reminded of an aversive topic) preferred the student whose text opposed martyrdom, while participants reminded of death preferred students who supported martyrdom and were more willing to join their cause (Pyszczynski, Abdollahi, et al., 2006).

Research has also investigated the relationship between self-esteem and mortality salience. If self-esteem is an important element in the anxiety buffer system, it should also influence the effect reminders of mortality have on people. TMT claims that self-esteem serves to buffer anxiety, so people with high self-esteem should present reduced worldview defense after MS. Evidence for this hypothesis was found in different studies (Arndt and Greenberg, 1999, Harmon-Jones et al., 1997). In line with the cultural worldview defense argument, following MS, participants should also present self-esteem striving, since it is an important element in reducing the potential for anxiety associated with death reminders. It was expected that MS would increase or decrease identification with entities that are associated positively or negatively with self-esteem. For instance, MS increased strength performance when squeezing a hand dynamometer for individuals invested in strength training, but it had no significant effect on the ones not invested in strength training. The observed behavior worked then as a self-esteem striving for participants who valued physical strength (Peters et al., 2005). Another study showed that the success of a football team is a prerequisite for sports fan affiliation to function as a buffer against death concern (Dechesne et al., 2000), which means that the degree to which an entity can provide the possibility of self-esteem striving is an important aspect in judging how efficient it will be for terror management processes. MS also led to more risky driving to participants who perceived driving as relevant to their self-esteem (Taubman Ben-Ari et al., 1999).

An interesting point that is worth mentioning is the fact that in some studies, gender has played a role in how participants defend themselves against death. Following MS only males

increased their nationalistic word accessibility, but not females, when compared to a control condition. On the other hand, after death reminders, only females increased their romantic word accessibility and not males (Arndt et al., 2002). When risk was considered, only males had an increased willingness to engage in risky behaviors following MS (Hirschberger et al., 2002). An interesting point was that for the desire of having off-springs, mixed results were found depending on the country the participants were from. Procreation striving is also among the possible outcomes following MS, since besides the possibility to pursue a sense of literal immortality with off-springs, one would also be working in terror management processes while achieving a sense of symbolic immortality and that one is following the norms and roles of one's cultural worldview. The findings point out that only German females showed increased procreation striving (Fritsche et al., 2007), while only Dutch males showed the same effect following MS (Wisman and Goldenberg, 2005). Cultural differences could explain such difference; it is possibly the case that the predominant worldview in the German sample was associated with a stronger pro-offspring inclination for females when compared to the Dutch one. A piece of evidence that reinforces this interpretation is the fact that Dutch females indeed showed increased procreation striving following MS when the idea that this desire could be compatible with career development, another important aspect in their worldview (Wisman and Goldenberg, 2005). This result demonstrates that in TMT research the cultural worldview aspect of the data being analyzed is an important aspect to be considered (Burke et al., 2010).

2.1.1 Terror Management Theory and Politics

Terror Management Theory is also a prominent perspective on the underlying motivation for political attitudes. The reason for that would be connected to the extent political attitudes and ideologies offer a structure from which people can derive meaning and a sense of belonging to a group or idea that outlasts their own lives. In doing so, individuals then reduce the anxiety-provoking awareness of their mortality. Considering political ideologies as a culturally constructed and transmitted system of belief that endorse the value of specific roles, status, and group affiliation, they then provide people the sense that they live in a structured world with salient features to which they can confidently cling to in order to derive significance to their existence. It provides a symbolic immortality path in which people can become part of something that transcends their own death. Research on the effect of TMT on the political sphere has emerged in the past decades collecting evidence that reminders of mortality indeed alter political attitudes (Burke et al., 2013).

Two hypotheses were developed to account for what should happen to political attitudes

following a death reminder. The one known as “worldview-defense hypothesis” claims that following MS individuals would tend to present an increased defensiveness of their preexisting political ideology, also showing then as a consequence a resistance to different political views. The second, known as “conservative-shift hypothesis” argues that MS would lead to an increased willingness to adhere to conservative views of the world (Jost et al., 2003). This assumption comes from the perspective that conservative political ideologies provide a more stable conception of the world, whereas liberal ideologies are more open to change, presenting then a less likely source of meaning and self-esteem in response to mortality concerns (Burke et al., 2013).

Evidence for the two hypotheses has been created. Going in line with the worldview-defense hypothesis, one study found that when compassionate values were made salient MS motivated participants to uphold those values, reflecting in increased support for a Democratic presidential candidate, Barack Obama, who was according to polls perceived as more compassionate. (Vail et al., 2009). In three studies MS led liberals to show less support for conservative policies and more support for liberal policies, less agreement and support for politicians arguing for conservative policies, and - considering tolerance as a central aspect in differentiating liberals and conservatives - reminders of death also led Liberals to become more tolerant and conservatives to become less tolerant (Castano et al., 2011).

Working as evidence for the Conservative-shift hypothesis, MS led participants to consider a Republican presidential candidate, George W. Bush, as a more favorable and it increased the willingness to vote for him in an upcoming election, regardless of their preexisting political ideology (Landau et al., 2004). Another study also showed an increased preference for the Republican presidential candidate, but only among participants low in trait self-control (Gailiot et al., 2006). Both hypotheses seem to be supported by empirical evidence and further investigation might help to elucidate the issue.

One possible explanation that would account for evidence being found supporting both hypotheses is the social-historical context in which these studies took place. Historical sociopolitical trends might also influence how people respond to political variables following mortality salience (Burke et al., 2013). The competition for the underlying predominant political narrative might play a role in terror management processes. During a conservative political era, for instance, MS could increase the preference for this type of candidate, while during a more progressive era, the dominant cultural worldview and political narrative would then shift towards an increase in preference for candidates that follow this worldview. The effect of the political attitude observed after an MS condition is dependent on the historical context in which it takes place, increasing the attraction and preference for candidates that correctly incarnate the political trend of the

moment. That would explain for instance why MS increased support for George W. Bush and his counter-terrorism policies following 9/11, since that represents a historical context in which liberals and conservatives agreed with solutions being proposed (Landau et al., 2004). The significance of the social-historical context could also help explain why MS increased support for Barack Obama when compassionate values were made salient (Vail et al., 2009).

This interpretation suggests that the conservative shift hypothesis is overridden by the worldview defense one when more aspects of the context in which the experiment took place are considered. One could then expect that in a conservative era, reminders of mortality should indeed lead to a conservative-shift, but the opposite would happen in a progressive era, leading to a more liberal-shift. The broad social-political climate, as well as situational importance of aspects of one worldview, might be of significant relevance and could lead to different outcomes in terror management processes.

2.2 Attraction to Leaders Who Offer a Sense of Meaning

Of crucial importance to the study developed in this thesis, is the work conducted by Cohen and colleagues, associated with how reminders of mortality can lead to attraction to political candidates that can offer a sense of meaning and that can provide followers a framework in which they can strive for self-esteem. In trying to understand how different leadership styles are affected by mortality salience, Cohen and colleagues designed an experimental paradigm in which following MS or control condition, participants would read campaign statements and vote in a hypothetical upcoming election, selecting one of three different leaders, following the distinction of leadership styles made by Ehrhart: Charismatic (value-based vision and emphasis on collective identity), relationship-oriented (focus on bringing followers to an active role in helping the leader and offering a sense of mutual responsibility) and task-oriented (provides an image of being effective and plans work to be done) (Ehrhart and Klein, 2001). Cohen found that following a reminder of mortality, participants were more attracted to and were more likely to vote for charismatic leaders.

This preference is explained due to the charismatic leader's capacity of offering a sense of meaning and of providing the possibility of being a valued part of something great. (Cohen et al., 2004). This is indeed an attribute of the charismatic leadership style. However, one could also attribute this ability to the relationship-oriented leader, who is characterized by a focus on bringing followers to an active role in helping the leader, offering a sense of mutual responsibility and a framework for self-esteem striving. This leader also offers an invitation that the follower receives to play an important role in the community and to become a valued part

of the government.

In Cohen's study, however, the relationship-oriented leader is seen as one who demystifies government, and since for terror management purposes mystification is what is needed, mortality salience would decrease preference for this type of leader. This prediction was indeed verified in this study, in which MS reduced evaluation and the number of votes of the relationship-oriented leader. One possible explanation for the results, however, might not be due to the demystification property previously described, but rather a historical context that led to the preference of the charismatic meaning providing statements when compared to the relationship-oriented one.

The already pointed out importance of the social-historical context in which the study took place could also have played a role in decreasing preference for the relationship-oriented leader in Cohen's findings. Captured in a similar historical context as the study in which increased support for Bush following MS was obtained, Cohen's study seems to have been done in a moment in which the meaning providing strategy offered by the charismatic leader was more appealing than the one offered by the relationship-oriented leader. One could argue that both leaders still present the ability to offer a sense of meaning and self-esteem striving, but due to the circumstances associated with the moment the study took place, the relationship-oriented discourse was not the preferred one.

In the study that will be presented in this thesis, which was heavily influenced by the experimental paradigm proposed by Cohen, it is assumed that both relationship-oriented and charismatic leaders could be eligible options in which cultural worldview defense and self-esteem striving manifest themselves. The task-oriented leader provides a rather instrumentally and practical discourse, which does not offer an invitation to participate and it leaves the followers out of the political sphere. Since this discourse should not be of much use for terror management processes, it is expected that MS would not increase the preference for the task-oriented style. The prediction of this thesis is that following MS both charismatic and relationship-oriented leaders, or at least one of them (since the historical context might also play a role in the preference for one of the two possible meaning providing strategies) will have a statistically significant increase in preference compared to a control condition. This is how the need for the anxiety buffer will be measured in this project.

But this is not the whole story yet. The aim of this thesis is also to point out that there might be other existential aspects that a human being can relate to and there are also other potential threats that might produce existential terror to be dealt with, and as consequence in the end also influence political attitudes as described. In order to do that, the next chapter will explore, and attempt to tell the same story told until now - how existential terror might affect

the way people live and the strategies one uses to deal with this terror such as the anxiety buffer proposed by TMT - but now not under the perspective of the problem of death, but under the threat of meaninglessness.

3

The Threat of Meaninglessness

Existential terror seems to have more layers composing its spectrum than just death anxiety. Paul Tillich in “The courage to be” points out three different forms of anxiety; in terms of death, of meaninglessness, and of condemnation. In all three forms anxiety is considered existential since it belongs to existence as such, as part of being. Given the evidence of the potential outcome observed when people are reminded of their mortality, one might wonder about other possible existential threats and if they could also lead to terror management processes. To the scope of this thesis, another existential threat will be taken into consideration - the threat of meaninglessness. Aspects such as the idea of a meaningless universe, for example, or that life renders no meaning can be as terrifying (or even more) as the idea of a finite existence. Whether the threat of meaninglessness would be able to produce similar defense mechanisms like the ones seen in TMT is a question for further exploration and research. It is important, however, to first argue for the reason behind the speculation that threats to meaning could also lead to cultural worldview defense and self-esteem striving.

First, meaning is important. It is in the engagement with a framework that has the potential to construct meaning - functioning as a source of it - where self-affirmation can occur. Being is actualized in this coupling with those structures of meaning, making them an essential part of what means to be human. The participants who live creatively in those structures affirm them-

selves, receiving and transforming reality (Tillich, 1952). This fundamental role that meaning plays, brings the necessity of taking it seriously.

3.1 Meaningless Lies in The Background of Emptiness

Paul Tillich has suggested that the relative threat to the nonexistence of the possibility of self-affirmation is found in emptiness. Meaninglessness is found in the absolute threat to this nonexistence. As if the first step to meaninglessness is manifested by emptiness. The anxiety of emptiness is brought into being by the threat of the disintegration of the contents in which meaning can exist. The threat to the meaning providing structures to which individuals can participate and derive a sense of meaning out of this engagement - the cultural worldviews in TMT's terminology. This loss of faith in those structures can be obtained in different ways. A person who subscribes to a system of belief can arrive in doubts about that system perhaps by inner confrontation with one's own conscience or by an external event that limits the credibility and the willingness to participate in that sphere of culture. This process of loss of faith might lead to a devotion from one meaning providing structure to the other, if the emergent capacity for meaning of each of them vanishes. The previous attachment and fulfillment one found in one's tradition, however excellent, praised, and loved once - Paul Tillich pointed out - might also lose the power to give its content. This creates the opportunity for the anxiety of emptiness to come into existence. He would claim that "the anxiety of emptiness would drive humans to the abyss of meaninglessness" (Tillich, 1952, p. 48).

Doubt becomes then the description of the underlying uncertainty one might have in one's culture, system of belief, or meaning providing structure (those terms are used here interchangeably). It is important to point out that doubt is not necessarily bad. Doubt, the product of questioning, can also lead to corrections and improvement. However, when doubt gets to a point in which it exceeds even the chances of deriving any certainty, existential despair takes place. This is a radical position to be in, and in order to avoid this extreme one gives up on doubting in two ways according to Tillich. One is by affirming what is still possible to affirm in the traditions one subscribes to and the convictions one has. And if doubt still persists, one takes the risk of accepting it or chooses the route of its denial, without renouncing one's own previous convictions and beliefs, without surrendering one's culture. This is an unstable position because doubt does not become certainty by its acceptance or denial. Sooner or later doubt hunts in the name of truth.

The denial of doubt assumes an interesting path worth exploring further. Tillich claimed that doubt comes from the possibility of man's separation from the whole of reality, the capacity

of individual isolation. Questioning is conceivable due to the ability of separation from, while participating in (Tillich, 1952). In an attempt of surrendering this capacity in the name of rejecting the possibility of doubt, one abandon one's own freedom to ask, to try to answer and to doubt. This escape from freedom also pointed out by Fromm makes humans merge into the collective, into the meaning providing structures, without the possibility of questioning and of doubt, which can erode those very same structures (Fromm, 1994). The possibility of the anxiety of emptiness fade into the blind immersion into the collective, the culturally constructed worldviews. In trying to escape the anxiety of meaninglessness, one surrenders the self to save meaning.

The denial of doubt and escape from freedom comes, however, with a problem. The regained certainty, paid with the price of denying the possibility of doubt leads one to assert it at all costs. Fanaticism is the consequence of the sacrifice of the self in the name of certainty. It paves the way for the opportunity of the same terror management processes described in TMT such as cultural worldview defense and self-esteem striving to exert their effects. One attacks and is not tolerant to the different other in an attempt to defend the certainty provided by one's cultural worldview, the person's meaning providing structure. One is not receptive to the existence of the different other, the different worldviews, traditions, and ways of life, because if one accepts them, the threat of uncertainty might claim its way back, leading to the anxiety of emptiness and of meaninglessness. To avoid this potential for anxiety, the person who denies doubt cannot accept anything or anyone that might create it. And it is in fanatically affirming one's cultural worldview, or engaging in the values and social roles provided by that view that one can strive to reduce the existential terror that the anxiety of meaninglessness might evoke.

At this point, it is important to clarify that TMT does not neglect the importance of meaning. What TMT seems to focus on instead is the role meaning play as a tool to deny death. Meaning exercises a function in managing terror insofar as it controls death anxiety. According to TMT, uncertainty could lead to terror management processes because it would undermine the structures responsible to provide meaning, and, as a consequence, the terror of death would stop being suppressed and would rush again into existence. Uncertainty then would end up creating death-related thoughts and then terror management processes would be activated. Defense mechanisms would become a possibility in this context not due to the potential anxiety of meaninglessness, but due to the potential for death anxiety that those structures of meaning were designed to protect humans from in the first place. The claim in this thesis, however, is that meaning might have a more fundamental role to existence than just as a tool to deal with mortality. Meaning might be so important to humans that, when suicide is considered,

one can choose death in the face of the inescapable threat of emptiness, to avoid the despair of meaninglessness. Tillich would argue that meaning is fundamentally connected with a person's existence. One is human only by understanding and shaping reality, transforming one's world and oneself according to meanings and values. Meaning might play a more fundamental role than just as a death denial outcome, it seems to be connected with the very essence of what a human being is.

It is important to reinforce here that death is also extremely important in producing existential terror. One cannot simply reject the large TMT evidence obtained so far that seems to be clear in this direction. The intention of looking at existential terror through the perspective of meaning is to call into attention that more existential threats might play a similar role in terror management processes such as cultural worldview defense and self-esteem striving. More specifically how the threat of meaninglessness has the potential to produce existential terror without necessarily being mediated by death anxiety to produce this terror, due to its fundamental importance in existence.

When considering phenomena such as Martyrdom, which can be obtained in suicide attacks or suicide protests, the perspective shifts from the willingness to kill in order to protect one's worldview to the willingness to die in the name of culturally constructed beliefs. One might say that in doing so symbolic immortality or literal immortality is strived for, but then, even if that is the case, those strategies trump death and become more fundamental than the fear of dying. The meaning providing structures offered by culture become more essential than being a coping mechanism to deal with death. The culturally constructed beliefs can be indeed seen as a structure that provides meaning and might have even been awakened by the call for meaning that death provides, but it is worth mentioning that people are willing to accept death to protect it. In this light figure 3.1 is presented in which the conceptualized anxiety buffer proposed by TMT is added with one more existential threat, meaninglessness.

3.2 Meaninglessness as a Potential Threat

The Meaning Maintenance Model (MMM) was proposed to study the role of meaning threats in terror management processes and it seems to indicate that they might also produce worldview defense (Heine and Vohs, 2006). It is important to mention, however, that meaning in MMM seems to be more broadly defined than in TMT. MMM provides evidence such as an increased moral affirmation - compared to a control group - of participants that had the experimenter they were talking to secretly changed with another person wearing the same clothes (Proulx and Heine, 2008). Although the findings are interesting, the implicit assumption of meaning

death has the potential to produce existential terror and, as a consequence, cultural worldview defense and self-esteem striving would be activated to reduce the existential terror that was disturbed by the idea of dying. But this is not the only potential existential terror that one can deal with, and the hypothesis here is that the threat of meaning - the existential meaning that TMT refers to - is also an important threat to be dealt with and could also produce existential terror and lead to the need of the anxiety buffer to deal with this terror.

Now back to the discussion between MMM and TMT, the different definitions of meaning given by the two theories cannot explain, however, why similar outcomes to the ones observed in TMT - such as cultural worldview validation - were being obtained without Mortality Salience and without the necessity of directly evoking death awareness. In response to the findings presented by MMM, TMT posits that threats to meaning might produce similar effects to the ones observed by mortality salience because those threats to the anxiety-buffer system would lead to higher accessibility of death-related thoughts. TMT acknowledges that if meaning threats produce defensive responses without the mediation of death, this would complicate the view that the underlying processes of TMT are exclusively caused by thoughts of death, but would still not undermine the assumption that a major function of these psychological strategies (such as meaning providing structures) is to control existential terror (Pyszczynski, Greenberg, et al., 2006). In other words, even if it does not appear as a variable, death was still the one which forged those structures of meaning, working as an existential threat that gave different cultural worldviews its shape and form. The worldviews which deny death in a literal or symbolic manner would help people deal with their own mortality and would be preferred, selected, and transmitted.

One could still argue, however, that denying death would not necessarily be the only way that a worldview could help in dealing with the awareness humans have about their finite existence. Instead of denying death, a worldview could help people deal with their own mortality accepting and courageously facing it. The cultural worldviews, meaning providing structures and meaning itself can indeed come into existence triggered by death, this thesis does not dispute this idea, it actually endorses it. But they might become activated not necessarily by the denial of death, the claim is that they also emerge out of its acceptance, and this account for death perhaps can be a possible solution for the undesirable outcome that its denial can produce. This idea will be further explored in chapter 4 in which possible ways to deal with the problem of death will be addressed. This exploration will culminate in the view proposed in this thesis, which articulates that maybe the threat of meaninglessness might be the solution to the problem of death, and death might be the solution to the threat of meaninglessness. But before developing this idea

further, it is crucial to point out why the investigation of a possible solution to the unwanted outcomes - when existential terror has to be dealt with - has achieved rising importance in the present world.

3.3 Why Is It Increasingly Important?

Humans are constantly being reminded of their mortality. Being it consciously or unconsciously, within their desire or not. In books and movies, human characters die. On television or websites, the news of famous people that have just died usually brings attention and commotion. Accidents, wars, terrorism, and pandemic outbreaks have also claimed their way through the news. Friends and family members die. Reminders of death are unavoidable and the understanding of what they may cause and how they might change human behavior is an important quest.

Additionally, the pluralism and uncertainty that modern societies have to deal with make the cultural worldview validation previously described reach a new level of significance. The new “global villages” bring different cultures and values in closer contact with each other. The conflicting voices, religions, worldviews ever-present in a pluralist society create the opportunity for terror management processes a possibility in each corner of this global city. The spread of pluralist and democratic societies make diversity of points of view a present feature of daily life for more and more people (Kane, [2013](#)). Internet and social media have put the global villages into an even more global and connected level.

The pluralism feature of modernity can lead (and most probably led) to uncertainty. The recognition that there are different worldviews, different ways and perspectives in understanding reality, different traditions, social roles and paths from which one can derive meaning and self-esteem, this plurality can possibly become a threat due to the uncertainty it generates. It can lead to doubt and then to the threat of emptiness and meaninglessness as already pointed out. As a defense mechanism to the possibility of the anxiety of meaninglessness, terror management processes could take place. The clinging and attraction to one’s own worldview become salient and a way of restoring the certainty that was lost. The fact that it potentially can lead to an existential threat - such as the threat of meaninglessness - does not undermine the pursuit for the possibility of living in a plural society, with different ways of life and conceptions of reality. The encounter with the different should be a valuable and desired endeavor, but it makes the attempt of understanding the psychological underpinnings and the possible behavioral outcomes and attitudes that underlie the existence in a plurality of views a crucial mission in the contemporary world. Investigating and understanding it can lead to a contribution to the

learning process of how one can coexist and accept the different worldviews one might be exposed to.

Pluralism and uncertainty can threaten meaning yet from another path. Instead of resorting to worldview defense and self-esteem striving to reestablish certainty, another route however can also take place. The surrender to uncertainty, which can lead to skepticism about culture and worldviews. Since meaning is primordially a social process - which might have even been triggered by the existential concern about death, but mostly constructed in the individual's engagement with the meaning providing structures - the loss of the social, of cultural worldviews altogether might lead to lack of meaning in life. And meaning, one can argue, is an important element to deal with existential terror, being it produced by the threat of death or of meaninglessness.

3.4 The Necessity of Meaning

Cultural worldviews and self-esteem striving can indeed lead to undesirable outcomes. Affirming one's meaning providing structure and defending one's worldview can undeniably bring hostility and aggression toward people that do not subscribe to those beliefs. This undesired outcome is an important one and should be taken seriously and investigated. But at the same time, if in the attempt to reduce this undesirable outcome one simply proposes detachment of individuals from those structures that provide meaning, or the annihilation of those systems, this comes with the risk of severely maladaptive outcomes (Sullivan et al., 2013).

Take for instance the TMT findings connected to posttraumatic stress disorder (PTSD). It is argued that one of the central aspects of PTSD is the disintegration of the individual's meaning providing structure. It can no longer function properly because it has been disrupted in the core assumptions that underlie its contents. The severe trauma can undermine the faith one has in one's own meaning system and structure of reality, rendering the individual more easily exposed to existential terror. If that is the case, the cultural worldview validation strategy would not be of use as a terror management process, since the very foundation of the worldview has been broken down. It would not make sense to defend something that one no longer believes in. This was found in a series of studies in which people who suffered severe trauma and coped with it reestablishing the faith in the world's meaningfulness manifested worldview defense following mortality salience, while participants who showed high levels of PTSD, showed no defense mechanism following death reminders, pointing to the possibility of malfunction of the anxiety buffering system. (Pyszczynski and Kesebir, 2011). These findings address the importance in human functioning of those structures that provide meaning. It shows

that the mere annihilation of those systems to avoid the possibility of worldview defense is not a viable solution.

Possible ways to deal with existential terror, and as a consequence, also managing the potential damage that it can create comes to the forefront of the discussion. It is derived from TMT that if people perceive their lives as meaningful, they would have less need to rely on defense mechanisms such as hostility toward others when reminded of their mortality. But if meaning providing structures are necessary for humans to derive meaning from and if they end up creating defense mechanisms, the pressing question of how one can manage existential terror without resorting to potentially harmful outcomes becomes an inevitable one, and one that must be addressed.

4

Dealing With Existential Terror - Possible Solutions

Much has been pointed out about the problems of self-esteem striving and worldview defense. But if they are at the same time important aspects in human functioning, the question of how one can try to avoid the undesirable outcomes produced when existential terror is increased becomes an important one in understanding the psychological supporting structure of the anxiety buffer. Some solutions have appeared and will be discussed in this chapter. An attempt in addressing this issue will also be proposed in the scope of this thesis and evidence for this attempt will be later investigated and discussed.

Figure 4.1 illustrates how the anxiety buffer is conceptualized. The points that each solution seeks to work on are also illustrated. The numbers in the figure describe in which element of the anxiety buffer the solutions presented attempt to work on. The number of each solution follows the order they appear in this thesis. The first solution is represented by the number 1 and indicates that the belief in an afterlife affects Literal Immortality. The second solution, which argues for a tolerant and open worldview affect the anxiety buffer in the Cultural Worldview and Self-esteem Striving elements. The third solution seeks to reduce defense mechanisms through death reflection. The solution investigated in this thesis proposes that the problem of death might be solved by the threat of meaninglessness, while the threat of meaninglessness might be solved by the problem of death.

after MS. In two studies the summary which provided evidence for an afterlife eliminated the effect of MS in self-esteem striving. In another study, afterlife confirming information reduced worldview defense only for males (Dechesne et al., 2003).

This investigation presents evidence of the effects that the belief in an afterlife can have in participants that are reminded of their mortality. In those studies, however, the only presented layer for existential terror was death and the lack of it - the belief in an afterlife. It seems it leaves out concepts such as the anxiety of emptiness and meaninglessness and the anxiety of guilt and condemnation. What the described studies might fail to capture for instance are the valences associated with how an afterlife can look like. As if the beliefs in the afterlife offered only one possibility, an immortal existence full of meaning and without the risk of condemnation. One could however conceive the threat of the existence of an empty, boring afterlife, condemned by meaninglessness. This possibility could induce different outcomes, insofar as it could produce existential terror to be dealt with.

Moreover, how people act and what they do during their lifetime can be associated with different accounts of what one might get for an afterlife. The anxiety of guilt and condemnation could be another threat that might be evoked if the idea of an afterlife also offers the possibility of hell. Paul Tillich illustrates this prospect arguing that in the western world, at the end of the middle-ages, the predominant form of anxiety was in the dimension of guilt and commendation and not in the realm of the anxiety of death. The problem of death was addressed and mitigated by the Jewish-Christian message, among its contents the faith and belief in an afterlife, but the anxiety of condemnation was the one prevailing, which was intensified by the imagery of hell and purgatory (Tillich, 1952). The most pressing question in that age was not how one can outlast death, but what one has to do to attain forgiveness of sin, which direction and actions would lead to the divine way to heaven.

This does not invalidate the obtained findings and they, without doubt, contribute to the endeavor of clarifying the mechanisms behind dealing with existential terror. But the possibility of considering further potential threats that might produce existential anxiety creates the opportunity for more exploration and research. Since this thesis is partly an attempt to broaden the scope of existential terror studied in TMT, the threat of meaninglessness will be of particular significance and this project aims to take this threat into consideration.

4.2 Second Solution - Tolerant and Open Worldviews

A second possible solution to address the problems associated with the hostility and aggression observed when people defend their worldview following death reminders is to propose

updates in the worldviews. TMT has found a solid body of evidence that following mortality salience, people tend to use their anxiety buffer, relying on worldview defense and self-esteem striving to reestablish psychological equanimity. In defending their culturally constructed beliefs and in striving to be considered a valuable individual within this cultural worldview, one gets protection against the thought of one's own mortality that death reminders induced. This leads to the expectation that the worldview - in which tolerance, respect, and openness to different beliefs and alternative views about reality are endorsed and relevant values - would be reinforced and defended when the threat of death emerges.

Self-esteem striving would also change in response to an update of a worldview towards tolerance, respect, and openness. If one individual subscribes to a worldview in which tolerance is something of value, then in pursuing it, the individual is living up to the standards and norms of the system of belief one participates in. One should expect then that self-esteem striving would encourage people to become more tolerable and open following death reminders, since this response could increase the chances one would be considered an individual of value in a world of meaning. And in doing so they deal with the potential for anxiety that MS has provided.

There is evidence for that in TMT research. Take for instance the already mentioned findings that showed that when compassionate values were made salient, there was an increased preference for a political candidate who was generally perceived as more compassionate (indicated by polls) following mortality salience (Vail et al., 2009). In another study, when the value of tolerance was primed, Americans who were exposed to reminders of mortality were not more negative than participants in the control condition in their reaction to an essay that was critical to the United States (anti-US target). Additionally, when participants were not primed with tolerance, MS led to a more negative reaction towards a view that goes against their culturally constructed beliefs (Greenberg et al., 1992).

This solution, although probably necessary - considering that worldviews have to be shaped and suffer transformations to better fit progress in different aspects of human civilization - might come at a very slow pace, taking generations to show any transformation and also bringing in its shadow the possibility of uncertainty, emptiness and the threat of meaninglessness. This is in no sense a claim for not striving for progress in the cultural worldview realm, it should be a desired outcome if one is willing to achieve improvements and if one is striving to have a view which is more up-to-date with reality. But it should be done with caution and one should be aware that it happens in a lethargic and almost reluctant manner. It is an important solution to the problem of the inability to accept the different, the hostility towards the other that happens

when existential terror is produced. But it might be a solution that should be constantly present in the background. An ongoing and patient updating process.

It is also important to point out that tolerance, respect, and openness do not necessarily lead to an acceptance of any way or form of life. It seems to be contradictory to be tolerant and respectful with another view that does not tolerate and respect the different other, only by the fact of who they are, *i.e.*, racism. It is impossible to respect the offender without disrespecting the victim. The philosopher Robert Kane would call attention to the fact that openness and tolerance should be a starting point, but judgment and the call for rejection of a way of life are not and should not be denied by the view of openness and tolerance. Evil and pathological structures of meaning and worldviews could still be conceivable, so a culturally constructed belief in tolerance and openness should account for this possibility and the culmination of an intolerant outcome as a cultural worldview defense should still exist and be even desirable in that case. Of course, the matter of how to judge what is evil and even if there's such a thing as an objective, universal worth and parameter to make such judgments, that transcends limited points of view (what is also called the God's eye perspective) is a huge debate in ethics and, although a fascinating topic, it goes beyond the scope of this thesis.

4.3 Reinterpreting The Idea of Dying

It might be the case that what causes the unwanted outcome in defense mechanisms is derived from the denial of death. The attempt to keep it unconscious might create a blind devotion to worldviews. This leads to the thought that perhaps reflecting on one's own death, and not trying to deny it, might lead to a reduced existential terror when confronted with the idea of dying. Although when people are reminded of their mortality they can indeed take the denial and defensive route, as TMT has pointed out, there is still also the possibility of a positive confrontation with death. In this light, a third solution would be associated with the reflection about one's own mortality.

4.3.1 Third Solution - Death Reflection

This possibility comes with the realization that the idea of death might lead to personal growth, such as in clinical studies with people that face death as a real and an imminent threat. (Cozzolino et al., 2004, Wong and Tomer, 2011). In an attempt of trying to address whether a more concrete confrontation with death could lead to a diminished need of the anxiety buffer following MS, Cozzolino and colleagues investigated and compared the typical death reminders used in TMT experimental design with a more concrete and personal confrontation

with mortality, what is called *Death Reflection* (DR). More specifically, Cozzolino claims that mortality salience seems to ask “What do you think of death?”, while he wants to strive for a new type of death reminder which would evoke the question “This is how you died, what do you think about it?”. The Death Reflection manipulation is done by giving participants a passage in which they imagine themselves dying in an apartment fire. This scenario is followed by four open-ended questions. The first two ask about the participants’ feelings and thoughts about the event. The other two questions invite participants to think about the life they had up to that point and how their family would react to such an event (Blackie et al., 2016). Their investigation found evidence that DR led to a diminished worldview defense when compared to MS (Cozzolino et al., 2004).

Those findings indicate that depending on how death is constructed, there might be different responses to reminders of mortality. Taking into consideration the fact that reflection about one’s own death might lead to a reduced need for the anxiety buffer, this thesis aims to propose a solution to the problem of death in which its reflection brings an urge to pursue a meaningful existence.

4.3.2 Forth Solution - The Meaning of Dying

Ernest Becker claims in his book, *The Denial of Death*, that the terror of one’s own mortality is so overwhelming that humans conspire to keep it unconscious. According to Becker, “The vital lie of character” is the first line of defense against death. This vital lie could be understood in the process of creating a personality by absorbing the qualities of the godlike being. He pointed out that the price to pay in striving to be god’s image is too high. This comes necessarily with the repression of the body in the name of the veneration of a soul that time cannot annihilate. Humans sacrificed pleasure to negotiate for immortality. In the attempt of avoiding death, and within this negotiation process to be immortal, life escapes. Still according to Becker, society would then provide the second line of defense against death. It creates and offers a hero system that allows humans to believe they can transcend death by participating in something of permanent or at least persisting significance, engaging as a consequence in meaning providing structures and cultural worldviews. Becker believed the main task of human life was to become heroic, but this happened solely due to the quest of trying to transcend and to deny death (Becker, 1997); that is why culture must offer its members a symbolic system that is fundamentally religious, in which a member could hope for a transformation into a godlike figure, or at best something very close to the immortal ideal could emerge out of the engagement in the symbolic system.

One possible doubt that comes to one's mind is whether the vital lie of character and the hero system that culture provides is not just a distraction that makes life escape, while people cope with death, but rather is what life is about. Taking, for instance, the existential account for God given by Paul Tillich and Rollo May, the Divine Being as the power of being conquering non-being, temporality being claimed by eternity, doubt being prevailed by the ultimate reality (Tillich, 1964) - God as creative *potentia*, the essence of the power to become (May, 2007) - a being that understands and shapes reality according to meanings and values. Perhaps the best way to not let life escape and actually living it to the utmost is transforming oneself into a godlike figure, a mortal godlike figure.

Possibly a god that dies seems paradoxical, but using Camus' concept of revolt, maybe revolting against mortality in this paradoxical sense is what makes life worth living. Although counterintuitive it may seem, revolting against mortality involves accepting it. Bravely facing death in life and regardless of being limited and finite, aiming at the essence of the power to become, trying to transform oneself into god, despite the real existence or the possibility of becoming one. Transforming oneself into an individual of value, in a world of meaning, as TMT has pointed out, but not doing so in order to deny death, but in courageously taking death into being, and making this transformation possible despite one's own mortality.

Accepting death becomes then an essential part of revolting against it. And in this process, meaning becomes a crucial element in the acceptance of human suffering. This acceptance could lead to a call to take responsible actions in order to pursue a meaningful existence (V. E. Frankl et al., 2010). This call to meaning was not brought by the necessity of denying death, but rather by the courage of taking it seriously. This reinterpretation of the threat that death imposes, seeing it as a call to meaning, refers to the relationship one has with one's own death, in which the crucial question is how one reacts to a fact, in this case, one's own mortality. This existential truth (what Kierkegaard would call truth-as-relationship) is grounded in the relationship with death rather than the objective fact that one dies. The awareness of death can also provide existence and what one does at each moment an absolute quality (May, 2007).

Viktor Frankl explored this in-depth posing the question of whether meaning would be even conceivable for humans, creatures that are born out of nothingness and are, during all lifetime, threatened by the risk of dying. Moving in time from nothing into the possibility of nothingness. In an attempt to provide an answer to this fundamental question of existence, Frankl suggested that what is fundamentally transitory in the nature of human existence is not time, but rather the possibilities and chances to realize values, create, experience, and suffer meaningfully (V. E. Frankl et al., 2010). Once they have been realized, they move from the possibility of existence

to the eternity of the past. The very value of the present, its absolute quality, comes from the fact that it is only in the present when possibilities can be realized and eternalized into the past. And nothing can change what has been done, once in the past, they remain, written in the fabric of what has happened and existed. It is this very irreversible condition of the past that creates significance for what has been done. Frankl pointed out that this relevance is not essentially related to the fact that people will carry the memories throughout generations of what was realized, he claims that even if no one remembers, if the memory of the possibilities and values realized have been vanished and destroyed by time, the significance of what was achieved remains, since it is part of what came into existence, it became, is and will be part of the world.

The absolute value of the present brings with itself the notion of responsibility. It is the individual's responsibility to address what becomes part of what existed, what one chooses to bring into the eternity of the past. It is through this feature of the past that hope and a caution take place. Humans are responsible for what they bring into existence, and once written into existence, it cannot be erased. Responsibility then emerges out of the possibility of creation into eternity. The essential transitory nature of human reality - Frankl argued - comes exactly from the short-lived and ephemeral transition between the nothingness of the future into the eternity of the past.

It is as if everything were terrorized by the fear of the nothingness, and would rush from the future into the past and into existence, causing congestion at the narrow passage of the present. There everything crowds and pushes, and waits for its deliverance - either as an event passing into the past, or as our experience or our decision admitted by us into eternity. The narrow passage of the present leading from the nothingness of the future to the eternal existence of the past is, then, the borderline between nothingness and existence; it is the borderline of eternity. From this it follows that eternity is finite - it always extends to the moment of the present - to the moment where we want to decide what we want to let into eternity.

V. E. Frankl et al., [2010](#), p. 174

Rescuing something into the past, rather than putting it off into the future, is a safe and responsible way of using the present. Death enters in this context creating an urge. If humans would be immortal, they could legitimately postpone things forever. The possibilities and chances to realize values, create, experience; they could be delayed for 10, 100, or 1000 years. In the face of death, however, humans are concealed by their boundaries and limitation. They

confront the absolute constraint underneath their own reality. And it is exactly this restriction that lays the foundation for the urge to utilize their lifetimes to the utmost, not letting singular opportunities pass by unused. (V. Frankl, [2004](#)). Without the limitation that death imposes, there would be no urge to bear the responsibility of pursuing a meaningful existence. And this urge comes not necessarily by the denial of death, but rather by the recognition and acceptance of its unavoidable reality.

This view and possible solution to the problem that existential terror might produce will be further investigated using the TMT experimental paradigm. The study conducted in this master's thesis aims to address this solution and check whether the idea of accepting death as an urge to meaning can lead to less existential terror to be dealt with when people are reminded of their mortality, causing, as a consequence, a reduced need for defense mechanisms. To test the solution of accepting death as a tool to achieve meaning (Mortality + Meaning), this view will be contrasted with its opposite (Immortality + Meaninglessness). If the former produces less existential terror to be dealt with than the later, accepting one's own mortality and seeing it as an urge to meaning surpasses the promise of immortality in mitigating existential terror.

5

Method

The experimental design proposed in this master's thesis was heavily inspired by studies conducted using TMT's experimental paradigm, more specifically the already mentioned Cohen's study in which the preference for certain types of leaders following mortality salience was examined (Cohen et al., [2004](#)); the research conducted by Dechesne which investigated the effects that an afterlife belief had on reminders of mortality; and also a study performed by Wisman and colleagues who found that promises of immortality reduced effects of mortality salience for people low in trait self-esteem, who are especially susceptible to terror management processes (Wisman and Heflick, [2016](#)).

In trying to draw attention to different existential aspects that could also produce existential terror, and to try to convey the idea that those aspects can trigger terror not solely because of the threat of death the study conducted in this thesis was designed. If meaninglessness is a threat that can produce existential terror by itself, not only mediated by the idea of dying, meaning might have a value in itself that goes beyond the utility of coping with one's mortality. If that is the case, the threat of meaninglessness might produce even more existential terror to be dealt with than the idea of dying. Put differently, meaning could perhaps even surpass the promise of immortality in the endeavor of alleviating existential terror.

In order to investigate that, the priming procedure used in other studies to articulate the idea

of the possibility of an afterlife will get an extra layer. Existential terror will not be induced only by the afterlife belief and it will not assume only the binary aspect: evidence for the existence of an afterlife; lack of evidence for the existence of an afterlife. Meaning will be added to it and when the problem of death is reduced by the evidence of immortality, it will come with the idea that it is a meaningless afterlife - this condition will be called Meaningless Immortality (Afterlife + Meaninglessness). The condition that denies any evidence for an afterlife, increasing as a consequence the problem of death, comes however with the solution addressed in this thesis, in which death can actually be seen as an urge to take the responsibility of pursuing a meaningful existence (Death + Meaning). In this way, the two existential aspects are taken into consideration in the experimental design - the threat of death and the threat of meaninglessness.

If death is the fundamental problem of existence and meaning is just a tool to cope with death, it is expected that the argument endorsing an afterlife, but devoid of meaning, would be the one which produces less existential terror, since the problem of death is reduced by the belief in immortality, even if it comes with the threat of meaninglessness. What this thesis claims however is that meaning goes beyond death in its function for psychological equanimity, and derived from that, it is expected that an immortal existence, but devoid of meaning, would produce more existential terror to be dealt with than the rationalization of death as a call to meaning, producing then the possibility of a mortal meaningful life.

Existential terror will be measured through an increased attraction to leaders that offer the possibility of cultural worldview validation and self-esteem striving, as done by Cohen (Cohen et al., 2004). The prediction for this study is that participants in the Meaningless Immortality group will have a greater existential terror to be managed, and this will be reflected in an increased preference for Charismatic and/or Relationship-oriented leaders.

5.1 Participants and Design

The sample size was determined using power analysis ¹. It yielded an optimal number of participants of 299, which were distributed then in three groups of 100 participants.

The three hundred participants were collected using online platforms for survey sharing²

¹Sample size was calculated using 80% Power and an effect size of 0.2 (estimated based on Burke's meta-analysis and considering that the more subtle difference between the priming effects - meaningful mortality $\times$ meaningless immortality $\times$ dental pain - would possibly slightly diminish the effect size commonly seen in TMT and political attitudes) (Burke et al., 2013).

²A total of 408 participants were collected using the online platforms. Due to the crucial step that the priming effects (articles presented in the meaningful mortality, meaningless immortality and dental pain groups) play in this study, it was essential to check whether the participant actually read the article presented in the beginning

(193 females and 107 males ranging in age from 15 to 87, $M = 26.33$, $SD = 10.29$). They were randomly assigned to three different groups:

1. **Meaningful Mortality** - Participants before being reminded of their mortality were induced to rationalize death and to consider it as a tool to achieve meaning.
2. **Meaningless Immortality** - Before being reminded of their mortality, participants read an article advocating for the possibility of an eternal existence, but devoid of meaning.
3. **Dental Pain** - Participants read an article about the anxiety produced by a Dentist visit before being reminded of dental pain.

5.2 Procedure and materials

Platforms designed to share surveys online were used (SurveySwap, Survey Circle, Poolpool). The survey was initially presented as an investigation of personality attributes and how they affect the evaluation of political candidates. This was done to create a cover story for the real goal of the study. The participants were also instructed that the relationship between personality and memory would also be explored. In order to do that they were asked to read a passage of a scientific article at the beginning of the questionnaire and a question related to the article would be asked at the end of the questionnaire. Since reading the article was an essential step in this study - the different experimental conditions would be related to the article version the participants read - this question was later used in the analysis of the data to control for the participants who actually read the bogus article.

After pressing a button, the extract of the scientific article appeared on the screen. The article was written by the researchers and was presented in one of three versions. Two of the versions summarized a bogus scientific and medical research on near-death experience (NDE), and were similar in length and style, but opposed in content (see Appendix A for the complete article presented). Participants in the “Meaningless Immortality” condition read a version stating that studies conducted by two leading researchers strongly indicate that near-death experiences are real and that there would be some sort of life after death, contradicting the idea of a finite existence. Although the type of blissful experience associated with NDE such as a feeling of

of the study. This was done with a question related to the article asked at the end of the questionnaire (“Please, write down in a few words what you can remember of the scientific article presented at the beginning of this questionnaire”). The participants who failed to mention at least a few aspects of what the article was about, or did not answer the question were considered participants who have not read the priming article and therefore were deleted from the data of this study.

moving through a tunnel of bright light, toward a greater source of light was a hallucination provided by some substances in the organism, in the advanced stage of the NDE no substance in the brain could be detected as the cause of it. The researchers point out that most subjects, who had a real NDE of this advanced stage, although absolutely convinced that death is not the end of existence, appear to find this experience frighteningly boring and devoid of meaning.

Participants in the “Meaningful Mortality” condition read a version of the article in which researchers found that near-death experiences were hallucinations and that there would not be any sort of life after death, reinforcing the idea of a finite existence. NDE reports made by the patients can be entirely explained by a rush of endorphins in their brain. Although near-death experiences were a hallucination provided by some substances in the organism, the researchers indicated that the patients reacted positively when informed about the results of the study. They were able to see, in their mortality, an urge to take responsible acts in order to pursue a meaningful existence.

Participants in the “Dental Pain” condition read a version of the article in which studies conducted by two researchers indicate that the fear of dentists is much more common than previously anticipated and that it afflicts people of all ages. Reports made by the patients include dental pain and the possibility of feeling pain after the visit as the main cause of the distress associated with the idea of going to the dentist. The researchers also mention that other elements associated with pain, like the sound of a dentist’s office, particularly the sound of the drill, were also important factors of the distress that the idea of a dentist visit may cause.

The third version of the article presented was intended to create an unpleasant stimulus, yet not related to death, as the other two versions. This is a common practice in the TMT experimental design since there is an attempt to differentiate the outcome provided by a group who confront their mortality with a control group that is confronted with some unpleasant stimulus, but not fatal; like dental pain, or failing an exam. The control condition allows the comparison between the outcome produced in the unpleasant stimulus condition to the other condition in which the idea of death is present. If there’s a difference in the outcome of the groups, it could be explained by the death reminder, not merely by the unpleasant stimulus that a death reminder can evoke.

After several personality questionnaires to support the cover story, the Rosenberg’s Self-Esteem Scale was presented (Rosenberg, 1965). The scale measures the participant’s global feelings with 10 items such as, “I feel I have a number of good qualities” and “All in all, I am inclined to feel that I am a failure”. Responses were recorded using a 4 - agreement format, where 1 = *strongly disagree* and 4 = *strongly agree*. The scale showed good internal reliability

($\alpha = 0.91$).

In the next step of the questionnaire, participants were informed that research has shown that intuitive answers to questions about particular topics can provide considerable information about one's personality. Following this message, the mortality salience manipulation was introduced. Participants in the Meaningful Mortality and Meaningless Immortality groups had to answer two open-ended questions (used in previous TMT studies): "Please, briefly describe the emotions that the thought of your own death arouses in you." and "Jot down, as specifically as you can, what you think will happen to you as you physically die and once you are physically dead.". Participants in the Dental Pain group responded to the questions: "Please, briefly describe the emotions that the thought of dental pain arouses in you." and "Jot down, as specifically as you can, what you think will happen to you as you physically experience dental pain and once you have physically experienced dental pain.". All participants then completed the Positive and Negative Affect Schedule (PANAS) (Watson et al., 1988). More specifically, participants indicated to which extent 10 positive and 10 negative affect items reflected how they were feeling at that moment (e.g., Scared, Inspired). Responses were recorded using a 5 - agreement format, where 1 = *Very slightly or not at all* and 5 = *Extremely*. Using PANAS is a common procedure in the TMT experimental design, since it is possible to investigate any possible influence of Positive and Negative affect after participants are reminded of their mortality. It is worth mentioning that based on past research, there was no expectation that mortality salience could change affect.³

The effects of Mortality Salience occur more clearly after a delay period, when the thoughts of death are not consciously accessible (Greenberg, Pyszczynski, Solomon, Simon, & Breus, 1994). Due to this fact, after PANAS, a delay task was introduced. Participants were asked to rate 10 symbols (all the symbols above the numerical keys of the keyboard, e.g., "!", "@") on a 5 point scale, ranging from 1 = "Very ugly", 5 = "Very beautiful".

Next, participants were instructed to read the campaign statements written by three different candidates for a hypothetical upcoming gubernatorial election. Three leadership styles of candidates were presented: relationship-oriented, charismatic, and task-oriented. The campaign statements of each candidate were taken from Cohen's study (Cohen et al., 2004).

As pointed out by Ehrhart and Klein (2001), the Charismatic Leader communicates high-performance expectations to followers; presents confidence in follower's abilities to reach goals;

³ANOVAs were conducted to investigate whether there was any significant variation of Positive or Negative affect across conditions. Following previous TMT research no interaction between condition and Positive or Negative affect was found. There was also no interaction between Positive or Negative affect and condition for the evaluation of the different leadership styles.

takes risks that oppose the status quo; expresses a value-based vision and emphasizes collective identity:

I will be the perfect governor for this great state because I am committed to this state and this nation's future. I work hard to communicate my vision for this state to my constituents. I set high standards for my cabinet members and myself and I expect them to work as hard as they can to reach those standards. However all this hard work is done not just for the sake of productivity; I want everyone, state employees and private citizens alike, to reach their potential and do the best job that they can. I want all citizens to realize how good they can be and how much they have to offer to our state and great nation. My goal is to do things differently than my predecessors have done and I am willing to take some chances to show my voters how things can be improved. I rely on each and every citizen to be creative and help build our state and our nation. You are not just an ordinary citizen, you are part of a special nation and if we work together, we can make a difference.

The relationship-oriented leader treats the followers with kindness and respect; values communicating with and listening to followers; shows trust and confidence in followers and recognizes their contribution:

I will be the perfect governor for this state because I worry about the citizens' well being. I treat everyone that I come into contact with, with consideration and respect. I am committed to being friendly and respectful no matter how high the political tension may rise. I emphasize communication among my staff and all citizens. I inform every one of all new programs or policies and I am open for suggestions. I encourage all citizens to take an active role in improving their state. I know that each individual can make a difference. Everyone's contributions are recognized and appreciated.

The task-oriented leader plan and schedule the work to be done; sets goals that are ambitious, but realistic; provides necessary resources and coordinates activities:

I will be the perfect governor for this state because I can accomplish all the goals that I set out to do. I begin by working with my staff and cabinet to set work goals. I do not promise to change the world; the goals set out before us are realistic yet challenging. I am very careful in laying out a detailed blueprint of what needs to be done so that there is no ambiguity. Once my cabinet and I have all the goals and

objectives laid out I will implement statewide plans to provide the resources to get the job done. Finally, everyone on my staff has their own specific role so that their task is performed with the utmost efficiency.

The participants should evaluate each candidate, after reading their statements. They were asked to answer five questions: “How much do you believe this candidate can contribute to society?”; “How much would you enjoy living in this state if this candidate were elected?”; “How much do you admire this candidate?”; “How much do you find this candidate’s beliefs in agreement with your own?”; “To what extent would this candidate be an ideal governor?” Responses were recorded using a 5 - agreement format, where 1 = *Not at all* and 5 = *Extremely*.

After reading and evaluating the three candidates presented, the participants were asked to choose the one they would vote in an election. Following the voting phase, the participants were asked to write down in a few words what they could remember from the scientific article presented at the beginning of the questionnaire. Finally, after answering the question, the participants were thanked for their participation and they were presented information on the real purpose of the study.

6

Results

To check whether there was any difference in the evaluation for each leader in the different groups, Cronbach's alpha was used to verify the internal consistency of the five questions used to access the evaluation of the candidates. The alphas .91, .93, and .91 were obtained for the relationship-oriented, charismatic, and task-oriented leaders respectively. Since the questions presented an acceptable consistency, they were averaged and a composite score was obtained, representing the evaluation score for each leadership style for each participant.

After all the assumptions were verified (e.g., normal distribution and homogeneity of variance), a mixed analysis of variance was then performed 3 (Meaningful Mortality, Meaningless Immortality, Dental Pain) $\times$ 3 (Relationship-oriented leader, task-oriented leader, charismatic leader). There was a main effect for the leadership style of the candidates $F(2, 594) = 15.62; p < .001$. However, for the evaluation variable; there was no interaction between Condition and leadership style, $F(2, 594) = 0.29; p = .88, p > .05$; and no main effect on condition $F(2, 297) = 0.1; p = .907, p > .05$. Main effect on leader style was due to participants reporting significantly more positive evaluations of the relationship-oriented candidate ($M = 3.43$) than both the Charismatic Candidate ($M = 3.14$), ($T = 1, 299$) = $-4.9; p < .001$, and the task-oriented candidate ($M = 3.13$), ($T = 1, 299$) = $5.02; p_{adj} < .001$ (p_{adj} refers to the Bonferroni adjusted p-value). The difference in the evaluation of the charismatic and task-oriented leader

were not statistically different. The mean evaluations of the three candidates by condition can be seen in figure 6.1

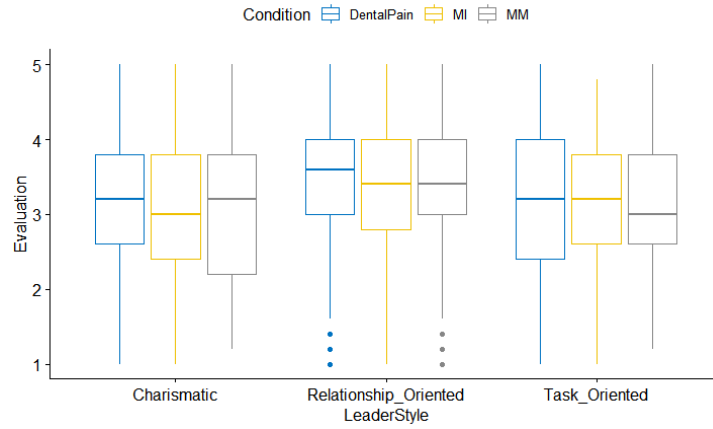


Figure 6.1: Mean evaluation for each candidate in each group

Since there's evidence that gender might influence the outcome of the measured defense mechanism, a 3-way ANOVA was conducted 3 (Meaningful Mortality, Meaningless Immortality, Dental Pain) $\times$ 3 (Relationship-oriented leader, task-oriented leader, charismatic leader) $\times$ 2 (Male, Female). There was no 3-way interaction in the variables considered, $F(4, 588) = 2.06, p = .084, p > .05$. However, it is worth mentioning that there was a two-way interaction between gender and leader style $F(2, 588) = 5.43; p = .005; p < .01$. It can be seen that the simple main effect of gender was significant at the relationship-oriented leadership style ($p_{adj} = .03, p < .05$), but not for the charismatic or task-oriented leader. Pairwise comparisons show that the evaluation score was significantly different in females vs. males comparison at the Relationship-oriented leader ($p_{adj} = .01, p < .05$)

There was statistical significant effect of leadership style for females ($p_{adj} < .001$), but not for males. Using pairwise paired t-test comparisons, it can be noted that the pairwise comparisons charismatic *vs* relationship-oriented leader; relationship-oriented leader *vs* task-oriented were statistically significant for females ($p_{adj} < .001$ in both comparisons), indicating that for females there was a preference for the relationship-oriented leader when compared to the task-oriented and the charismatic leader. For males, the mean evaluation score was not statistically significantly different for any of the leader styles.

Since self-esteem might also play a role in the outcome of the defense mechanism, Rosenberg's Self- Esteem Scale was used to investigate its possible effects in the evaluation of the candidates. The questions used showed acceptable internal reliability ($\alpha = .91$) and the composite score of self-esteem was obtained ranging from 0 to 30 as commonly done for Rosenberg's scale. The score was mean-centered ($M = 19.71, SD = 6.33$) in order to differentiate between participants

with low and high self-esteem. The participants with a score below the obtained mean were considered to be a low self-esteem participant in the data and the ones with a score equal or higher than the obtained mean were labeled as the high self-esteem participants. A 4-way ANOVA was then conducted 3 (Meaningful Mortality, Meaningless Immortality, Dental Pain) $\times 3$ (Relationship-oriented leader, task-oriented leader, charismatic leader) $\times 2$ (Male, Female) $\times 2$ (High Self-esteem, Low Self-esteem).

There was no 4-way interaction between condition, leadership style, gender, and self-esteem for the candidate's evaluations. There was, however a 2 way interaction for gender and leader style, $F(2, 576) = 3.85, p = .022, p < .05$, as indicated in the 3 way ANOVA previously described. There was also a 2 way interaction for self-esteem and condition ($F(2, 288) = 4.24, p = .015, p < .05$). Participants with high self-esteem evaluated higher the leaders in the dental pain condition, compared to the MM group ($p_{adj} = .029, p < .05$). Contrarily, participants with low self-esteem evaluated the candidates higher in the MM condition when compared to the dental pain group ($p_{adj} = .044, p < .05$). Although this could indicate that candidates could appear more appealing to participants with low self-esteem in the MM condition, not much is added to the analysis since the leader style is ignored in this two-way interaction (the mean of all evaluations is the variable which is significantly different, not the mean for each candidate - participants evaluated in general higher or lower, independently of the specific leader they were evaluating).

The relevant information up to this point was that the evaluation of the relationship-oriented leader was higher than the charismatic and task-oriented leaders and this could be explained by the higher evaluations of female participants to this leadership style. As expected, besides gender, self-esteem also seems to be an important variable in this study due to the interaction between self-esteem and experimental condition presented previously. However, the data analysis conducted so far for the evaluation of the candidates does not indicate any difference for the ratings of the different leaders due to the experimental condition the participants were in. This goes against the predictions of this study since it was expected that, under certain experimental conditions there would be an increased attraction for certain types of leaders. Although It is important to point out that there was no effect of the different conditions on the rating of the different candidates, this might be explained by the granulated nature of the evaluation questionnaire, that might fail to capture, with significance, the predicted different appeal across conditions. It is expected that the voting behavior, that represents who the participants would choose in an election will be more determinant to which candidate the participant was more attracted to.

Table 6.1: Number of votes for each candidate in each experimental condition

Experimental Condition	Relationship-oriented	Charismatic	Task-oriented
Meaningful Mortality	39	30	31
Meaningless Immortality	45	30	25
Dental Pain	41	23	36

Table 6.2: Number of votes by condition for males with low self-esteem

Experimental Condition	Relationship-oriented	Charismatic	Task-oriented
Meaningful Mortality	8	3	9
Meaningless Immortality	11	6	4
Dental Pain	0	2	7

Number of votes

To check whether the difference in the number of votes for each candidate was statistically significant, chi-squared test was performed. Considering all participants, the number of votes for each candidate in each experimental condition is presented in table 1:

The chi-squared test for all participants showed no significant interaction between experimental condition and leadership style, $\chi^2(4, N = 300) = 3.607, p = .462, p > .05$. Although considering all the participants there was no interaction, since it was expected that gender and self-esteem might influence the measured defense mechanism (voting behavior), further investigation was conducted, considering males, females, low self-esteem, and high self-esteem participants. No interaction was found for females with low or high self-esteem as well as for males with high self-esteem. However, for males with low self-esteem, Fisher's exact test confirmed an interaction between experimental condition and leadership style $p = .015, p < .05$. Indicating that males with low self-esteem were affected by the experimental conditions as predicted (Fisher's exact test was used in the analysis due to the small sample size in the contingency tables).

The number of votes by condition for males with low self-esteem is presented in table 2. To further investigate which candidates were affected by the experimental conditions, Fisher's exact test was used for each candidate across conditions.

Relationship-oriented leader Males with low self-esteem were significantly more likely to vote for the Relationship-oriented candidate in the Meaningless immortality condition, compared to the Dental Pain group ($p = .006, p < .01$, Fisher's exact test).

Odds ratio was then used to investigate the strength and direction of the association between the variables. The odds of a male with low self-esteem voting for the relationship-oriented leader in the MI condition is 9 times higher than the odds of voting for the same leadership style in the Dental Pain condition (95% Confidence interval: 1.07, 403.32).

Charismatic leader There was no statistically significant difference in the number of votes for the charismatic leader for males with low self-esteem between the different conditions($p = .611$, Fisher's exact test).

Task-oriented leader Males with low self-esteem were significantly less likely to vote for the Task-oriented candidate in the Meaningless immortality condition, compared to the Dental Pain group ($p = .004, p < .01$, Fisher's exact test).

The odds of a male with low self-esteem voting for a candidate other than the task-oriented leader in the MI condition is 7.93 times higher than the odds of voting for a candidate other than the task-oriented one in the Dental Pain condition (95% Confidence interval: 1.99, 68.28).

The results suggest that, when compared to the dental pain condition, the appeal of the task-oriented leader diminishes under the MI condition, and this attraction is mostly transferred to the relationship-oriented leader. It is important to point out that this effect was only observed in the meaningless immortality group, and not in the meaningful mortality one, implying that for males with low self-esteem the MI condition led to a higher necessity for the defense mechanism, working as evidence for the prediction of this study.

7

Discussion and Conclusion

This study was conducted to investigate whether the threat to meaning would surpass death in producing defense mechanisms. The implications of how those two existential aspects might affect cultural worldview defense, more specifically voting behavior was also addressed. It was predicted that participants in the meaningless immortality group - due to a higher existential terror they would be exposed to - would have a stronger need for the meaning providing structure offered by the charismatic and/or relationship-oriented leaders. The findings indicate that when all participants were considered there was no statistically significant interaction between voting behavior and condition. When however males with low self-esteem were evaluated, there was a statistically significant increase in the number of votes for the relationship-oriented leader, but this effect was not seen for the charismatic leader. This result confirms the prediction for this thesis, insofar as the relationship charismatic leader was considered a leader able to provide a sense of mutual responsibility and a framework for self-esteem striving, which is needed for terror management processes.

The fact that only the relationship-oriented leader was significantly affected in this study (and not also the charismatic leader or only the charismatic) might be related to the data that was collected and due to the historical social context in which the study took place. Since this study is composed mostly of young students as participants (the ones who use survey sharing

platforms as a way to collect participants for their own academic surveys), it is possible that there was an association of the charismatic leader campaign statements with a more conservative right-wing leaning, which generally does not represent the preference among students and young adults. Although a more conservative era seems to be starting, in which conservative leaders have achieved rising support, importance, and attention, this worldview shift does not appear across all age groups. Younger voters are less likely to vote for conservative populist parties than older generations (Inglehart and Norris, 2017). Brexit, Trump, and other political moves in recent years have stamped with their political ideology the charismatic leader discourse, with an over-emphasis on the message of a great nation and great people. It is important to mention that the charismatic leader is not necessarily associated with a political view, being possible to assume a charismatic style in any position of the political sphere. But due to a recent historical context, one can possibly draw this connection and associate the charismatic leader with a conservative worldview. This might have played a role in the choice and preference for the meaning providing discourse offered by the relationship-oriented leader in this study.

Another point that should be addressed is the fact that only males with low self-esteem were significantly affected. In several studies in TMT, gender has moderated mortality salience effects. In this thesis gender also seems to have been an important variable reinforcing the findings that it indeed plays a role in how participants defend themselves against existential terror. The trait self-esteem has also been associated with how mortality salience affects participants in TMT experiments. People with high self-esteem seem to be less vulnerable to existential terror, which in turn makes them less susceptible to worldview defense and self-esteem striving. On the other hand, low self-esteem has been linked with an increased vulnerability to existential threats, which leads to a higher need for the defense mechanism used to control it. So the findings associated with the low self-esteem group follows the expectations of how the trait interacts with existential terror.

The prediction in this thesis was that the view which takes death into being has the potential to produce less existential terror than the one in which the problem is not death but meaninglessness. This was indeed observed and confirmed, but only for males with low self-esteem, which could have potentially been the most vulnerable group of participants to terror management processes in this study. The fact that a significant effect was only found for the most vulnerable group might be explained by the very nature of comparison used in this study. The articles presented to participants prior to MS might have diminished the effect that would be observed if solely MS was presented without any priming.

If one takes the worst condition in our study, meaningless immortality, it is possible to argue

that this condition might still produce less anxiety than if only mortality salience is induced. The meaningless immortality priming solves the problem of death, reducing its threat by offering evidence for an afterlife. This comes, however, with imposing the threat of meaninglessness. Although anxiety-provoking (and as the findings indicate generating more defense mechanism than the meaningful mortality condition) this might still be better than having death and meaninglessness that a death reminder alone might arouse (as typically done in TMT design).

In other words, it is possible that when just presented with reminders of mortality, or only with reminders of meaninglessness, a combination of different existential threats might also be evoked (such as death + meaninglessness + others), leading to a significant increase in existential terror and consequently a stronger cultural worldview defense and self-esteem striving. This might explain why in this study it was only possible to observe a statistically significant result in the most vulnerable group for terror management processes. This creates space for further investigation and research. Nevertheless, it is important to point out that even only affecting the most vulnerable group, the expected stronger existential terror and therefore greater worldview defense and self-esteem striving observed in the meaningless immortality group represents findings that corroborate to the prediction and hypothesis of this study. Meaning might triumph over immortality in reducing existential terror.

One of the intentions of this experimental design was also to change as little as possible the experimental paradigm proposed by TMT. Mortality Salience induction was intentionally left unchanged and the only manipulated variables were the priming conditions before MS. This was done in order to marginally add to the TMT experimental paradigm the extra existential layer advocated in this thesis that might also play a role in producing existential terror and defense mechanisms - the threat of meaninglessness. In doing so this study slightly changes the typical TMT experiment and - as a first attempt - it is easier to draw conclusions and make comparisons with the large body of research in TMT. It is still possible, however, to conceive an experimental design that instead of using Mortality Salience, uses what it will be called here Meaninglessness Salience. An induction that tries to trigger in the participant not the threat of death, but the threat of meaninglessness. Measuring worldview defense and self-esteem striving in experiments that threat this sense of existential meaning opens up possibilities for future research, which could in turn work as evidence to the hypothesis that the threat of meaninglessness can also produce defense mechanisms.

7.1 Conclusion

The solution proposed by this thesis seems to work in reducing existential terror. Accepting

death and taking it seriously can also be a way of bringing meaning into existence. The threat of meaninglessness is diminished by the urge for meaning that death provides, while the threat of death is diminished by the meaning it can offer. Reinterpreting the idea of dying and seeing it as a possible force to achieve meaning makes two potential existential threats that can lead to existential terror into two complementary concepts which bring responsibility and meaning into the core of being.

In Aristotle's account for wisdom, in order to fully understand anything, to have wisdom about it, one must seek, among other answers, one that addresses its purposes and the good it seeks. This study was an attempt to pursue and perhaps contribute to this quest. To fully understand death, to have wisdom about it, it is also important to understand its meaning. Borrowing Kierkegaard's notion that truth lies in the nature of the relationship, the question of whether death annihilates all meaning loses its power because what matters the most is the relationship with what death represents. And it is in the reality underlying this connection where the possibility of meaning exists. Death is not necessarily the problem and its rationalization is possibly a solution. Perhaps meaning is not just a tool to deny death, but rather death is a tool to achieve meaning.

Bibliography

- Arndt, J., & Greenberg, J. (1999). The effects of a self-esteem boost and mortality salience on responses to boost relevant and irrelevant worldview threats. *Personality and Social Psychology Bulletin*, 25(11), 1331–1341. <https://doi.org/10.1177/0146167299259001>
- Arndt, J., Greenberg, J., & Cook, A. (2002). Mortality salience and the spreading activation of worldview-relevant constructs: Exploring the cognitive architecture of terror management. *Journal of Experimental Psychology: General*, 131(3), 307–324. <https://doi.org/10.1037/0096-3445.131.3.307>
- Becker, E. (1997). *The Denial of Death* (1st ed.). Free Press.
- Blackie, L. E., Cozzolino, P. J., & Sedikides, C. (2016). Specific and individuated death reflection fosters identity integration. *PLoS ONE*, 11(5), 1–17. <https://doi.org/10.1371/journal.pone.0154873>
- Burke, B. L., Kosloff, S., & Landau, M. J. (2013). Death goes to the polls: A meta-analysis of mortality salience effects on political attitudes. *Political Psychology*, 34(2), 183–200. <https://doi.org/10.1111/pops.12005>
- Burke, B. L., Martens, A., & Faucher, E. H. (2010). Two decades of terror management theory: A meta-analysis of mortality salience research. *Personality and Social Psychology Review*, 14(2), 155–195. <https://doi.org/10.1177/1088868309352321>
- Castano, E., Leidner, B., Bonacossa, A., Nikkah, J., Perrulli, R., Spencer, B., & Humphrey, N. (2011). Ideology, Fear of Death, and Death Anxiety. *Political Psychology*, 32(4), 601–621. <https://doi.org/10.1111/j.1467-9221.2011.00822.x>
- Cohen, F., Solomon, S., Maxfield, M., Pyszczynski, T., & Greenberg, J. (2004). Fatal Attraction, 15(12), 846–851.
- Cozzolino, P. J., Staples, A. D., Meyers, L. S., & Samboceti, J. (2004). Greed, Death, and Values: From Terror Management to Transcendence Management Theory. *Personality and Social Psychology Bulletin*, 30(3), 278–292. <https://doi.org/10.1177/0146167203260716>

- Dechesne, M., Greenberg, J., Arndt, J., & Schimel, J. (2000). Terror management and the vicissitudes of sports fan affiliation: The effects of mortality salience on optimism and fan identification. *European Journal of Social Psychology*, 30(6), 813–835. [https://doi.org/10.1002/1099-0992\(200011/12\)30:6<813::AID-EJSP17>3.0.CO;2-M](https://doi.org/10.1002/1099-0992(200011/12)30:6<813::AID-EJSP17>3.0.CO;2-M)
- Dechesne, M., Pyszczynski, T., Arndt, J., Ransom, S., Sheldon, K. M., Van Knippenberg, A., & Janssen, J. (2003). Literal and Symbolic Immortality: The Effect of Evidence of Literal Immortality on Self-Esteem Striving in Response to Mortality Salience. *Journal of Personality and Social Psychology*, 84(4), 722–737. <https://doi.org/10.1037/0022-3514.84.4.722>
- Ehrhart, M. G., & Klein, K. J. (2001). Predicting followers' preferences for charismatic leadership: The influence of follower values and personality. *Leadership Quarterly*. [https://doi.org/10.1016/S1048-9843\(01\)00074-1](https://doi.org/10.1016/S1048-9843(01)00074-1)
- Frankl, V. (2004). *The Doctor and The Soul: From Psychotherapy to Logotherapy* (1st ed.). Souvernir Press.
- Frankl, V. E., Batthyany, A., & Tallon, A. (2010). The feeling of meaninglessness : a challenge to psychotherapy and philosophy. *Marquette studies in philosophy*.
- Fritsche, I., Eva Jonas, Fischer, P., Koranyi, N., Berger, N., & Fleischmann, B. (2007). Mortality salience and the desire for offspring. *Journal of Experimental Social Psychology*, 43(5), 753–762. <https://doi.org/10.1016/j.jesp.2006.10.003>
- Fromm, E. (1994). *Escape from Freedom* (1st ed.). Holt Paperbacks.
- Gailliot, M. T., Schmeichel, B. J., & Baumeister, R. F. (2006). Self-regulatory processes defend against the threat of death: Effects of self-control depletion and trait self-control on thoughts and fears of dying. *Journal of Personality and Social Psychology*, 91(1), 49–62. <https://doi.org/10.1037/0022-3514.91.1.49>
- 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. <https://doi.org/10.1111/j.1751-9004.2008.00144.x>
- Greenberg, J., Pyszczynski, T., Solomon, S., Rosenblatt, A., Veeder, M., Kirkland, S., & Lyon, D. (1990). Evidence for Terror Management Theory II: The effects of mortality salience on those who bolster or threaten worldview. *Journal of Personality and Social Psychology*, 58(2), 308–318.
- Greenberg, J., Simon, L., Pyszczynski, T., Solomon, S., & Chatel, D. (1992). Terror Management and Tolerance: Does Mortality Salience Always Intensify Negative Reactions to Others

- Who Threaten One's Worldview? *Journal of Personality and Social Psychology*, 63(2), 212–220. <https://doi.org/10.1037/0022-3514.63.2.212>
- Harmon-Jones, E., Simon, L., Greenberg, J., Solomon, S., Pyszczynski, T., & McGregor, H. (1997). Terror Management Theory and Self-Esteem: Evidence That Increased Self-Esteem Reduces Mortality Salience Effects. *Journal of Personality and Social Psychology*, 72(1), 24–36. <https://doi.org/10.1037/0022-3514.72.1.24>
- Heine, S. J., & Vohs, K. D. (2006). Heine Proulx Vohs 2006 – Meaning Maintenance Model.
- Hirschberger, G., Florian, V., Mikulincer, M., Goldenberg, J. L., & Pyszczynski, T. (2002). Gender differences in the willingness to engage in risky behavior: A terror management perspective. *Death Studies*, 26(2), 117–141. <https://doi.org/10.1080/074811802753455244>
- Inglehart, R., & Norris, P. (2017). Trump, Brexit, and the Rise of Populism: Economic Have-Nots and Cultural Backlash. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2818659>
- Jost, J. T., Glaser, J., Kruglanski, A. W., & Sulloway, F. J. (2003). Political Conservatism as Motivated Social Cognition. *Psychological Bulletin*, 129(3), 339–375. <https://doi.org/10.1037/0033-2909.129.3.339>
- Kane, R. (2013). *Ethics and the Quest for Wisdom* (Reprint ed). Cambridge University Press.
- Landau, M. J., Solomon, S., Greenberg, J., Cohen, F., Pyszczynski, T., Arndt, J., Miller, C. H., Ogilvie, D. M., & Cook, A. (2004). Deliver us from evil: The effects of mortality salience and reminders of 9/11 on support for President George W. Bush. *Personality and Social Psychology Bulletin*, 30(9), 1136–1150. <https://doi.org/10.1177/0146167204267988>
- May, R. (2007). Contributions of Existential Psychotherapy., In *Existence: A new dimension in psychiatry and psychology*. <https://doi.org/10.1037/11321-002>
- McGregor, H. A., Greenberg, J., Arndt, J., Lieberman, J. D., Solomon, S., Simon, L., & Pyszczynski, T. (1998). Terror Management and Aggression: Evidence That Mortality Salience Motivates Aggression Against Worldview-Threatening Others. *Journal of Personality and Social Psychology*, 74(3), 590–605. <https://doi.org/10.1037/0022-3514.74.3.590>
- Nelson, L. J., Moore, D. L., Olivetti, J., & Scott, T. (1997). General and personal mortality salience and nationalistic bias. *Personality and Social Psychology Bulletin*. <https://doi.org/10.1177/0146167297238008>
- Peters, H. J., Greenberg, J., Williams, J. M., & Schneider, N. R. (2005). Can Reminding Individuals of Their Mortality. *ReVision*, 111–116.
- Proulx, T., & Heine, S. J. (2008). The Case of the Transmogrifying Experimenter. *Psychological Science*, 19(12), 1294–1300. <https://doi.org/10.1111/j.1467-9280.2008.02238.x>

- Pyszczynski, T., Abdollahi, A., Solomon, S., Greenberg, J., Cohen, F., & Weise, D. (2006). Mortality salience, martyrdom, and military might: the great satan versus the axis of evil. *Personality and social psychology bulletin*, 32(4), 525–537. <https://doi.org/10.1177/0146167205282157>
- Pyszczynski, T., Greenberg, J., Solomon, S., & Maxfield, M. (2006). On the Unique Psychological Import of the Human Awareness of Mortality: Theme and Variations. *Psychological Inquiry*, 17(4), 328–356. <https://doi.org/10.1080/10478400701369542>
- Pyszczynski, T., & Kesebir, P. (2011). Anxiety buffer disruption theory: A terror management account of posttraumatic stress disorder. *Anxiety, Stress and Coping*, 24(1), 3–26. <https://doi.org/10.1080/10615806.2010.517524>
- Rosenberg, M. (1965). Rosenberg self-esteem scale (RSE). *Measures package*. <https://doi.org/10.1177/0145445507302037>
- Solomon, S., Greenberg, J., Solomon, S., & Greenberg, J. (2019). Existential Meaning and Terror Management. *Oxford Research Encyclopedia of Psychology*, (September), 1–23. <https://doi.org/10.1093/acrefore/9780190236557.013.241>
- Sullivan, D., Kosloff, S., & Greenberg, J. (2013). A terror management perspective on the creation and defense of meaning, In *The experience of meaning in life: Classical perspectives, emerging themes, and controversies*. https://doi.org/10.1007/978-94-007-6527-6{_}2
- Taubman Ben-Ari, O., Florian, V., & Mikulincer, M. (1999). The impact of mortality salience on reckless driving: A test of terror management mechanisms. *Journal of Personality and Social Psychology*, 76(1), 35–45. <https://doi.org/10.1037/0022-3514.76.1.35>
- Tillich, P. (1952). *The Courage to Be*. New Haven: Yale University Press.
- Tillich, P. (1964). *Theology of Culture* (R. C. Kimball, Ed.; 1st ed.). Oxford University Press, U.S.A.
- Vail, K. E., Arndt, J., Motyl, M., & Pyszczynski, T. (2009). Compassionate Values and Presidential Politics: Mortality Salience, Compassionate Values, and Support for Barack Obama and John McCain in the 2008 Presidential Election. *Analyses of Social Issues and Public Policy*, 9(1), 255–268. <https://doi.org/10.1111/j.1530-2415.2009.01190.x>
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*. <https://doi.org/10.1037//0022-3514.54.6.1063>
- Wisman, A., & Goldenberg, J. L. (2005). From the Grave to the Cradle : Evidence That Mortality Salience Engenders a Desire for Offspring, 89(1), 46–61. <https://doi.org/10.1037/0022-3514.89.1.46>

- Wisman, A., & Heflick, N. A. (2016). Hopelessly mortal: The role of mortality salience, immortality and trait self-esteem in personal hope. *Cognition and Emotion*, 30(5), 868–889. <https://doi.org/10.1080/02699931.2015.1031643>
- Wong, P. T., & Tomer, A. (2011). Beyond terror and denial: The positive psychology of death acceptance. *Death Studies*, 35(2), 99–106. <https://doi.org/10.1080/07481187.2011.535377>



My appendix

A.1 Bogus Scientific Articles

- Meaningful Mortality

People who were considered dead, but were then revived and regained consciousness, often report detailed descriptions of an afterlife. In the recent years, much development has been made in the scientific investigation of the Near-Death Experience (NDE). Studies conducted by Dr. Robert Smith, researcher at the Harvard Medical School and by Dr. Charles Miller from the University of Oxford, strongly indicate that those experiences are hallucinations, and that there would not be any sort of life after death, reinforcing the idea of a finite existence. In this study, the NDE reports made by the patients can be explained by a rush of endorphins in their brain. Although this type of experience is a hallucination provided by some substances in the organism, the researchers point out that the patients reacted in a positive way when informed about the results of the study. One of the subjects mentioned that if there is no life after death, he could not postpone his actions forever and that he would have to take the responsibility of utilizing his lifetime to the utmost, not letting the opportunities pass by unused. The researchers also indicate that the patients were able to see, in their mortality, an urge to take responsible acts in

order to pursue a meaningful existence. (Scientific American, January, 2016)

- Meaningless Immortality

People who were considered dead, but were then revived and regained consciousness, often report detailed descriptions of an afterlife. In recent years, much development has been made in the scientific investigation of the Near-Death Experience (NDE). Studies conducted by Dr. Robert Smith, researcher at the Harvard Medical School and by Dr. Charles Miller from the University of Oxford, strongly indicate that those experiences are real and that there would be some sort of life after death, contradicting the idea of a finite existence. In this study, the NDE reports made by the patients, such as a feeling of moving through a tunnel of bright light, toward a greater source of light, and some form of contact with previously departed loved ones can be explained by a rush of endorphins in the patient's brain. Although this type of blissful experience is a hallucination provided by some substances in the organism, in the advanced stage of the NDE there is indeed evidence that strongly suggests a conscious life after death. In this phase, in which no substance in the brain could be detected as the cause of it, the afterlife state appears to be of a very dull awareness. Most subjects, who had a real NDE of this advanced stage, although absolutely convinced that death is not the end of existence, appear to find this experience frighteningly boring and devoid of meaning. (Scientific American, January, 2016)

- Dental Pain

The fear of dentists is common among people of all ages, at least this is what the research in this area has shown. In recent years, much development has been made in the scientific investigation of what might cause this anxiety produced by dentists. Studies conducted by Dr. Robert Smith, researcher at the Harvard Medical School and by Dr. Charles Miller from the University of Oxford, strongly indicate that this fear is much more common than previously anticipated and it is largely responsible for people's avoidance of a dentist visit. In this study, reports made by the patients include dental pain and the possibility of feeling pain after the visit as the main cause of the distress associated with the idea of going to the dentist. The researchers also point out that other elements associated with pain, like the sound of a dentist's office, particularly the sound of the drill, were also important factors of the distress that the idea of a dentist visit may cause. (Scientific American, January, 2016)