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PSYCHOLOGICAL STRATEGIES OF DEFENCE FROM THE FEAR OF DEATH

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STRATEGIJE PSIHOLOŠKE ODBRANE OD STRAHA OD SMRTI

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Psychological strategies of defence from the fear of death

Abstract

In the present study, we set out to explore the psychological strategies engaged to defend oneself from the basic existential insight: the one of the inevitable personal mortality. We wished to examine how young individuals reacted to reminders of mortality and whether these reactions were also related to the socio-cultural context and the important groups they identify with. For these goals, we applied the framework of Terror management theory proposing that people achieve protection from a potentially paralysing fear of death through investing in valued worldviews and maintaining a positive image of themselves as part of these worldviews. Individuals who believe that they are an important part of a meaningful universe can achieve a symbolic transcendence of their inherently mortal nature.

We investigated the psychological strategies of defence in a series of five experiments, with a total of 465 participants. After subtle reminders of personal mortality, we investigated whether participants would engage in intensified efforts to enhance and protect the collective self-image stemming from identification with an important group (i.e. the ethnic group; Experiment II) or the individual self-image (Experiment III and IV). We also explored whether the preference for individual vs. collective enhancement would depend on personal value orientations, i.e. the level of individualism/ collectivism of the participants (Experiment V). To provide a more stringent test of the basic tenets of the theory, we compared the effects of mortality reminders to reminders of other existential concerns (i.e. life uncertainty), as well as more everyday concerns of the participants (i.e. exam anxiety). We also investigated the cognitive and affective mediating processes.

The findings revealed that reminders of personal mortality lead to an enhancement of the collective self expressed through more positive perceptions of the ethnic group and a strengthened identification with this group. These effects were shown not to be a result of heightened affect and were exclusive to activation of concerns about mortality (compared to other concerns). Our studies did not offer a convincing support for the general role of individual self-enhancement in alleviating the fear of death. However, we found that the extent to which a person embraces individualism/ collectivism affect

the preference for the defensive strategies to mortality reminders. While participants low in collectivism responded to these reminders with an enhancement of the individual self, more collectivistic participants responded by lowering both individual and collective enhancement.

The findings offered a mixed support for the fundamental tenets of Terror management theory, most convincingly the terror management function of social identifications and collective self-enhancement. They highlight the relevance of the socio-cultural context in studying death-anxiety buffers, as well as the value orientations embraced by individuals within these contexts. As the study revealed some unexpected effects, the findings also suggest the importance of clarifying additional situational moderators affecting the operation of the proposed anxiety-buffer. Findings are discussed from the perspective of the existent research in the local context as well as their implications for the study of inter-group relations and more general issues of mental health and psychological well-being.

Strategije psihološke odbrane od straha od smrti
Apstrakt

U aktuelnoj studiji želeli smo da istražimo strategije psihološke odbrane kojima se ljudi služe prilikom suočavanja sa osnovnim egzistencijalnim uvidom: o neizbežnosti lične smrtnosti. Želeli smo da ispitamo kako mlade osobe reaguju na podsetnike na vlastitu smrtnost i da li su ove reakcije povezane sa socio-kulturnim kontekstom i značajnim grupama sa kojima se identifikuju. U ovom cilju, sagledali smo istraživački problem u okvirima teorije upravljanja strahom, koja pretpostavlja da ljudi postižu zaštitu od potencijalno parališućeg straha od smrti kroz ulaganje u vrednovane poglede na svet i očuvanje pozitivne slike o sebi samima, kao delu tih svetova. Osoba koja veruje da je značajan deo smislenog univerzuma, time postiže simboličku transcendenciju vlastite smrtne prirode.

Istražili smo strategije psihološke odbrane od straha od smrti kroz niz od pet eksperimentalnih studija, sa ukupno 465 učesnika. Nakon suptilnih podsetnika na ličnu smrtnost, istražili smo da li će ispitanici intenzivirati tendencije da zaštite i osnaže pozitivnu sliku o sebi koja potiče od identifikacije sa značajnom grupom (tj. etničkom grupom, Ogled II) ili individualnu sliku o sebi (Ogledi III i IV). Takođe smo istražili da li preferencija za individualno i kolektivno osnaživanje zavisi od ličnih vrednosnih orijentacija, preciznije nivoa individualizma i kolektivizma ispitanika (Ogled V). Kako bismo obezbedili stroži test osnovnih pretpostavki teorije, uporedili smo efekte podsetnika na smrt sa drugim podsetnicima na bliske egzistencijalne teme (tj. neizvesnost života), kao i svakodnevnije brige sa kojima se ispitanici suočavaju (tj. ispitna anksioznost). Takođe smo istražili kognitivne i afektivne posredujuće reakcije.

Rezultati pokazuju da podsetnici na ličnu smrtnost vode osnaživanju kolektivne slike o sebi, koja se izrazila kroz naglašavanje pozitivnih percepcija etničke grupe i osnaživanje identifikacije sa ovom grupom. Pokazno je da efekti ne mogu biti objašnjeni pojačanim afektom i da su, u poređenju sa drugim izvorima briga, jednoznačno vezani za aktivaciju misli o smrti. Naše studije nisu obezbedile ubedljive argumente u prilog opšte uloge individualnog samoosnaživanja u ublažavanju straha od smrti. Međutim, utvrdili smo da mera prihvatanja individualizma odnosno kolektivizma kao vrednosnih

orijentacija utiče na preferencije za odbrambene strategije. Dok su ispitanici slabije kolektivističke orijentacije odgovorili na podsetnike na smrtnost osnaživanjem individualne slike o sebi, ispitanici koji su u većoj meri kolektivistički nastrojeni su odgovorili slabljenjem i individualnog i kolektivnog samo-osnaživanja.

Ukupno, rezultati istraživanja nude delimičnu potporu osnovnim postavkama teorije upravljanja strahom, i to prvenstveno odbrambenoj funkciji socijalnih identifikacija i kolektivnog samoosnaživanja. Rezultati takođe ukazuju na značaj socio-kulturnog konteksta u proučavanju sistema odbrane od straha od smrti, kao i ličnih vrednosnih orijentacija u okviru ovog konteksta. Kako je studija rezultovala i neočekivanim nalazima, važno je dalje ispitivati situacione moderatore, koji bi mogli da oblikuju delovanje predloženog sistema zaštite.

Nalaze ovog istraživanja doveli smo u vezu sa prethodnim istraživanjima međugrupnih odnosa u lokalnom kontekstu. Uz to, ukazali smo na njihove implikacije za opšta pitanja individualnog i grupnog mentalnog zdravlja i psihološkog blagostanja.

Ključne reči: strah od smrti, teorija upravljanja strahom, individualno samo-osnaživanje, kolektivno samo-osnaživanje, etnički identitet, kros-kulturna istraživanja

Naučna oblast: Psihologija
Uža naučna oblast: Socijalna psihologija

Table of Contents

Introduction

I. Research topic

Death awareness as a basic social motive

> *"How can I keep silent? How can I stay quiet?*
> *My friend, whom I loved, has turned to clay,*
> *my friend Enkidu, whom I loved has turned to clay.*
> *Shall I not be like him, and also lie down,*
> *never to rise again, through all eternity?"*
>
> (The Epic of Gilgamesh)

The finiteness of an individual existence can be considered one of the fundamental facts that shape an individual's psychological world. From the beginnings of literacy and first literary works, such as The Epic of Gilgamesh, we trace a tradition of dwelling on the topics of death and mortality, as well as the human desire to attain immortality. The issues of facing the awareness of mortality and lack of meaning were particularly contemplated as crucial determinants of the human psychological condition in the framework of existentialist literature and philosophy (e.g. Kami, 1961; Kirkegaard, 1849/1974, 1843/2002; Sartre, 1943/1983, 1938/2009). Existentialism and its perspective on the human condition was an important inspiration for psychologists, mainly in the areas of psychotherapy and counseling (e.g. Frankl, 1977/2007; Frankl 1967/2009; Yalom, 1980).

However, the awareness of death and its influence on human psychological functioning remained a topic constrained to specific domains of psychological research, without broader thematizing. A brief look at the Psych Articles database of the American Psychological Association provides some insight into the place given to these fundamental existential topics within the almost century-long tradition of psychological research. A search with "death anxiety" as keywords yielded 206 hits, and "fear of death" yielded 136 results. As a comparison, search for "test anxiety" yielded ten times as many papers (2 147), while papers containing the word "stress" amounted to 9396

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hits. These results illustrate what we believe is a striking discrepancy between the importance of an aspect of psychological functioning and its treatment within the psychological research. What is more, almost all of the studies dealing with these topics are related to specific issues of pathology or extraordinary life conditions (i.e. suffering a trauma or being terminally ill). Does awareness of death play a role in the everyday life of individuals? If it does, in which way could it affect our lives?

Investigating existentialist issues[1] with psychological experimentation has for a long time been considered a paradoxical task since the dominant behavioural and cognitive paradigms did not offer a methodological framework to tackle these fundamental issues. It is only in the last decades that these issues have been brought to the attention of experimental social psychologists. One group of researchers sought to bring together the stringent experimental methodology with the fundamental issues of human existence (Greenberg, Koole, & Pyszczynski, 2004). They set out to investigate the personal awareness of mortality, as well as the not easily recognizable manners in which this awareness can shape an individual's psychological experience and behaviour. One of the core issues is how the awareness of mortality and the resulting worries and anxieties can affect an individual's self-perception and whether they can be one of the sources of the human need to protect and enhance a positive self-image.

Terror management theory

The key theoretical model explaining the role of mortality awareness in various areas of human social behaviour is Terror management theory (TMT; Greenberg, Pyszczynski, & Solomon, 1986; Pyszczynski, Greenberg, & Solomon, 1997; Solomon, Greenberg, &

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[1] In the psychological literature the use of terminology emphasizing direct relations with existentialism is common, e.g. *existential concerns, anxiety, dilemma*, etc. is common. The research paradigm this study is based on also makes direct references to existentialism. We will use a number of terms, as existential anxiety or concern, to refer to broader anxieties that stem from the human condition. However, it should be noted that this meaning does not closely follow the one given to them within the existential philosophy and literature. When these concepts are translated into measurable variables, their meaning is further confined and divergent from their original use.

Pyszczynski, 2004; Pyszczynski, Solomon, & Greenberg, 2015). In the reviews of terror management research, the authors explain their motivation for developing the theory. As young scholars, Jeff Greenberg, Sheldon Solomon and Tom Pyszczynski were disappointed with the state of affairs in social-psychological research in the 1980s, which they thought was overly preoccupied with "minute" analyses of socio-cognitive processes (Solomon et al., 2004; Greenberg, 2012). They thought the most important issue of what drove people to behave or think or feel the way they did was completely absent from the social-psychological thinking of the day. Specifically, there were two questions they were especially interested in answering: a. the issue of why people needed self-esteem and would go to great lengths to secure and enhance it (Greenberg, Pyszczynski, & Solomon, 1986) and b. the issue of why people would cling to their worldviews and beliefs so firmly that they would be prepared to go to war and even exterminate the ones who believed differently (Greenberg et al., 1990).

Lacking the theoretical perspectives that could explain these tendencies within social psychology, they turned to other disciplines and sources for inspiration. They were primarily inspired by the ideas of a cultural anthropologist, Ernest Becker (1973), as well as a number of other theorists from various disciplines. In his book *Denial of death*, as well as in his other work, Becker (1973) considered to role of fear of death in various human endeavours. This framework struck the authors as applicable to the questions they wanted to answer, and they attempted to translate the ideas into a form appropriate for empirical research. The first time the theory was presented was at the Society for Experimental Social Psychology (SESP) meeting in 1984 (Solomon et al., 2004), and afterwards in a paper (Greenberg et al., 1986), where they outlined the theoretical framework for investigating the fundamental motivation of self-esteem strivings.

The two first empirical papers that provided basic support for the tenets of, what would be called, terror management theory, ensued soon afterwards (Greenberg et al., 1990; Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989). This marked the beginning of the now thirty-year tradition of intensive empirical research within the framework of terror management theory. The theory itself has been further refined based on the empirical insights (Pyszczynski, Greenberg, & Solomon, 1999; Pyszczynski et al., 2015), and the number of research questions that have been

investigated within its framework is on a constant rise (e.g. Goldenberg & Arndt, 2008; Pyszczynski, 2004; Pyszczynski, Rothschild, & Abdollahi, 2008; Strachan et al., 2007). In the following, we will present the basic tenets of the theory and consider its contributions and its potential relevance for the local context in Serbia.

The basic tenets of terror management theory

The starting point of consideration is what makes the human condition unique, in comparison with all other living creatures (Pyszczynski et al., 2007; Solomon et al., 2004). With the evolution of highly complex cognitive abilities, humans have gained many evolutionary advantages (e.g. the ability to plan ahead, the ability to predict behaviour of others). However, the highly developed human cognitive abilities and self-awareness also have some drawbacks, most important of which is the comprehension that their own death is inevitable (see also Leary, 2004). In contrast to all other animals, the humans are thus capable of comprehending that the future entails their inescapable death, and also that they could die at any time and for a number of different reasons (Solomon et al., 2004; Greenberg, 2012). This basic psychological conflict that humans experience between the desire to continue living and the awareness of their own mortality, results in an intense feeling of fear, i.e. terror.

This „...emotional manifestation of the self-preservation instinct in an animal intelligent enough to know they it will someday die" (Greenberg, Simon, Pyszczynski, Solomon, & Chatel, 1992a, p. 212; see also Solomon et al., 2004), is a specific kind of anxiety that it considered particularly unbearable. While other animals fear specific objects or situations that could endanger them, humans fear something that cannot be completely defined or concretized. This intense feeling could have paralyzing effects on humans in if experienced in full strength. The authors argue that this fear would have become non-adaptive since it would disrupt goal-directed behavior. So, how come we do not spend all of our time pondering about our inevitable demise?

The TMT authors argue that alleviation of this potentially paralyzing fear became one of the forces in human evolution, resulting in formation of various cultural protection systems (Solomon, Greenberg, Schimel, Arndt, & Pyszczynski, 2004). According to TMT, people achieve a symbolic protection from the awareness of death by investing

their efforts into attaining culturally valued goals that provide them with a positive self-image.

The TMT model thus assumes that the symbolic anxiety buffer is organized as a two component system of cultural origin. Its first component is a worldview that is constituted within a socio-cultural setting, consisting of a set of conceptions and beliefs about the nature of reality (Greenberg, 2012; Solomon et al., 2004a; Solomon et al., 2004b). These worldviews provide one with a sense of stability and security, through affording a set of concepts to understand the reality and cope with it, as well as a set of standards that regulate an individual's behavior. They also typically include a certain promise of transcending personal mortality, either in a literal or symbolic sense.

Transcending mortality in a literal sense is the focal point of many different systems of religious belief, through teaching about some form of an afterlife. Different religions promise that death is not the final ending of one's being, but a transition to another form of life. In Christianity, the eternal bliss of paradise is promised to those who believe and who deserve it by living their lives following the Biblical teaching. In other religions, there is also a promise of transcendence in various forms, for instance by being reborn in a different form, reaching a state of purely spiritual being or becoming one with the universe.

There are also various means of symbolic transcendence of mortality. They can range from having children to exceptional sports performances, creating works of art or making scientific discoveries. People who succeed in achieving some of these are remembered within the culture and this promise of symbolic immortality has, as is presumed, a considerable potential for relieving fear of death.

To the extent that people succeed in meeting the standards set by their cultural worldviews, they can obtain a sense of personal value and a justly deserved place in the symbolic reality through which they transcend their physical and mortal selves. This explains why people are prepared to go to great lengths to achieve and protect a positive image of themselves. High self-esteem is not merely a pleasant state to be longed for, but a need deeply rooted in the basic anxieties inherent in the human condition (Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004).

There are a myriad of symbolic means of death-transcendence, which makes even drafting a list an almost impossible task. We could instead consider the very

proliferation of various forms of human endeavor that take up imagination and effort as arenas for challenging the physical, i.e. mortal self. In a literal sense, take for instance the sports and the infinite range of its disciplines and sub-disciplines in which athletes compete for the title of world champion. On a gloomier side, self-transcending endeavors can even incite violence against other people, who are perceived as threatening to the validity of one's worldview (Pyszczynski, 2004). The behavior of a suicide bomber that strikes as utterly incomprehensible at first sight can be meaningfully explained if we look at it as a sacrifice to achieve a valued place in the afterlife.

Belonging to a valued group also holds a promise of individual transcendence through being a part of something larger and more enduring. For instance, local football club supporters in Belgrade celebrate their deceased companions by painting a sort of mural-obituaries on building walls in the city centre and chanting their names at football matches. In this way they continue to live as a part of their community.

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In sum, people achieve equanimity in facing the prospect of death by believing they are a valuable part of a meaningful reality (Solomon et al., 2004; Pyszczynski et al., 2015). In a desire to transcend their physical bodies, they create various symbolical realities and themselves as inhabitants of these realities. Therefore, they are extremely motivated to believe in their images of reality and their place within it. Since there is a vast number of worldviews one can imagine, and none of them could be proven to be the right one, it becomes essential that one's worldview is shared and supported by other people. This need for consensual validation is what leads people to be antagonistic and even hostile to those who do not embrace or challenge their worldviews (Pyszczynski, 2004).

In the following, we will discuss the empirical support for these basic propositions, as well as the theoretical refinements they brought about.

Why terror management theory?

Before detailing the specificities of terror management research and presenting the current studies, we will offer some arguments for the choice of the broad research topic,

as well as the specific theoretical frame. We will present two types of arguments: theoretical and methodological.

    a.   Theoretical contributions of terror management theory

First, we have already put forward the argument that awareness of death is an understudied topic in psychological research in general, particularly in the domains related to social psychology. As a field dominated by the cognitivist paradigm from the 1970s and 1980s, its focus shifted away from the study of human needs and motivations (Graumann, 1996; Pyszczynski et al., 2004). Terror management theorists urged for the establishment of the existential experimental psychology approach (Pyszczynski et al., 2004), which marked one of the significant shifts away from a strictly cognitivist direction. As the authors point out, they believe that existentialist topics are of true and vital importance in human life and should therefore not be confined to be issues of philosophical interest alone (Koole et al., 2004, 2006). This point has previously been made by authors interested in death anxiety and its impacts on everyday life (e.g. Feifel, 1990; Yalom, 1980).

Moreover, terror management theory is one of the rare attempts to offer an overarching framework for understanding a host of different socio-psychological phenomena (Greenberg, Koole, & Pyszczynski, 2004; Koole, Greenberg, & Pyszczynski, 2006). Within the field of social psychology, there is a wide variety of smaller scale theoretical and methodological approaches that are focused on explaining some of the aspects of human behaviour or other psychological processes. For instance, Graumann (1996) designated the recent developments in social psychology by a process of "proliferation and diminution of social-psychological theories" (p.17). This reflects a more general thematic and methodological division of psychological research, with various research streams that rarely cross the dividing lines and systematically compare themselves to one another (see also Bruner, 1990 for a wider psychological perspective). We believe that terror management theory makes a significant contribution to socio-psychological research and theorizing by offering a unified motivational perspective. Despite the criticism that its scope is too broad and that it fails to provide a universally valid account of human functioning (e.g. Martin & van den Bos, 2014) we value the attempt to offer a common perspective and to look beyond a broad range of highly specific motives and phenomena in a search for common patterns.

If we acknowledge that anxiety of death can lead humans to various detrimental outcomes, both at personal and societal levels, it would be of utmost importance to attempt to bring this fundamental motivation and its outcomes to public consciousness. Only then can we reflect on these and open up new and more constructive venues for dealing with it. Defensive reactions in confronting awareness of death entail preference for the familiar, expected and simple, which in turn hinders the possibilities of growth, change, and improvement (Pyszczynski, 2004). It is interesting to note that this precise conclusion was made in the aftermath of the First World War by one of the seminal thinkers in psychology (Freud, 1918).

Another particular appeal of the terror management approach lies in the fact that it is not focused solely on the individual and the personal psychological resources used in confronting fundamental existential concerns. On the contrary, by explicitly recognizing that the anxiety buffer that is needed for these purposes is of socio-cultural origin, it affords a true socio-psychological perspective to investigating intricate relations between the individual, social groups and the specific cultural and historical settings.

b. Methodological contributions of terror management theory

Terror management theory subscribes to an innovative methodological approach to studying the effects of death awareness on human functioning, namely the rigorous experimental method. A skeptic would perhaps doubt the validity of this approach for studying the topic at hand, and we believe it is worthwhile analyzing the arguments for such a choice. Within the framework of the recently established experimental existential psychology (XXP, Greenberg et al., 2004) several arguments have been offered in favour of this methodological approach in comparison with the most obvious alternative method, i.e. introspection. What are the insights this approach can provide?

First of all, an experimental approach that aims to elucidate the human experience of death awareness would be better suited to unraveling some common patterns and processes than a study of personal experiences. The usefulness of the experimental approach is thus conditional upon the possibility of detecting meaningful patterns. If none can be found, that would suggest that dealing with the awareness of death is highly idiosyncratic and personal. If on the other hand, common processes can be observed and meaningfully related to the social and cultural contexts, this speaks to the support of the methodology.

Second, the starting point of the theory is that death-awareness causes a potential for overwhelming anxiety and that people are consequently armoured with a whole set of defence mechanisms to prevent this from happening. If this is true, a strictly phenomenological account will suffer from the operation of these defensive mechanisms that would render people blind for much of the psychological processes they engage in. Experimentation can, on the other hand, help us cast some light on the not fully conscious processes and counterintuitive effects, that people would have difficulty recognizing and, all the more so, explaining. Such approach is clearly warranted to explain such paradoxical behaviours as being prepared to sacrifice one's life for a higher cause or being, at a more mundane level to risk one's health to project a valued social image (i.e. through being a reckless driver or going to a tanning salon).

The insights from an experimental perspective could thus help move forward from the individual and personal perspectives to investigating the relation between the individual and the society in shaping the buffers against the awareness of death. We believe that this perspective has merit and deserves empirical testing.

It should be noted that terror management theory is not merely an interesting thought experiment since its basic tenets have been subjected to an extensive empirical scrutiny. A meta-analysis of 277 studies that tested the basic tenets of terror management theory supports its validity (Burke, Martens, & Faucher, 2010). Thinking about death led to significant and moderately large effects on a series of investigated dependent variables indicative of worldview defence and self-esteem striving ($r = .35$). Additionally, the analysis demonstrated somewhat more pronounced effects in experiments with a longer delay period between manipulation and measurement of dependent variables, suggesting that the effects could be more lasting than previously thought. We will review the most relevant findings in more detail in the following chapter.

Why Serbia makes an interesting case study in terror management?

It would make sense to assume that the existential concerns are relevant (if not even more salient) in Serbia and that the people living in this part of the world face the same basic challenge and have the same basic psychological and cultural resources at their disposal. What then makes this particular context attractive for investigating terror management? Serbia, as a former Yugoslav republic and a part of the region of Western Balkans, is a society marked by a burden of recent inter-ethnic conflict and division, as

well as facing the current challenges of political and economic transition (Zundhausen, 2008; Žanin-Čalić, 2013).

The recent history of the region makes it an exemplary context for fostering of existential concerns. During the Yugoslav wars in the former half of the 90s there were no armed conflicts on Serbian territory, but there was a constant fear that wars would spread, supported by massive waves of refugees coming from the war-torn areas and the compulsory draft for the army. The decade was furthermore marked by general insecurity, civil unrest and protest against the government, as well as economic crisis, hyperinflation and impoverishment and international isolation. This period of tension and unrest culminated in 1999, with NATO air strikes, following the conflict in Kosovo. The conflict with Kosovo is still being negotiated, since Kosovo declared one-sided independence in 2007.

We will discuss several issues of relevance for the terror management perspective: the chronic experience of stress and anxiety, disruption and transformation of cultural anxiety buffers and the heightened defensive social reactions in the region.

a. The psychological consequences of chronic stressors and anxieties

The whole region has undergone a dramatic series of events in the recent decades, and the psychological consequences of these events have not been systematically studied. Apart from the most direct impacts of the events on social attitudes and the quality of inter-group relations, the more deep-seated and less visible psychological effects remain for the most part unknown. Traumas and chronic stressors must have significantly raised the levels of anxiety in individuals, as well as led to various dissociative reactions. For instance, a study conducted in the aftermath of the 1999 air strikes revealed that 60% of surveyed children and adolescents suffered from medium or severe PTSD symptoms, mainly avoidance symptoms (Zotović, 2005). The same author found that the level of symptomatology that emerged immediately after the strikes was unchanged after a 14-month delay. Comparable levels of post-traumatic stress were measured among students (Gavrilovic, Lecic-Tosevski, Knezevic, & Priebe, 2002). Another study investigated the reactions of adults during the air-strikes and found that over 50% of participants demonstrated symptoms as distress, tiredness, fear and anxiety, lack of concentration and decreased work ability, among others (Samardžić & Špirić, 2005).

Additionally, a survey immediately following the air-strikes, revealed that one half of citizens stated that *fear* and *anxiety* are the words that best describe their moods and feelings (Puzigaća, 1999). A reversal of mood patterns was observed in comparison to data from 1991 when the most frequent emotions experienced were hope, optimism and curiosity and only 23% of citizens mentioned fear and anxiety. In 1999, citizens feared disease (84%), civil war (80%), NATO intervention (82%), but also a fall of living standard (92%) and even famine (70%).

Several studies documented even more long-term effects of the 1999 bombing. A study conducted five years after the events compared 12-year olds from cities that were intensely bombed with a control group. These children demonstrated a larger number of dysfunctional cognitive schemes that are hypothesized to be conducive to the development of psychological disorders in later life. For instance, children showed maladaptive schemes of grandiosity, vulnerability, inhibition, distrust and loyalty, which were interpreted as a consequence of the traumatic experience from the age of seven (Končar, Zotović, & Hautekèete, 2006).

Some epidemiological studies traced a tendency of heightened prevalence of depressive, stress-related and psychosomatic disorders, as well as substance abuse disorders, in the period from 1997 to 2007 in Serbia (Grozdanov et al., 2008). These tendencies cannot be attributed solely to the experience of air-strikes, but to the cumulative impact of different traumatic or stressful events in the period.

These findings suggest that exposure to chronic stressors during the last decades in Serbia might have impacted both immediate and long-term psychological well-being and mental health. If we look at the basic tenets of terror management theory, the recent history could be said to have caused a recursive or permanent mortality salience in people of the region. What consequences could this have had for the operation of cultural anxiety buffers against the fear of death?

b. The disruption of the cultural anxiety buffers

One important issue in the context of terror management is the disruption of cultural value systems and worldviews that were severely challenged by the socio-political upheavals. As suggested by TMT, humans are in a dire need of worldviews that offer a clear picture of what the world is like, where their position in the world is and how they can transcend their physical and mortal selves. War, civil unrest, severe economic crisis

and isolation posed serious threats to the worldviews of the people in the region. It is the very breakdown of these systems that could have accounted for the overall rise of anxiety and dissociative phenomena.

This background is important to take into account when studying the current operation of the anxiety buffers. It will be interesting to explore whether the mechanisms that are proven to operate in other, more stable societies would prove applicable to this context.

What is more, the present situation in Serbia is also marked by heightened insecurity and a host of socio-political instabilities and crises. Sociological and social-psychological research have given insight into changes in value systems and dominant value orientations, starting from the late '80s and early '90s and proceeding into the 2000s.

Comparisons of dominant values, value orientation and lifestyles of young adolescents revealed that significant changes could be observed in most of the domains between 1988 and 1994, a period that was marked by the transformation of the dominant socialist system (Kuzmanović, Popadić, & Havelka, 1995). Some of the tendencies included heightened religiousness, in stark contrast to the atheism prevalent in the previous decades, as well as a lessened interest in pro-social activities and activism and increasing endorsement of utilitarian and hedonistic values.

Sociological studies also stressed that the society in Serbia is undergoing a transition of value systems, that is marked by several value conflicts: collectivism vs. individualism, work vs. criminality, nationalism vs. civic identity, liberty vs. conformism, orientation to private vs. public participation (Golubović, 2003; Golubović, Spasić, & Pavićević, 2003; Nikolić & Mihajlović, 2004). In a period of social change and changing norms, discrepancies can arise at various levels (Lazić & Cvejić, 2007): individuals sometimes keep the frames of the old value systems, causing a normative- value dualism. Holding on to the old normative systems that are in discrepancy with the novel circumstances also creates dissonance at the group level.

One of the conspicuous discrepancies at the level of value orientations is that between individualism and collectivism. Collectivist values had been characteristic of the former communist political system, including the ideology of equality, but also a pervasive trait of traditionalism, which had its roots in the pre-communist period. From the early '90s, this orientation was further transformed by adding the burgeoning nationalism to the

picture. On the other hand, individualist values stemmed from modernization processes within the communist system itself, its constant openness to the West, as well as the most recent transformations in the direction of capitalism and liberalism. Lazić and Cvejić (2007) demonstrated in their research that, as late as in the latter part of the 2000s, the elements from opposing value systems existed side by side and in conflicting constellations.

The existence of conflicting value orientations, as well as collisions within the worldviews between values and norms, could be relevant for the functioning of the cultural anxiety buffer in at least two ways. (a) The lack of stable buffering systems could further aggravate the levels of anxiety. (b) The instabilities could be related to more individual variation in the personal versions of the anxiety buffer, since each individual has to decide for him or herself how to ensure an effective shield against fundamental anxiety.

c. Strengthening of defensive social strategies

On the other hand, a possible consequence of the permanent existential threat in the region is strengthening and entrenchment of some defensive strategies. Along these lines, research suggests that the recent decades in the region have been characterized by an upsurge in two important social identifications – religious identity (Blagojević, 2013; Dušanić, 2007; Markešić, 2010) and ethnic identity[2] (Golubović, Kuzmanović, & Vasović, 1995; Milošević-Đorđević, 2005; Turjačanin, 2004; 2007; Turjačanin & Majstorović, 2013; Vasović, 2000). These identifications were closely related to the inter-group conflicts in the region - they both served to legitimize the conflicts and were themselves strengthened by them. There is reason to believe that these identifications could be of particular importance for the socio-cultural anxiety-buffer in the region.

The ethno-national identification suffered a significant decline in the late 90s in Serbia (Vasović, 2000), interpreted as a reaction to the sharp devaluation of this identity caused by current socio-political events. However, more recent research suggests its

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[2] In domestic literature the term national identity refers in actuality to the ethnic belonging and not identification as the citizen of the state of Serbia. To avoid possible misunderstandings, we will use the term ethnic identity to refer to the ethnic Serbian group and the term national identity for the citizenship identity.

reaffirmation and raising trends for both religious and ethnic identifications, corresponding with the issues raised by dealing with the past (Golubović, 2003). Several studies conducted during the 2000s (Milošević-Đorđević, 2005; 2007; Stjepanović Zaharijevski, 2008) indicate that both ethnic and religious identification hold a prominent position among social identifications. In recent studies among the youth (e.g. Kalaba, 2013) identification with the ethnic group was the third most important identification (33%), after family (50%) and profession (39%). Another study confirmed that ethnic and religious identifications remain generally stronger than alternative identifications (local, Balkan, European) among the youth in Serbia, as well as other countries of the region (Regional research promotion programme, 2015).

There is further evidence for the particular role of ethno-national identification. Ethnic identity is dominantly viewed as a primordial identity (Milošević-Đorđević, 2007; Turjačanin & Majstorović, 2013), i.e. an inherited and unchangeable form of identity. Ties with the ethnic group are perceived as deeply entrenched and based on common origin, language, and cultural heritage. Religious and ethnic identities are perceived as deeply intertwined, suggesting that religion offers an extension of ethnic identity and its worldview and value-based justification (Vasić, 2013). Social distance toward other groups, particularly those sharing a history of conflict with the ethnic or religious in-group is rather high, and the intergroup feelings are neutral or cold (Kalaba, 2013; Kandido-Jakšić, 2008). There is a particular dislike for the idea of crossing the inter-ethnic and religious boundaries in marriage and letting the out-group become the part of one's family (Puhalo, 2009, 2013; Perišić, 2012). What is more, some authors suggest that there has been a structural change in ethnocentrism, in that it is no longer confined to less well educated and lower socio-economic strata, but became widely accepted among the youth (Popadić, 2004).

However, the ethno-national identification has also been critically scrutinized for its role in the conflicts and maintaining of the ethnic and religious divisions. The negative evaluations coming from the outside might have given rise to ambivalences within the identity. Some studies do suggest that there is ambivalence, at least what concerns more open expressions of ethnocentrism. For instance, when asked about the superiority of the own nation, students appear to be divided, i.e. 40% of students believe that the nation's past should be considered a sanctity while 38% believe that national

14

identification is just a burden (Kalaba, 2013). On the other hand, we can speculate that negative interpretations of the identity might have contributed to a formation of a reactive identity (Sen, 2006). This entails that an outside threat and challenge to the validity of one's identity leads to defence and restoration of the threatened sense of a collective identity.

This short review suggests that ethnic identity could be an important element of the cultural anxiety buffer in the context of the Western Balkans. However, the potential terror management function of this identification could have been compromised due to negative evaluations attached to it through the recent historical events. In the present study, we will investigate the general operation of the buffers against death anxiety and in particular the role of ethno-national identity within these buffering systems.

The present study: an initial overview

Given the previous argumentation, the present study will test the applicability of the basic tenets of terror management theory in Serbia. Since this is, to our knowledge, the first attempt to systematically investigate terror management mechanisms in this context, we opted to test the most fundamental propositions of the model rather than its subtle refinements. The issue of replicability of psychological research particularly affects the social-psychological experimentation (Open Science Collaboration, 2015) and has proven to be an issue in the local context (e.g. Branković & Žeželj, 2010; Žeželj & Jokić, 2014).

We focused on the general problem of the terror management function of self-esteem strivings but included both collective and individual self-enhancement within this framework. A more detailed account of the present studies will be given after a thorough presentation of the methodological principles of terror management research, its crucial findings, as well as the criticisms addressed to it. It is to these issues that we presently turn our attention to.

II.   Terror management theory: the structure and functioning of the anxiety buffer

> *"Do we dream when we're dead?"*
> *"I think we don't. We never dream when we're dead.*
> *Sometimes something flashes out, but not half as long as a*
> *dream."*
> (H.G., 8 years old[3])

The hypotheses derived from the tenets of terror management theory

The authors derived two hypotheses from the theoretical propositions that have been subjected to extensive empirical scrutiny (Pyszczynski, Greenberg, & Solomon, 1997). The first one is called the *anxiety buffer hypothesis*, which suggests that if a certain psychological structure (as self-esteem or a worldview) serves the purposes of defending against anxiety then: (a) strengthening the structure would diminish anxiety and (b) disrupting the structure would increase anxiety.

In a series of studies (Greenberg et al., 1992b), participants were given positive or neutral false feedback from personality inventories and intelligence tests, which served as an induction of state self-esteem (or control). They were then presented with a video depicting various forms of dying (electric chair execution or footage of autopsy). It the end, anxiety levels were recorded, both through self-ratings, but also using some physiological indicators, as galvanic skin response. Results suggested that the anxiety levels were significantly lower in the group that was previously given positive personality feedback, supporting the hypothesis of a protective function of self-esteem in facing awareness of death.

The second hypothesis designated *mortality salience hypothesis* proposes that reminding of a source of anxiety would strengthen the need for a protective structure that shields from the anxiety. In different experiments, the researchers tested the effects of mortality salience inductions on the tendency to defend specific values or persons

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[3] Cited after Yalom, 1980

that are tightly related to the worldview embraced by an individual. From theoretical propositions, it follows that people would react positively to persons who validate their shared worldview and thereby strengthen the cultural anxiety buffer or, that they would react negatively to those who threaten it.

In one of the earliest empirical tests of the theory (Rosenblatt et al., 1989, Study 1) a group of judges were given a task to answer two questions about what feelings the thought of their own death evoked in them and to describe, as detailed as possible, what will be happening to them as they physically die. A second group answered questions about watching television. Both groups of judges were then presented with a case description and were asked to set fines for a person accused of prostitution. The judges who previously considered their own mortality set significantly higher fines compared to judges in the control condition. Death reminders thus led to more intense negative reactions to people violating the moral standards of the society.

In a typical mortality salience experiment, participants are usually presented with two open-ended questions, namely to describe emotions that thinking about their own death arouses in them and what they think would happen to them as they are dying and once they are dead (Rosenblatt et al., 1989). Control group participants are presented with parallel questions regarding either a neutral topic, for instance watching television or an aversive topic that is not related to death, for instance dental pain, an upcoming exam, speaking in public, uncertainty in life, meaninglessness, being paralyzed, etc. (see also Greenberg, 2012). This induction proved to make larger effects if participants are distracted for a short while prior to measurement of dependent variables (the reasons for which will be discussed further in the text) (Pyszczynski et al., 1999).

Interestingly, researchers observed that the contents of the responses to the questions about death were not in any way related to the reactions that were investigated (Greenberg, 2012). However, it has been shown that participants who answered the questions about death, also showed a tendency to complete ambiguous word fragments (e.g. c o ff _ _) with death related (coffin) rather than neutral (coffee) words (Arndt et al., 1997). This insight led TMT authors to hypothesize that defensive reactions to mortality reminders are activated at deeper cognitive levels rather than consciously engaged (the cognitive underpinnings will be discussed shortly). In addition, TMT experiments usually include a measure of state positive and negative affect as a control.

The inductions have typically been shown not to produce any affective reactions (e.g. Rosenblatt et al., 1989; Pyszczynski et al., 2015), nor were the effects observed attributable to a state of general physiological arousal (Rosenblatt et al., 1989).

The effects of mortality salience inductions have been replicated using various other procedures: watching a road trauma movie (Taubman Ben-Ari, Florian, & Mikulincer, 2000), presenting stimuli related to terrorism and destruction, as 911[4] (Arndt, Pyszczynski, & Cook, 2003), interviewing participants in the immediate surroundings of a cemetery (Jonas, Schimel, Greenberg, & Pyszczynski, 2002), or presenting them with obituaries for deceased psychologists with subtle death reminders, e.g. year of death (Galliot, Schmeichel, & Maner, 2007). These examples illustrate that mortality salience inductions ranged from more or less direct (explicit) to more implicit ones. The mortality salience effects were even replicated with subliminal priming procedures. In such a procedure, participants would be subliminally (i.e. below the threshold of conscious perception) exposed to the word *death* during a task including words unrelated to death (Castano, 2004). However, a recent meta-analytical study reveals that a clear majority (80%) of the studies used the most common procedure with open-ended questions, described earlier (Burke et al., 2010), while the priming procedures were used in only 4% of the experiments.

Functioning of the death anxiety buffer

> *"In neither man does the crisis elicit new defences. In the*
> *starkest possible manner it highlights the nature and the*
> *limitations of their modes of being."*
> (Irvin Yalom)

The research designed to test the described hypotheses has until now established two wide categories of effects of mortality salience: (a) defence of a valued worldview, accepted in the given culture as well as (b) protective strengthening of self-esteem. We

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[4] 9 /11 refers to the terrorist attacks on New York and Washington on September 11th, 2001.

will now present some of the crucial findings that support the functioning of the worldview and self-esteem strivings as buffers against the awareness of mortality.

a. Worldview defence

According to TMT, human motives make a hierarchical system in which higher levels are rooted in the basic desire to continue life (Pyszczynski et al., 1997). A series of specific social motives, as cognitive consistency, maintaining a positive social identity, self-enhancement and a desire for social influence can all be regarded as symbolic means of protection against fundamental anxiety.

The research within the TMT framework has demonstrated that concerns about death awareness play a major role in a host of social attitudes and behaviours that can be understood under the general propensity for defending cherished images of reality. We will first present findings regarding the terror management role of most basic human propensity for simple and consistent images of the social world. After that, we will review the most significant findings regarding social identifications, in-group favouritism and out-group derogation, extending into violence and terrorism. Finally, we will look into how mortality salience affects political attitudes and ideological leanings. For expository reasons, we will organize the presentation under several headings although alternative classifications are possible.

1) Mortality salience and structuring of the social world

According to TMT, protecting oneself from the awareness of death makes at least one of the significant motivational factors behind the propensity for simple, consistent and meaningful conceptions of the social world. A series of studies demonstrated that thinking about death affected various aspects in the structuring of the social world (Landau et al., 2004a). For instance, in one experiment participants were reminded of their own death or dental pain. They were then presented with a person description with conflicting information about her introversion/ extraversion. To one group of participants, information about extraversion was presented first, and in the other after the information about introversion. Participants who thought about death rated the target as more sociable when the information about extraversion was presented first, to a significantly larger extent than the dental pain group. Thus, thinking about death bolstered the primacy effects in impression formation (Landau et al., 2004a, Study 1).

In a further study, participants reminded of death or uncertainty were presented with descriptions of a target person as either consistently intro/extraverted or inconsistent (showing both patterns of behaviour). Mortality reminders led participants high in need for structure to express a clear preference (more liking) for targets who demonstrated consistent behavioural patterns, Inconsistency of others supposedly precludes making internal attributions for the behaviour and thus endangers the predictability of the social environment (Landau et al., 2004a, Study 3).

Interestingly, findings also show that mortality salience increased the tendency to blame innocent victims, expressed through searching for information that would cast them in a negative light (Landau et al., 2004a, Study 5; see also Hirschberger, 2006). People are led by their need to live in a stable and just world and typically demonstrate a tendency to blame innocent victims to preserve this image. When they are reminded of death, this tendency is further enhanced. Similarly, in one of the studies, it was found that threatening just world beliefs increases the cognitive availability of thoughts about death.

The studies demonstrated that some of the well-known biases in social cognition become more pronounced after reminders of death, suggesting thus that an underlying motivation for these biases can be protection from the awareness of death. The theory has therefore been proven as relevant for some of the most fundamental social cognitive processes. In the following, we shall review other findings related to inter-group relations.

2) Terror-management account of in-group favouritism and out-group derogation

One of the most important elements in worldview defence is strengthening ties with significant groups. According to TMT, each worldview is a social construction of reality and, being such, continually vulnerable to threats, coming from alternative worldviews, as well as critical scrutiny. Different people and groups construct differing worldviews, which are not necessarily compatible, as for instance is the case with religious groups. An individual is motivated to defend worldviews embraced by his or her in-groups, in order to preserve their potential as buffers against existential concerns.

One of the significant effects of mortality salience should, therefore, be an increased identification with important in-groups as well as the accompanying biases: a more positive perception of the members of the own group and negative perception of members of other groups. A series of studies has indeed demonstrated the patterns of in-group favouritism and out-group derogation (Arndt et al., 2002; Greenberg et al., 1990; Halloran & Kashima, 2004).

For instance, in one of the earliest TMT studies (Greenberg et al., 1990) the authors examined participants' impressions about the members of the religious in- and out-group (Christians vs. Jewish) after reminding them of their own mortality. Participants rated several personality traits in one representative of each religious group, after looking into their ostensible responses to a personality inventory. Results suggested that mortality salient participants rated the in-group member more favourably, and the out-group member less favourably. The results supported the hypothesis and thus provided a partial account of the phenomenon of in-group bias.

Similar effects were found in a study within the so-called "minimal group paradigm"[5], suggesting importance of existential concerns in the core processes of group categorization. The authors proposed that death reminders would enhance both in-group favouritism and out-group derogation (Harmon-Jones, Greenberg, Solomon, & Simon, 1996). Participants rated the traits of and predicted attitudes of three targets: themselves personally, in- and out-groups. In- and out-group categorization was based on random choice or ostensible aesthetic preferences. In-group favouritism was observed only when the categorization was made according to ostensible aesthetic preferences, but not when it was completely random. The findings thus support the general hypothesis, but also suggest the importance of the possibility of actual identification with the group, even if it is based in a relatively peripheral attribute. A recent study using event-related potentials (Henry, Bartholow, & Arndt, 2010) corroborated that mortality reminders heighten sensitivity to cues relevant to group categorization.

Another study investigated how participants reacted to persons who explicitly praised or criticised their country (Greenberg et al., 1990, Study 3). Participants rated the authors of two essays that analyzed the political system in America: one of them cast it in a

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[5] Investigating the in-group favouritism if the groups are newly formed and based on a random or irrelevant feature (Tajfel, Billig, Bundy, & Flament, 1971)

favourable light whereas the other criticized it. One half of the participants were told that the author is a professor at a distinguished university while the others were told that this is the president of the Communist Party of the USA. Participants reminded of death rated the pro-American author more positively and the anti-American author more negatively. An identical pattern was observed irrespective of the impartiality of the source, i.e. whether the author was said to be a university professor or Communist party president.

Another line of research investigated the effects of mortality salience on implicit or symbolic racism (Greenberg, Schimel, Martens, Solomon, & Pyszczynski, 2001). For historical reasons and owing to the current power distribution in the society, White people expressing racial pride or favouritism in the USA are generally considered racist to a larger degree than African Americans who emphasize their racial identity in the same fashion. Despite of the observed tendency, participants reminded of death tended to perceive White people expressing racial pride as less racist. In another study, participants suggested prison sentence length for African American or White employer accused of racial discrimination. After thinking about death, White participants set considerably lower sentences for a White, and higher for an African American employer. Authors suggest that activating death thoughts could result in more tolerance for racism, even in spite of tolerant explicit attitudes.

3) The terror management role of social identifications

Emanuele Castano and associates tested in a separate line of research the effects of mortality salience on social identifications more directly, combining the terror management with the social identity approach (Castano, 2004; Castano, Yzerbyt, Paladino & Sacchi, 2002; Castano, Yzerbyt & Paladino, 2004). The general hypothesis was that reminding people of death would lead them to focus on their social (as opposed to individual) identities, defend important groups they belong to and their integrity. This hypothesis was tested on a series of measures of positivity/negativity of the perception of in- and out-groups, identification with groups, perceived entitativity (unity of the group), the perception of stereotypes, etc.

In one study, the authors reminded participants of either death or book-reading and then asked them a series of questions about their perceptions of the national group (Italians):

how unified their group was, to what degree they identified with it and how positively they rated its characteristics compared to another group (i.e. Germans). Mortality salience induction increased all the measures in the expected direction. Interestingly, the induction did not affect perceptions of the out-group, suggesting that in-group affirmation and out-group derogation can be separate processes. These results were replicated with implicit inductions of mortality salience, i.e. priming participants with either word *death* or *field* (Castano, 2004). Since different measures are of central interest to the present study, we will summarize the effects of mortality salience demonstrated in this research programme:

a. naming a larger number of social identifications in an open-ended task,

b. strengthened identification with the national group, as well as an increased perception of the unity of the group and its positivity,

c. increased perceived unity in the group of friends,

d. emphasized exclusiveness in social categorization, i.e. concern about the borders between in- and out-groups,

e. more overlap in descriptions of the group and self on a series of negative characteristics considered stereotypical of the group.

Castano and associates suggested that social identifications are important in their own right, not solely due to their capacity to validate particular worldviews, as proposed elsewhere in TMT literature. These authors conceive of social identifications as symbolic defence systems in themselves, allowing a transcendence of the personal self in both space and time (Castano et al., 2004). If considered in this manner, social identifications represent both a part of a valued worldview and a part of an individual's identity. This raises the issue of the relationships between the two proposed components of the dual anxiety buffer system, an issue we will shortly turn back to.

4) Violence and terrorism

The studies reviewed so far demonstrated that people confronted with reminders of death tend to defend their valued worldviews and the groups within which the worldviews are shared and sometime also derogate others (Greenberg et al., 1990). Sometimes, however, the mere derogation cannot suffice to avert the threat posed by other groups, since members of the other group persist in their opinions and beliefs. TMT authors also propose that there are alternative reactions to those who do not share

our worldviews (Solomon, Greenberg, & Pyszczynski, 2000), including attempts at assimilating them to our worldviews (as in the religious missionary activities) or accommodating in part to theirs (i.e. including some elements from the other worldviews into our own). The ultimate and most drastic reaction aimed at world-threatening others would be annihilation, i.e. destroying of the other group (Greenberg, 2012; J. Hayes, Schimel, & Williams, 2008b; Solomon et al., 2000). Hence comes the terror management perspective on inter-group aggression and violence – these can be understood as a means of securing one's worldview from threats posed by groups of people subscribing to alternative worldviews. Violent conflicts can therefore be conceived of as battlegrounds for competing worldviews that each claim the unique promise for attaining symbolic immortality. If the group annihilates the other group, the alternative worldview also ceases to exist.

A matter of particular importance for inter-ethnic relations worldwide is the possibility that violence against other groups becomes more probable in the contexts where there is (real or perceived) threat to survival. A series of studies explored the effects of mortality salience on aggressive and violent reactions towards differing others. In these studies, aggressiveness was measured as the quantity of hot sauce administered to a person who challenged a valued worldview of an individual (McGregor et al., 1998). After thinking about death, participants administered significantly larger amount of hot sauce in an ostensible product preference study, to the author of an essay supporting different political attitudes. Follow-up studies demonstrated that the effects were specifically tied to a person threatening a valued worldview and were not obtained if an individual represented a source of inconvenience (e.g. who previously administered some tasteless juice to participants).

The terror management role of inter-group aggression is supported by other studies. A particularly interesting line of research attempted to shed light on the two sides in the continuing conflict between America and Muslim countries. Two studies were conducted in America and Iran (Pyszczynski et al., 2006), to test the idea that both sides hold ideologies that emphasize the exclusive value and righteousness of the own group. In Iran and other countries in the Middle East, the USA is referred to as *the Great Satan*, while the former president George W. Bush coined the term *the Axis of Evil* to designate the opponent countries.

The authors wished to examine whether thinking about death would affect the support for terrorist attacks as a means of political struggle among young Iranians. Students expressed their impressions about the author of an essay articulating pro- or anti-terrorist attitudes, and also their personal support the proposed actions. In the control condition, students showed a clear preference for pacifistic options. However, death reminders completely reversed the patterns of response: students expressed more positive impressions about the pro-terrorist author and supported his actions to a greater degree. It is important to note that these findings attest not only to an enhanced support for existing beliefs, but for the possibility to dramatically change existing attitudes.

In a parallel study conducted with American students (Pyszczynski et al., 2006; Study 2) the authors investigated support for violent anti-terrorist actions that would include using weapons of mass destruction and killing of innocent civilians. Enhanced support for these actions was observed after an induction of death thoughts among the conservative, but not liberal students. The authors interpret the results as an expression of implicit attitudes in conservatively oriented participants. Taken together, the two studies described are striking in that they clearly demonstrate that identical mechanisms can promote violence at both sides of a conflict. Similar findings were obtained in Israel, in the context of the protracted conflict between Israelis and Palestinians (Hirschberger & Ein-Dor, 2006; Hirschberger et al., 2010).

Another line of research demonstrated that learning that out-groupers perceived as threatening for one's worldview had died can lower defensive reactions to death reminders (J. Hayes et al., 2008b). A group of Christian participants read a text about an imminent islamization of Nazareth (the birthplace of Jesus Christ) since the Muslim part of the population is becoming dominant over the Christian community, or a neutral article. One half of those who read the worldview threatening text also learned from it that a group of Muslims had died in a plane crash on their way to Nazareth, while the other half did not get this information. Those who learned about the plane crash did not demonstrate either the heightened accessibility of death-thoughts or worldview defences that were observed in the second group. The authors suggest that learning about the annihilation of the part of the threatening group functioned as a defence in itself, rendering other defensive reactions unneeded.

5) Mortality salience and political preferences

To the extent that various political attitudes and ideology play an important part in cherished worldviews, mortality reminders could also affect these attitudes and preferences (e.g. Hirschberger, Pyszczynski, & Ein-dor, 2010; Jonas & Greenberg, 2004; McGregor et al., 1998; Pyszczynski, 2004; Pyszczynski, Rothschild, & Abdollahi, 2008; Weise et al., 2008). In one study (Jonas & Greenberg, 2004) the authors investigated how death reminders would affect the expression of attitudes towards a controversial political topic – the fall of the Berlin Wall and unification of Germany. German participants rated authors of a pro- or contra-unifications essays. Persons who favoured unification polarized their attitudes in rating the pro-essay author more favourably after mortality reminders, whereas no effects were observed in neutral attitude participants.

Death thought salience can also do more than polarize existing attitudes. It can also play a role in shaping preferences for different types of leaders. Cohen and colleagues explored potential effects of mortality salience on the evaluations of different types of leaders (Cohen, Solomon, Maxfield, Pyszczynski, & Greenberg, 2004). Participants were given a task to evaluate three governor candidates based on short statements, and express their voting intentions. Statements were constructed so as to represent three types of leadership: a charismatic leader, a task-oriented leader and a relationship-oriented leader. In the mortality salience condition evaluations of the charismatic leader were significantly more positive and the percentage of participants who would vote for him increased considerably (from 4% in control to 31%). A reversed pattern of evaluations was obtained for relationship-oriented, i.e. democratic leader. The authors suggested that reminders of death increased appeal of a strong, authoritative figure capable of providing security.

Another study focused on preferences for presidential candidates, in contrasting (at the time) US president George Bush and the thinkable Democratic counterpart, John Carey (Landau et al., 2004b). Both death and terrorism reminders (stimuli as *911* or *WTC*) increased preferences for Bush, even in liberal students. Interestingly, whereas the student participants preferred the Democratic candidate in the control condition, their ratings after death or terrorism reminders were reversed in that they predominantly favoured Bush.

These findings have important implications for the rationality of democratic elections, in particular in times of crises and war. When mortality is made salient, people could turn to strong and charismatic leaders that are seen as capable of shielding the nation from threats.

6) How the awareness of death affects ideological orientation

One research line attempted to test the mortality salience hypothesis in explaining wider ideological orientation. Castano and associates tested in a series of experiments alternative hypotheses about the crucial functions of ideological orientation: to reduce uncertainty (as a cognitive function) or to reduce death anxiety (as a motivational function) (Castano et al., 2011). The rationale was as follows: if ideology serves an uncertainty reducing function, thinking about death should lead to a universal increase in conservative thinking. If, on the other hand, ideology serves an anxiety buffer function, death reminders should result in either a more conservative or a more liberal leaning depending on the primary orientation. These accounts were tested on a number of measures, from authoritarianism scale, through attitudes towards creationism and evolution, to evaluation of authors critical of USA. The results demonstrated that liberal participants generally became even more tolerant after death reminders. The findings thus supported the anxiety buffer function of political orientation.

Other studies further investigated whether defensive reactions to death reminders would depend on the ideological orientation - for instance, would liberal and conservative participants express similar defensive reactions to death reminders or would the liberal become even more liberal (Greenberg, Simon, Pyszczynski, Solomon, & Chatel, 1992a; Weise et al., 2008). The research revealed intricate patterns of findings: although in some cases liberal participants did not recourse to the typical defensive derogation of persons with opposing political views (Greenberg et al., 1992a), in other cases they proved sensitive to death reminders, e.g. in preferring a non-democrat leader (Landau et al., 2004b) or espousing conservative attitudes (Nail, McGregor, Drinkwater, Steele, & Thompson, 2009). Conversely, in one study (Weise et al., 2008, Study 2) it was shown that priming secure interpersonal relations lowered support for violent anti-terrorist action in conservative participants.

Research on the effects of death reminders on ideological leaning offers some valuable perspectives on the issue of whether fear of death necessarily leads to less tolerant

attitudes and derogation of others. Perhaps embracing some ideologies, wherein tolerance towards others is an accepted value, can shield from developing destructive defensive reactions brought about by the awareness of death. Nurturing these values and ideologies would make valuable assets in the efforts for building peaceful and open societies, particularly in the times of crises (Pyszczynski et al., 2008). On the other hand, research also highlights the importance of situational cues: when a threat is (perceived as) imminent and severe, as for instance in fear of a terrorist attack, even more liberal participants can opt out of tolerant and democratic solutions (Pyszczynski et al., 2008). At the same time, reminding people of the value of tolerance, particularly if this comes from a respected authority (Pyszczynski et al., 2008) or reminding them of the common humanity, e.g. of the common experiences shared by different groups (Hirschberger et al., 2010) could reduce the hostile responses to death reminders and encourage more compassionate attitudes.

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The previous research has thus corroborated that diverse social and political perceptions, attitudes and behaviours are at least partly motivated by a desire to defend and strengthen cherished worldviews that provide security from existential threats. Interestingly, many of the observed effects are related to perceptions of important in-groups and out-groups, suggesting that the role of social identifications in buffering existential concerns could be of particular importance. We can also observe from the findings that in some situations, e.g. in the research on ideological orientations, completely opposite reactions to mortality reminders were recorded. These inconsistencies suggest that some moderating variables, not accounted for by the theory, affected the observed reactions. We will get back to this issue after reviewing the findings pertaining to the second component of the anxiety buffer: self-esteem strengthening.

b. Strengthening self-esteem

According to TMT, self-esteem is a positive evaluation of oneself, based on two elements: (a) belief in the validity of a specific worldview and (b) belief that the person is fulfilling the personal value standards prescribed within that worldview (Greenberg et al., 1986; Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004). In other words,

self-esteem represents the degree to which a person is assured that he or she holds a secure place within a meaningful view of reality. This conceptualization emphasizes relations between self-esteem and the socio-cultural context. The fundamental role of self-esteem is thus defensive – it protects an individual from the awareness of own finiteness and the resulting fear. It should be noted that TMT authors emphasize that this theory attempts to provide an answer to why people have the need for self-esteem, which, together with a large number of other social motives, is considered to be a proximal motive and an expression of the underlying protection from the fear of death. Another benefit of positive self-evaluation consists in maintaining positive affective state or self-efficacy in meeting challenging tasks.

Terror management theory postulates that self-esteem striving can be activated by a self-relevant threat, aimed either at positive self-image or valued worldview of an individual. However, the theory also presumes that people *continually* strive to enhance their self-esteem, to build up the buffer that protects them from anxieties inherent in the human condition (Pyszczynski et al., 2004).

Research findings have not demonstrated a direct effect of mortality salience on increases in self-esteem, but rather an increased need of an individual to *convince* him/ herself of one's worth. According to the authors, this need may result in any of the following: a. a tendency to invest more in attaining the standards valued within the culture, b. failing to achieve the standards leads to more intense discomfort or c. a tendency for bias in processing information relevant for self (Pyszczynski et al., 2004).

We can observe that enhancing self-esteem is not always clearly operationally distinguished as a defensive strategy from worldview defence by the authors. For instance, it has been suggested that acts of defending an important worldview can also be interpreted as an expression of individual self-enhancement. Pyszczynski and associates (2004) suggest that one of the lines of evidence supporting the terror management role of self-esteem is an "increased adherence to the standards inherent in long-standing attitudes, especially when these attitudes have recently been primed" (p.452). This makes sense, since criteria for self-evaluation are dependent upon the wider social and cultural value context. If we want to defend a positive evaluation of ourselves, we have to make ourselves believe that the evaluation is based on a

meaningful criterion. However, this poses a difficulty for the theoretical model, as the components do not appear to have equal status.

In the following, we will review the findings that pertain more specifically to the self-esteem component of the anxiety buffer, and will later return to discussing the relations between the two components of the proposed anxiety buffer.

1) Self-esteem reduces anxiety

Greenberg and associates tested the anxiety-buffering function of self-esteem in a series of experiments (Greenberg et al., 1992b). Participants' self-esteem was experimentally enhanced by giving positive feedback from personality or intelligence tests. The inductions of self-esteem led to reduction of anxiety induced by exposure to a documentary movie depicting execution of capital punishment or autopsy, or anticipation of a painful electric shock (Greenberg et al., 1992b). In addition to self-report measures, state anxiety was also measured through physiological indicators, i.e. galvanic skin response.

Further studies confirmed that both situationally induced and high dispositional self-esteem buffered defensive tendencies to deny vulnerability to a short life expectancy (Greenberg et al., 1993), speaking to the support of the anxiety-buffering role of self-esteem. In another study, after being reminded of death, participants with high trait self-esteem also demonstrated less death though availability, compared to those with low self-esteem (Harmon-Jones et al, 1997).

2) Mortality salience bolsters self-esteem striving

Fewer of the overall number of TMT studies have looked more directly into biases in processing information relevant to self, as well as other self-serving strategies. Similar observations were made in one of the studies that sought to link TMT with the research on self-enhancement (Mikulincer & Florian, 2002). In this study, participants who were induced to think about death or a control topic were asked to make a number of attributions for personal success or failure. Mortality salience lead to a more pronounced tendency to attribute personal success to internal, stable and global factors, while lack of success was attributed to external, unstable and local factors, compared

with the control group. These effects were replicated when participants were faced with a false success or failure feedback from a cognitive task. In addition, these attributional biases were shown to lower death thought accessibility after introduction of death reminders. These findings attest to a self-enhancement tendency in the form of self-serving bias (Mikulincer & Florian, 2002).

In another study (Dechesne et al., 2003), participants were reminded of death or of a neutral topic, filled out a number of personality measures and were then told that the best-fitting personality profile will be presented to them. Participants then rated a generalised positive profile. Mortality salient participants demonstrated a tendency to endorse this profile more strongly compared to those in the control condition. In this experiment, another manipulation was introduced – prior to death (or control) reminders, participants were asked to read an ostensible article arguing in favour or against belief in afterlife. The strengthened tendency to endorse the positive personality profile, indicating a self-serving strategy, was observed only among participants who read the essay arguing against afterlife beliefs. Conversely, those who read the article offering evidence of an afterlife demonstrated less self-enhancement, as the affirmation of a life after this presumably soothed their fear of death. This is a further argument for importance of death concerns for maintaining a positive self-image.

3) Self-esteem attenuates defensive reactions to death reminders

A similar line of research investigated a mirror-effect of the previously discussed reactions: how self-esteem led to attenuated defensive reactions to death reminders. In one study, a situational self-esteem boost (positive feedback) was given to participants prior to the death-thought induction. This boost attenuated the tendency of participants to negatively rate the author of an essay critical towards USA (Harmon-Jones et al., 1997). Self-esteem inductions proved effective for both participants with high and low state self-esteem (Harmon-Jones et al., 1997, Study 2).

However, findings from other studies suggest the opposite effect: enhanced defensive reactions in people with high self-esteem. For instance, in a typical mortality salience hypothesis test, Baldwin & Wesley (1996) compared how participants low and high in self-esteem would react to out-groupers after being exposed to death reminders. Self-esteem proved a significant moderator, but so that participants with high self-esteem

polarized their ratings of out-groupers to a larger extent after mortality reminders (see also Baumeister, Smart, & Boden, 1996; Baumeister, Heatherton, & Tice, 1993; Taylor & Brown, 1988).

4) Mortality salience prompts risky behaviours that enhance self-esteem

Thinking about death can also lead to an increased interest in behaviours that are instrumental for constructing and maintaining a positive self-image. An interesting line of research demonstrated that death reminders can even bolster interest in behaviours that are actually detrimental to health and well-being of an individual. In one study (Taubman Ben-Ari et al., 2000), participants for whom driving had high or low personal relevance, were induced to think about death by being exposed to a road trauma film (as opposed to a neutral film). Watching a road trauma film led to higher reported intention to drive more carefully but, conversely, to higher actual speeds reached in a driving simulator, as shown in a follow-up study. Of most interest for the present argument, these effects were only observed among participants who rated driving as important for their self-esteem. Since risky driving provided these participants with a sense of self-worth, mortality reminders lead to a heightened probability to engage in it, although they did not appear fully aware of this influence.

In another study (Routledge et al., 2004), female participants were recruited that at least partially rated tanned skin as relevant for their image and self-esteem. They were reminded of either death or uncertainty and then asked to rate their intentions to buy sunscreen products with varying protective factors. Despite expressing initially higher intentions to buy high protective factor products immediately after a death reminder, after a delay, the interest in buying high protective products dropped significantly. The authors interpreted this as suggestive of the operation of symbolic defences – since a tanned skin was an important characteristic of attractive appearance for the participants, death reminders increased motivation for skin-tanning. These findings were replicated with another sample of girls that were primed to link physical attractiveness to tanned skin. The ones reminded of death expressed more interest in various tanning products and services.

Despite the fact that the behaviours examined are risky and possibly detrimental to health and life of an individual, it can be assumed that the tendency to preserve and

enhance a positive self-image about oneself as a daring driver or an attractive person, for instance, is being amplified by thinking about death. The findings also suggest that even situational primes could channel defensive reactions (Routledge et al., 2004).

Jamie Goldenberg and associates further investigated how the perception of one's body is affected by reminders of death (Goldenberg, Arndt, Hart, & Brown, 2005). Since the body is a potent reminder of physical decay and mortality, it is proposed that people are ambivalent to the merely physical bodies and therefore subject them to a process of symbolic transformation, imbuing them with a meaning that is culturally relevant. This applies especially to women's bodies that are perceived as particularly tied to the animal nature (due to their reproductive capacities). The cultural standards for women's bodies are therefore more stringent. One of the examples of such standards is valuing thinness in the Western cultures. When reminded of death, women are therefore expected to restrict their eating, to be closer to the cultural ideal. In a series of three studies (Goldenberg et al., 2005), actual eating behaviour was investigated in the context of ostensible marketing studies. Participants were reminded either of death or a control topic and were offered nutritious but fattening snacks. Results supported the initial hypothesis: women reminded of death restricted their eating, whereas men did not.

A further study included eating in the company of same-sex peers. In this situation, it was also shown that the actual BMI (body-mass index), an indicator of the success in meeting the cultural standards, affected the quantity of food eaten in interaction with death reminders. The third study showed that the perception of the discrepancy from the preferred weight mediated the effects of mortality reminders on restrictions in eating. Taken together, the studies corroborate the hypothesis that mortality salience affects the desire to conform to the culturally valued standards of thinness through restricting one's own consumption. The authors draw health implications of the findings, in that women could be motivated by the attainment of cultural standards of attractiveness to put their health at risk.

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While empirical findings offer strong support for the protective function of worldview defence, we believe that the proposed terror management function of self-esteem should be further validated, in particular from a cross-cultural perspective. An important issue

is the relation between the two proposed components of the anxiety buffer system, namely worldview defence and self-esteem. Since the two cannot be easily distinguished and might even engage in different relations depending on the cultural context, we will propose an alternative conceptualization of the anxiety buffer system. We believe that TMT literature could benefit from closer connections with the large body of research on self, identity, self-protection and self-enhancement that offer a range of diverse phenomena whose terror management function can be put to test. In the following chapter, we will attempt to place the issue of psychological defence from the awareness of death in the context of self-enhancement research.

An additional issue that warrants consideration are the underlying processes of terror management. Some of the experiments described previously demonstrated that mortality salience inductions instigated divergent reactions if those were measured immediately following the inductions or after a delay. This lead TMT authors to elaborate on the cognitive underpinnings of the anxiety buffer and include certain clarifications in the model.

Conceptual refinements: cognitive architecture of the dual anxiety buffer

With the developing research within the framework of TMT, the theory has been enriched with a series of conceptual refinements (Pyszczynski et al., 2015), one of which is the elucidation of the underlying processes of terror management. Experiments revealed some unexpected findings, for instance, that if a short delay follows mortality reminders, the investigated effects become more pronounced than if they are measured immediately after the inductions (Pyszczynski, Greenberg, & Solomon, 1999). These findings, together with a consideration of why people usually do not experience intensive affect regarding death, led the authors to propose a dual anxiety buffer system to protect from the awareness of death (Arndt, Cook, & Routledge, 2004; Pyszczynski, Greenberg, & Solomon, 1999).

According to this model, people are capable of spending most of their time without actively considering their finality, but these thoughts can be easily activated and brought to conscious attention by various cues (the operation of the anxiety buffer system is delineated in Graph 1). When thoughts about death become conscious, the first line of

defence is activated, the so-called proximal or direct strategies – these are pseudo-rational strategies aimed at reducing perceptions of the immediate personal threat.

Imagine a person who has just attended a funeral of a close friend. The person becomes aware of death and thoughts of death come to the focus of the attention. She can protect herself through various manoeuvres: by distancing from the situations with death reminders, by suppressing these thoughts or through engaging in biased thinking, e.g. thinking that she is still young and leads a healthy lifestyle so that concerns about dying can be postponed to an undetermined moment in distant future.

When thoughts of death are removed from the focus of attention in this manner, they remain active at deeper levels of the cognitive system, and this is the moment when the second line of defence is being activated, i.e. distal or symbolic defences.

According to TMT, symbolic defences operate when thoughts about death are outside of conscious awareness but are still accessible in unconscious or sub-conscious domains. In accordance with the contemporary findings regarding implicit cognitive processes (Bargh & Chartrand, 2000; Greenwald & Banaji, 1995; Wegner, 1994; Wegner & Smart, 1997), contents that are not within conscious awareness can also affect human cognitive processes and behaviour. In his work on ironic thinking processes, Wegner (1994) suggested that suppression of thought has paradoxical effects, in that suppressed thoughts can easily return to consciousness once we cease to suppress them. This leads to a hyper accessibility of suppressed thoughts at the implicit levels in the cognitive system (Wegner & Smart, 1997) – although they are outside of focal awareness, they can easily re-enter the consciousness.

TMT authors suggested that similar account can be applied to situations when a person attempts to suppress death-related thoughts. Once the suppressive activity ceases, they remain outside of consciousness but are readily available to conscious thought (Arndt et al., 2004, Pyszczynski et al., 1999). These unconscious death thoughts are hypothesised to be the basis for the operation of symbolic defences.

It is important to note that symbolic defences are constantly active, according to the model, but are being bolstered with the raising salience of death thoughts when their emerging in the consciousness becomes imminent. This happens, for instance, when a person is reminded of death or when the functioning of the anxiety buffer system is being disrupted in any way (Arndt et al., 1997). Moreover, the defences are most easily

engaged when a person is in experiential, rather than the rational mode of cognitive processing (Simon et al., 1997).

Graph 1. Schematic presentation of the dual anxiety buffer
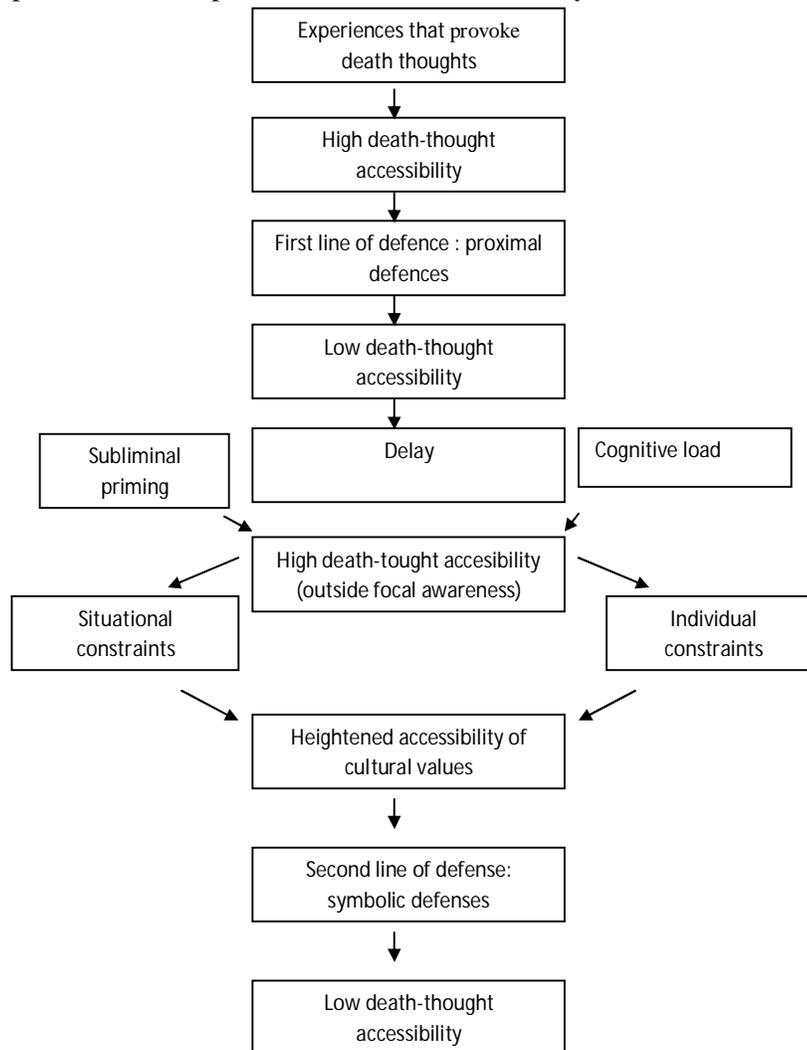
The anxiety buffer system thus aims to lower death-thought accessibility in the cognitive system, keeping these cognitions further away from awareness (Greenberg et al., 2001). The proximal and distal defences cooperate in achieving this goal. This would also explain the lack of awareness that any defensive system is operating: should the buffer function properly, the person would not even be aware of its functioning. It is only in the cases where this protective system is disrupted that an individual becomes aware of the issue and experiences affect (Arndt et al., 2004).

1) Empirical support for the dual anxiety buffer

The proposed dual anxiety buffer model has already gained considerable empirical support (Arndt et al., 1997; Arndt, et al., 2004; Pyszczynski et al., 1999). In a typical experiment (Pyszczynski et al., 1999), participants were induced to think about death or another aversive topic. They were then given a distractor task (e.g. to read about an unrelated topic), to allow for the first line of defence to remove the thoughts of death from conscious attention.

They were then asked to write down all the thoughts they had in the course of three minutes and to complete a series of word fragments that could be completed either with a death-related or a neutral word, which provided an indicator of accessibility of death-related thoughts outside conscious awareness. The findings suggested that thoughts about death were not prevalent in any of the groups at a conscious level (indicated by the thought listing procedure), but the group that was previously induced to think about death demonstrated raised accessibility of death thoughts on the word completion task. The findings demonstrate an increased cognitive availability in the absence of conscious thoughts, which supports the propositions of the model.

Secondly, a series of experiments lends support for the existence of two distinct lines of defence from the awareness of death. In one experiment it was observed that participants engaged in proximal defences (denying being at risk of dying) immediately after being reminded of death, but not after a delay. Conversely, participants engaged in distal defences (demonstrating in-group bias) after a delay, but not immediately after death reminders (Greenberg, Arndt, Simon, Pyszczynski, & Solomon, 2000).

Some findings support the presumed timeline in the activation of proximal and distal defence systems. In a study we presented earlier (Routlegde et al., 2004), participants were reminded of death or an unrelated topic and then asked about their interest in sun-protection behaviours. Participants reported more interest for sun-protection products immediately after death reminders, thus engaging in proximal defence. However, participants reported lower levels of interest in these products after a delay period. The finding thus suggests the operation of the distal defence system – preferring an attractive appearance to protecting the skin from the sun, and through this validating an important aspect of the self-image.

A similar conclusion can be drawn from studies introducing subliminal death reminders. In one study, participants were presented with the word *death* either subliminally (under the threshold of conscious recognition) or at the level of conscious recognition. The two conditions produced divergent effects: participants who were primed subliminally demonstrated effects of semantic priming (facilitated recognition of related words), as well as a tendency to express in-group bias, whereas these effects were not observed when the reminders were possible to perceive at the conscious level. A possible explanation is that the conscious appraisal condition allowed to engage in proximal defences and doing so reduce death-thought availability (Arndt et al., 1997).

2) The role of death- though accessibility in terror management

The presented lines of research strongly support the proposition of a dual defensive system that is also in line with dual models of cognition developed in other areas of psychology (e.g. Kahneman, 2015; Schneider & Shiffrin, 1977). This conceptual refinement has been additionally elaborated within what is now called death-thought accessibility hypothesis and a novel approach to studying terror management (DTA; J. Hayes, Schimel, Faucher, & Williams, 2008a; Schimel, Hayes, Williams, & Jahrig, 2007). The concept of death-thought accessibility, i.e. accessibility of death-related cognitions outside of focal awareness, plays a crucial role within this approach. Namely, this line of research investigates reactions to death reminders through measures of death-thought accessibility.

Death-thought accessibility is most frequently measured by the previoiusly described word completion task, i.e. presenting participants with ambivalent word fragments that can be either completed with a death related or a neutral word (J. Hayes, Schimel, Arndt, Faucher, 2010). Alternative operationalizations have also been developed, e.g. interpretation of ambiguous pictures, lexical decision task, implicit association test, etc.

Death-thought accessibility hypothesis has recently been introduced as a third hypothesis to test the crucial tenets of the theory (Greenberg, 2012; J. Hayes et al., 2010; Pyszczynski et al., 2015). This hypothesis states that if a certain structure is providing protection from death awareness, then: a. a threat to the structure will heighten death-related thoughts and b. strengthening the structure will lower death-related thoughts (J. Hayes et al., 2010). A line of research supported the first part of the

hypothesis by showing that threatening valued worldviews lead to heightened accessibility of death thoughts (Schimel et al., 2007). For instance, presenting Canadian participants with threats to their cultural values (vs. threats to other cultural values) heightened their DTA. Similarly, presenting religious sceptics with strong arguments for intelligent design raised their death-thought accessibility. Threats to a person's self-esteem also raise accessibility of death-related thoughts (J. Hayes et al., 2008a; Oglivie et al., 2008). For instance, giving an unfavourable intelligence test or personality feedback or asking participants to remember instances when they did not behave in accordance with their own values increased their DTA.

It follows from this line of thinking that the concept of death-thought accessibility has been used as an alternative to death reminders, i.e. inductions of mortality salience. Several other lines of research corroborate the relevance of the DTA construct for terror management processes, beyond the direct tests of the DTA hypothesis. For instance, raised death-thought accessibility was also found to be a result of priming concepts that are supposed to be related to the concept of death, e.g. stimuli related to cancer, terrorism, life insurance companies, but also depictions of "wild" natural sceneries or imperfect androids (J. Hayes et al., 2010). Another line of research is considering possible individual differences in baseline death-thought accessibility and how they can affect terror management processes. It has been proposed that a high dispositional level of DTA could be one factor of psychological vulnerability and connected with lower levels of subjective well-being (J. Hayes et al., 2010).

This new research line adds to the understanding of the cognitive architecture of terror management processes. The case for the presupposed operation of symbolic defences outside of focal awareness appears to be strong. This line of research is, however, still ongoing and the subtleties of the cognitive processes are still to be unravelled. We will briefly mention several issues that are a matter of some debate. The first question is related to the role of death-thought accessibility in the operation of the anxiety buffer. From the previously presented model, it follows that heightened DTA should mediate the effects of mortality salience on the defence of worldviews and self-esteem. Previous research has, however, yielded mixed findings with regard to this issue (J. Hayes et al., 2010) – while some studies supported this, others did not find such a relation. It has been pointed out that exploring this mediation can be problematic since the mere

measurement of DTA can induce heightened DTA or even conscious death-related thought. This lack of observed mediation opens up further issues, for instance, whether it is possible that mortality salience effects are, at least sometimes, mediated by different processes and whether they necessarily have to be non-conscious. Although these issues are important for clarifying the precise mechanisms of terror management, either answer would not invalidate the basic tenets of terror management theory.

Since the present study is a first systematic programme conceptualized to test the propositions of terror management theory in the local context, we will also look into these underlying cognitive processes. The aim of the study will not be to investigate these processes in detail. However, we will include some basic measures of both implicit and explicit cognitive processes and also test their potential mediation of reactions to death reminders, to be able to delineate the basic operation of the dual anxiety buffer.

III.   Some critiques of terror management theory

To briefly summarize the previous chapter, terror management theory has opened up novel avenues for social-psychological research and inspired a very dynamic research domain. This research has provided a great deal of empirical support for the basic tenets of the theory, as well as given rise to its further conceptual refinements. Having in mind the pretensions of TMT to provide fundamental explanation of social-psychological phenomena and its broad range of potential applications, it is not surprising that the theory has also received its share of criticism (e.g. Kirckpatrick & Navarette, 2005; Leary, 2004; Martin, & van den Bos, 2014; Mikulincer & Florian, 2002). In the following, we will give an overview of the most relevant criticisms, focusing our discussion on the issues that we are going to address in more detail in the present study.

A recent article reviews much of the criticism addressed at the theory (Martin, & van den Bos, 2014). Despite giving credit to the theory for its fostering novel directions in research as well as integration across fields, Martin and van den Bos call for a paradigm shift in research on threat and culture, since they feel insistence on a single motive greatly hinders further breakthroughs. Their foremost concern is related to the overly general scope of the theory, and its lack of specificity, which they thought renders the theory ultimately unfalsifiable. They also criticize the dominant position the theory has come to assume in many fields, which in their view has lead to channelling relevant research along its lines, and ignoring alternative theoretical models.

One point of this criticism focused on ambiguous findings, e.g. the fact that in different situations, death reminders can prompt completely opposite reactions. The critics point out that all of these count as evidence in support of the theory, whereas they would expect more straightforward predictions that are made in advance. This criticism does highlight some important features of the theory and its predictions (for a rebuttal, see also Pyszczynski et al., 2015). The theory investigates highly complex phenomena and proposes some driving forces that are supposed to operate at very subtle levels. Therefore, variability in responses to the awareness of death would be expected. TMT research recognizes the role of both situational and dispositional determinants of terror management processes (Arndt et al., 2004). The exact content of the symbolic defences

to be activated in a particular situation depends on two factors: a. stimuli that are present in the situation (e.g. when national symbols are present, a person can be stimulated to identify with the nation), b. individual values (e.g. an individual who identifies strongly with the nation will further enhance the national identification). In the following, we will review some important moderators of terror management processes, in particular, the relevant cultural and the individual differences.

The central tenets of the theory have also been criticized from the perspective of evolutionary psychology (Leary, 2004; Kirckpatrick & Navarette, 2005; Navarrete & Fessler, 2005). Most pertinent, it has been argued that evolution of a paralyzing terror of death would not be probable since such terror would disrupt goal-oriented behaviour. Even if this potential for terror did evolve, it is doubtful whether an anxiety buffer would ensue, since, firstly, if anxiety is adaptive it would not be logical to want to buffer it and, secondly, simpler solutions (e.g. recalibrating death anxiety to be less intensive) would have been evolutionarily more useful. These authors also discredit the idea of worldviews that shield from anxiety, highlighting that many elements in non-Western and non-Christian worldviews are far from soothing (Kirckpatrick & Navarette, 2005). Evolutionary psychologists have also proposed alternative accounts of mortality salience effects based on a need for affiliation and provision of social support (Navarrete & Fessler, 2005).

However, it is possible that terror of death, as well as the defensive anxiety buffers, have not evolved as such, but that they are by-products of already evolved systems with other primary functions (Kirckpatrick & Navarette, 2005; Pyszczynski et al., 2015). Alternative evolutionary mechanisms that support the anxiety buffer (for instance, several systems that support continued living instead of a global self-preservation instinct) do not invalidate the basic tenets of the theory. Moreover, TMT authors emphasize that evolutionary psychology has not given sufficient attention to the internal environment of the human mind as exerting adaptive pressures that shaped the evolution of mind and culture (Pyszczynski et al., 2015, p. 26). A paralyzing fear of death would indeed not be adaptive since this fear is crucially different from imminent threats in the surroundings in that it has no object and does not lead to favourable outcomes (e.g. heightened arousal). Therefore, TMT authors maintain that a system that shields from

this fear would be warranted, and that evolutionary psychology should further consider the role of the awareness of death in the evolution of mind and culture.

The following point of criticism was that terror management theory does not take into consideration the real-life encounters with death, e.g. in the terminally ill or people with near-death experiences (Martin & van den Bos, 2014). Testimonies coming from these experiences suggest that instead of heightened defensiveness, a dramatic consciousness of death could lead to more constructive reactions, e.g. more tolerant and accepting attitudes towards life. This critique extends to a more general issue of the construal of death and the possibility that a more accepting attitude towards death could lead to more constructive and growth-oriented reactions than those typically revealed by terror management research (Cozzolino, 2006; Mikulincer & Florian, 2002; Vail et al., 2012).

We will breiefly comment on these issues. Firstly, concerning the issue of taking into account the real-life confrontation with death, our understanding of terror management theory suggest that this is not what the theory is attempting to explain. Terror management is concerned with how awareness of death affects life when death is *not* an imminent issue that has to be tackled with. Acceptance of an approaching personal death appears to be a process with its own regularities and other theories have addressed this issue (e.g. Kubler Ross, 1969). These two situations are distinct with regards to psychological distance – accepting one's own death in situations where this is just a topic for contemplation vs. a realistic and imminent prospect seem to be rather different. Recent theorizing has suggested that people construe events that are psychologically near or distant in distinct ways e.g. that differ in abstractness (Trope, Liberman, & Wakslak, 2007). This level of construal, in turn, affects social judgment and behaviour.

Second, the issue of the defensive vs. growth-oriented reactions to awareness of death has been recognized as an important avenue for further research (e.g. Greenberg, 2012). Reminders of death could lead, at least some people, to espouse more growth-oriented personal reactions and more tolerant attitudes towards others. Two important directions for this research could be related to cultural variations (as suggested by e.g. Mikulincer & Florian, 2002), as well as to variations related to age (Maxfield et al., 2007). For instance, contrary to some stereotypical belief, research with older adults has revealed a lack of typical defensive reactions to mortality reminders: the elderly participants had conversely shown more lenient attitudes towards moral transgressors (Maxfield et al.,

2007). Further studies revealed that indeed the elderly, in particular those with unimpaired executive functioning, responded to mortality salience with increased tolerance compared to younger adults (Maxfield, Pyszczynski, Greenberg, Pepin, & Davis, 2012). Construal of death appears to be undoubtedly an important determinant of reactions to mortality reminders. Nevertheless, studying the less constructive and more conservative responses does not become superfluous on the basis of the previous argument. An overly defensive outlook on both self-worth and the value of the own worldviews can have dire consequences for both the individual and the social surroundings as demonstrated by the previous review.

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In the following, we will discuss several of the open issues more thoroughly, including a. the specificity of death awareness versus alternative motives, b. the claim that terror management processes are affect-free, c. individual variability in the functioning of the death anxiety buffer and finally d. cross-cultural applicability of the theory.

Is death a unique concern?

We have already mentioned that the effects of mortality salience have been demonstrated in contrast with different control conditions, as exposure to a range of unpleasant or neutral stimuli, not related to death (e.g. pain, visiting a dentist, exam anxiety; Greenberg, 2012). However, to demonstrate that death awareness has a unique importance it needs to be contrasted with other similar anxieties and concerns sometimes referred to as *existential concerns*.

Several alternative motives have been suggested to awareness of death, e.g. uncertainty (Dechesne & Kruglanski, 2004; van den Bos, 2001, 2009), search for meaning (Heine, Proulx, & Vohs, 2006) or the desire for social belonging (Leary, 2004; Navarrete & Fessler, 2005). We will shortly review some of the research demonstrating the importance of these alternative motives and how they can be contrasted to the role of the awareness of death. However, we will first discuss some of the conceptual distinctions important for the present argument.

Namely, TMT authors do not propose that fear of death or defending oneself from the awareness of death is the one and sole motive essential for social functioning (Greenberg, 2012; Pyszczynski et al., 2015). On the contrary, they recognize that other motives are important and, furthermore, that all of the above-mentioned motives play a

role in the fear of death since this is a multidimensional construct (as suggested by Florian & Mikulincer, 2004). However, they do contend that the crucial aspect of this fear is irreducible to any of the alternative motives, and this crucial aspect is the terror of absolute annihilation, i.e. the fear of not *being* (Pyszczynski et al., 2015). In addition, they suggest that fear of death is a secondary motive, based on psychological structures with other primary functions, and altering their functioning.

We will focus on the role of uncertainty in particular, since this has been recognized as a crucial motivational factor in social behavior by several theories (Brinol, De Maree, & Petty, 2010; De Cremer & Sedikides, 2005; Hogg, 2010; Kruglanski & Webster, 1996; van den Bos, 2001, 2009). Some of the authors suggest that death awareness could, in fact, be conceived of as a fear of uncertainty, for instance about when and where this would happen, what the experience would be like, how close persons would react to this, etc. (Dechesne & Kruglanski, 2004). In support of this, it was found that higher personal need for structure leads to more intense defensive reactions to death reminders (Dechesne & Kruglanski, 2004; Landau et al., 2004a).

Reduction of existential uncertainty has taken the position of the central motive in some theoretical models, most notably the Uncertainty management theory (Lind & van den Bos, 2002; van den Bos, 2001, 2009). This theory offers an alternative account in relation to terror management theory, suggesting that it is not the fear of death but the existential uncertainty that explains most of the people's social strivings. Van den Bos contends additionally that standard death thought inductions also induce the feeling of uncertainty, which is the alternative explanation of the documented effects.

Self-categorization theory, as well as its most recent formulation, Uncertainty-identity theory both recognize the potential of reducing personal uncertainty through identification with social groups as the most basic motivational source (Grieve & Hogg, 1999; Hogg, 2009, 2010; Hogg, Adelman, & Blagg, 2010; Mullin & Hogg, 1998). Uncertainty-identity theory suggests that people do not identify with groups to relieve the fear of death, but because the groups offer them certainty with regard to how to perceive themselves and how to behave. According to this perspective, the most important underlying mechanism is depersonalization: in some situations, social identifications acquire primacy over individual identifications leading the person to define herself primarily in terms of the characteristics of the group (Hogg & Abrams,

2006). This helps the individual to reduce the aversive feeling of personal uncertainty and to secure a clear view of his or her own position in the world.

Even if uncertainty reduction is a rather similar motive, it is clearly distinct from reducing awareness of death – to put it in quite simple terms, the authors of the two theories disagree whether the thing people fear most in their lives is the uncertainty, or the life's one and only certainty – death.

Both of the motives are however complex. Whereas a matter closely intertwined with death awareness is meaningfulness or meaninglessness of being (Baldwin & Wesley, 1996), uncertainty can also be experienced about different issues (Mullin & Hogg, 1996). Since these specific aspects of existential concerns can be distinguished conceptually, it is reasonable to expect their differential effects in different areas of social functioning. However, the studies conducted so far are problematic in at least two ways:

a. Theoretically, distinctions between the existential concerns appear rather artificial in some formulations. For instance, more recent TMT overviews mention existential uncertainty, which refers to the uncertainty of an individual in whether he or she will secure a meaningful existence or will utterly perish with death (Landau et al., 2004a). On the other hand, some authors speak of uncertainty about what happens after death, as an important aspect of personal uncertainty (Hohman & Hogg, 2011) or about the uncertainty as a crucial content in the fear of death (McGregor, Zanna, Holmes, & Spencer, 2001; van den Bos, 2009). The representative theoretical models have thus not been sufficiently clear in making theoretical distinctions between these aspects. Moreover, they have not offered clear directions on how to translate these concepts into operational terms, to be able to disentangle their effects.

b. There are studies in which inductions of uncertainty and death awareness were directly compared, to establish which of the factors is of specific importance to the effects of interest. Findings remain ambiguous, even though the researchers typically applied parallel experimental procedures and inductions. For instance, the induction of uncertainty was designed to be completely parallel to inductions of death thoughts. The most frequent mortality salience induction asks participants to answer two open-ended questions about what emotions the idea of their own death arouses in them and what they think will happen to them as they die. Uncertainty induction is typically introduced

that asks identical questions, save for exchanging the word *death* with the word *uncertainty* (e.g. Landau et al., 2004a; van den Bos, 2001).

However, some of the studies support significant effects of mortality salience in contrast to the uncertainty inductions (Castano et al., 2011; Landau et al., 2004a) whereas others demonstrate significant effects of uncertainty inductions (Hohman & Hogg, 2011; McGregor et al., 2001; van den Bos, 2009). These findings suggest a need to delineate more clearly the two existential concerns and to compare their effects more systematically.

One study offers a model well suited for testing the effects of different existential concerns in a systematic manner (Baldwin & Wesley, 1996). The authors compared three combinations of worries: a. death and meaninglessness, b. death in a neutral, biological sense, a. meaninglessness (without mentioning death). Comparisons of different inductions supported the importance of thoughts of death (regardless of whether they are paired with thoughts about meaninglessness) compared with thoughts about meaninglessness.

In a meta-analytic study, mortality salience inductions were compared with meaning and certainty threats regarding their effects on worldview defence (Martens, Burke, Schimel, & Faucher, 2011). The authors analyzed the differential impact of mortality salience vs. control inductions that entailed a meaning or certainty threat, as a function of the length of delay between the induction and dependent measures. This study clarified the distinction between their effects by demonstrating different temporal patterns: whereas mortality salience effects became stronger with longer delays, the opposite was true of the meaning threats and uncertainty, whose effects lessened with time. The authors suggest that the different types of threats do show similarities in that all can trigger worldview defence. However, the analysis also supports their unique importance in that their effects show distinct temporal patterns.

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Despite the difficulties in reaching a clear demarcation between different concepts and even to a greater extent their operationalizations, in the present study, we will attempt to re-examine this issue by investigating: a. different inductions related to both existential and more everyday concerns, as well as b. introduce a number of different outcome variables to map the effects of these inductions.

The "affect-free" claim

Since the theory proposed the awareness of death and thoughts of death are crucial for the activation of the anxiety buffer system, it was important to show that these are not reducible to simple changes in affective states. Therefore, terror management research typically controls for potential changes in affective states, by measuring positive and negative affect after the experimental inductions. From the first experimental tests, a large number of studies reported null effects of mortality salience inductions on affective reactions (Rosenblatt et al., 1989; Solomon et al., 2004; Pyszczynski et al., 2015).

This has lead to the criticism that terror management theory is, in fact, lacking the *terror* (e.g. Martin & van den Bos, 2014). TMT authors responded in several rebuttals that the crucial point made by the theory is that death awareness causes *potential* for paralyzing terror. The proposed defence systems are aimed at buffering this terror from being experienced consciously in its full strength (Greenberg, 20012; Pyszczynski et al., 2015). Indeed, some recent studies have revealed that when people are prevented from engaging the anxiety buffer, mortality salience leads to heightened anxiety and endangers the subjective well-being (Juhl & Routledge, 2015). For instance, death reminders result in lowered well-being in persons low in self-esteem. Similarly, mortality salience led to a heightened anxiety after a delay (Abeyta, Juhl, & Routledge, 2014) and this effect was found only in persons low in self-esteem.

Furthermore, it has been proposed that post-traumatic stress disorder might be a result of disruptions in the functioning of the anxiety buffer, resulting in an overwhelming anxiety (Pyszczynski & Kesebir, 2011). A traumatic experience shatters the protective mechanisms and yields in a chronic inability to find solace that anything can provide security from personal vulnerability and mortality. In accordance, people with diverse experiences of trauma and high levels of peritraumatic dissociation or PTSD symptoms failed to engage in the typical terror management defences when exposed to mortality reminders (Kesebir, Luszczynska, Pyszczynski, & Benight, 2011; Pyszczynski & Kesebir, 2011). These studies add strength to the contention that people will experience heightened anxiety when proper defences are not available.

Another perspective helps elucidate engagement of affective processes in coping with death reminders. DeWall and Baumeister (2007) demonstrated in several studies that

death reminders lead to an automatic affective tuning – when confronted with thoughts of death, people automatically turn to positive stimuli. At the same time, people do not experience conscious negative affect. The authors suggest that these reactions reflect the functioning of the so-called "psychological immune system" (Wilson, & Gilbert, 2005). Interestingly, they also demonstrated that these responses are rather counterintuitive: while participants expected that they would be experiencing strong conscious affect after confronting reminders of death, this did not happen.

Still, some recent studies have argued that mortality salience inductions do produce affective reactions. Lambert and associates (2014) re-analyzed the data from previous studies and concluded that they did not meet minimal criteria for observing affective reactions. In their opinion, a distinction should be made between fear and anxiety. Since thoughts of death are related to an identifiable threat, that is perceived as inevitable, they should hence provoke fear rather than anxiety (this was also empirically supported, Lambert et al., 2014).

Lambert and associates also conducted further experiments, which employed a procedure more attuned to testing affective reactions. Here, they applied a more fine-grained analysis, based on distinct indices of fear and anxiety. Both direct affective measures and content analysis of participants' responses, suggested that reminders of death lead to slightly raised self-reported negative affect related to fear (and not anxiety). Interestingly, including these affective reactions in meditational analyses yielded complex patterns. On the one hand, it has been shown that this affect partly mediated the effects of mortality reminders on a decrease in self-esteem. Conversely, mortality salience induced heightened self-esteem, a reaction that was not affectively mediated. Worldview defence, in the form of in-group favouritism, was not mediated by fear. Following from this, the authors suggested that mortality salience could induce complex reactions, with a distinct *threat* and *buffer* components. Whereas the first component is affectively driven, the latter is not.

Lambert and associates point out that this is not merely a methodological matter, but has significant implications for the claim that fear of death is a unique threat, among myriad other possible sources of fear and anxiety. Namely, the reported lack of affective reactions has been one of the arguments for the specificity of this threat. Since this argument has been undermined, the authors feel that this claim has lost some of its

validity. Moreover, they interpret the findings as suggestive of at least a partially conscious reaction to mortality salience inductions. The authors further propose bringing together terror management research and the research on the effects of emotions and mood on socio-psychological phenomena (e.g. Bodenhausen, Sheppard, & Kramer, 1994; Forgas, 1994).

In the latest review of the theory, the authors also addressed this issue (Pyszczynski et al., 2015). They suggested that various inductions could differ in their intensity, which could be related to affective consequences – namely, whereas affective reactions can follow some particularly strong inductions, others could still be affect-free.

In the present study, we will also measure basic affective reactions and test for potential mediation of the mortality salience effects. The main goals of the study are not related to a detailed investigation of the underlying processes. However, we will investigate the basic affective reactions for reasons of their relevance for a complete understanding of the functioning of the anxiety buffer.

Individual differences in terror management

Although terror management theory proposes fundamental motivations and processes that are universally human, this does not entail a lack of individual variations. Each person responds to the basic human condition in an individualized fashion (Arndt et al., 2004; Yalom, 1980). It has been established that several individual difference variables can affect how a person constructs an individualized version of the worldview and how he or she reacts to reminders of death. Some of the relevant individual difference variables revealed in the previous research are self-esteem (Harmon-Jones et al., 1997), political orientation (Greenberg et al., 1992a), attachment style (Jonas & Greenberg, 2004), and need for closure (Dechesne & Kruglanski, 2004; Landau et al., 2004a).

In this study, we opted to investigate the role of two very essential moderators: the chronic level of an individual's self-esteem and general anxiety. Further investigation of the role of state self-esteem as a potential moderator is warranted, due to conflicting findings. On the one hand, persons with low self-esteem could be particularly inclined towards using defensive strategies, since they lack the long-term protective effects of the self-esteem buffer system (Harmon-Jones et al, 1997; Schmeichel et al., 2009). Conversely, persons with high self-esteem sometimes exhibit more intense defensive

reactions. Since they generally invest more in maintaining a positive self-image, this could sensitize them to threats related to this image (Baldwin & Wesley, 1996). Schmeichel and associates (2009) found that particular sensitivity could be observed among persons with a combination of high explicit and low implicit self-esteem. Although previous studies clearly support the importance for self-esteem in terror management processes, its role should be further clarified. The specificity of the present cultural context and the variations in individualism as a value orientation highlights the importance of this matter.

On the other hand, the moderating role of general anxiety in reactions to death reminders has not been previously investigated within terror management research, to the best of our knowledge. However, it was found that mildly depressed individuals react with even more intensified worldview defence to mortality reminders (Simon, Greenberg, Harmon-Jones, Solomon, & Pyszczynski, 1996). This finding suggests that some characteristics of the mental health status could be related to the functioning of the death-anxiety buffer. More specifically, the authors suggested that mild depression could be based in a result of detachment from cultural values and a resulting feeling of meaninglessness.

Anxiety can be conceptualized as an emotional state or as a personality trait (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1977). Trait anxiety has been shown to influence social judgment (Lerner, & Keltner, 2000; 2001), for instance, people high in trait anxiety reported less optimistic perceptions of future events and perceived various events as less controllable.

Moreover, some theorists propose that the general level of anxiety can be fundamentally related to coping with the fear of death. For instance, Yalom (1980) suggested that a nameless anxiety (i.e. fear of not being) is being transformed to fear of concrete objects and situations since it becomes easier to handle in this way. A fear of spiders or social situations, for example, is more bearable than fearing death, i.e. not being. In support of this, global anxiety was found to be significantly related to more specific measures of fear of death (Neimeyer, Wittkowski, Moser, 2004). Feifel (1990) suggests that, since fear of death is rarely experienced consciously, other fears frequently mask the fear of death.

Drawing on these findings, it can be argued that persons generally prone to anxiety have a number of concepts related to different aspects of worries and concerns chronically highly accessible in the cognitive system. If the death construct is in some way related to these constructs, and thus also highly available, this could lead to more pronounced defensive reactions among the individuals with higher trait anxiety.

Cross-cultural applicability of terror management theory

Since the theory proposes some fundamental psychological motives and processes, it pertains to quite a high level of generality. Some authors (e.g. Mikulincer & Florian, 1997) challenge the basic ideas of terror management theory from the cross-cultural stance. They suggest that in cultures embracing different religious views and value orientations, the validity of TMT propositions could be an issue. For instance, they argue that in some cultures, living up to cultural standards might be important in its own right, rather than a means of self-transcendence. Namely, in some collectivistic societies where the collective is valued above the individual, defending the collective could even require the individual to sacrifice his or her self-image (or even life), when the individual and collective goals are in conflict.

Terror management theory has thus far been empirically tested primarily in the USA and the countries of Western Europe that can be considered a part of a common cultural space, e.g. the Netherlands (Dechesne, Greenberg, Arndt, & Schimel, 2000; Dechesne, Janssen, & van Knippenberg, 2000; Wisman & Koole, 2003), Austria and Germany (Jonas, Fritsche, & Greenberg, 2005; Jonas & Greenberg, 2004). The theory has also received some cross-cultural support, with the most systematic research programme outside of the Western countries conducted in Israel (e.g. Florian, Mikulincer, & Hischberger, 2001; Mikulincer, Florian, & Tolmacz, 1990; Taubman Ben-Ari, Florian, & Mikulincer, 2000).

The support for the cross-cultural validity of the TMT propositions has been widened during the most recent decade. Several studies have been conducted in the Eastern cultural context, e.g. in Japan (Heine, Harihara, & Niiya, 2002; Kashima, Halloran, Yuki, & Kashima, 2004) and China (Du & Jonas 2004; Routledge, Juhl, Vess, Cathey, & Liao, 2013; Zhou, Liu, Chen, & Yu, 2008). TMT research has also been conducted in Australia, one of which included the native Aborigines (Halloran & Kashima, 2004). In addition, a smaller number of studies were conducted in the predominantly Muslim

countries: Turkey (Kökdemir & Yeniceri, 2010; Yavuz, & Van den Bos, 2009) and Iran (Pyszczynski et al., 2006). Other studies investigated terror management in Africa, more specifically, Ivory Coast (Chatard et al., 2011; Chatard et al., 2012).

What has the existent cross-cultural research shown with regards to the general applicability of terror management theory? In terms of the two central components of the cultural anxiety buffer, a review of the cross-cultural research suggests that the role of cultural worldviews in alleviating the fear of death has received a more unambiguous support than the role of its second component: self-esteem strivings, as will be shown in the following.

In some aspects, the cultural anxiety buffer has been demonstrated to operate in much the same manner in Eastern cultures as in Western. For instance, in one study Chinese participants who were reminded of death expressed greater opposition towards the governmental measures of restricting the number of children (Zhou et al., 2008). This finding was interpreted as support for a core terror management motivation of the desire for offspring.

The basic operation of worldview defence was also supported in Turkey, a predominantly Muslim country (Kökdemir & Yeniceri, 2010). Students who were reminded of death responded with a defence of the in-group and out-group derogation, both related to a university identity and to the national and religious identity. Interestingly, among other effects, the authors found that mortality reminders increased the appeal of cooperation with Turkmenistan, which was interpreted as a mere semantic in-group favouritism (i.e. since the word *Turkmenistan* begins with *Turk-*).

A line of research conducted in Israel by Victor Florian and Mario Mikulincer further supported and extended the basic tenets of terror management theory, by demonstrating the role of close attachments to other people in alleviating the fear of death (Mikulincer, & Florian, 2000; Mikulincer, Florian, & Hirschberger, 2003).

Of particular importance are also the studies that investigated operation of cultural anxiety buffers in individualist and collectivist cultures, for instance, in Australia and Japan (Kashima et al., 2004). Whereas Australians who were reminded of death showed heightened embracing of individualism, the opposite was true of the Japanese participants. Mortality reminders lowered acceptance of individualist values among Japanese participants, which can be related to the less prominent position of this value

orientation in Japan. The study thus revealed opposite reactions in cultures with differing value systems, which corroborates the assumptions of the theory.

Now turning to the more problematic issue of the role of self-esteem, several studies suggested that this component of the cultural anxiety buffer cannot be supported or that there are considerable qualifications to its assumed functioning. In a study conducted in Japan (Heine et al., 2002) the role of self-enhancement as a defensive mechanism to death reminders was not supported. Whether or not people from Eastern cultures self-enhance has been a point of much debate in the social-psychological literature (e.g. Heine, Lehman, Marcus, & Kitayama, 1999). If protection and enhancement of individual self-image is not a culturally supported endeavor, perhaps defences against death awareness are structured along different lines?

In support of this contention, one study revealed that mortality reminders heightened identification with the nation in Chinese, but not American participants (Routledge et al., 2013). In follow-up experiments, the authors supported the assumption that the effects were driven by interdependent self-construal, characteristic of the Eastern cultures.

In a cross-cultural investigation of the role of self-esteem in terror management in Austria and China, the authors proposed that different aspects of self-esteem could be of relevance in the two cultural contexts. In contrast to the individual self-esteem, that is highly valued in Western countries, it could be that collective or relational self-esteem (derived from close relations) are more important for Easterners (Du et al., 2013). The study found that relational self-esteem moderated defensive reactions to mortality reminders in the collectivist culture (i.e. China) while individual self-esteem played this role in the individualist society of Austria.

Another line of research supported the role of salient cultural norms (Du & Jonas, 2014). Chinese participants were reminded of death and, directly afterwards, of the dominant cultural norm of being modest. They were then explicitly instructed to self-enhance (by focusing on how they are better than their friends). When the dominant cultural norm of modesty was made salient after the induction of death thoughts, Chinese participants lowered their self-enhancement tendencies, which resulted in lowered implicit self-esteem. In another study with a parallel design, participants could spontaneously choose whether to self-enhance or self-efface. This study found null

effects and these findings could be interpreted as suggestive of a motive conflict. Participants could have been incited to enhance their self-image by the mortality salience induction, but were at the same time reluctant to do so when the modesty norm was also made salient. The study suggests that protecting the cultural norms might be more important than defending the individual self-image in cultures where the collective is valued more than the individual.

Taken together, the cross-cultural studies and the studies from non-Western cultures corroborate the general validity of the terror management theory. In addition, they highlight some alternative strategies that might be employed in terror management in non-Western societies that stem from the specific value systems endorsed by these societies. The terror management role of self-esteem and the relation between the cultural worldviews and self-esteem appear to be of particular relevance for a cross-cultural perspective.

It is interesting to note that terror management theory has also been successfully applied to investigating some specific issues in non-Western cultural contexts. For instance, Gilad Hirschberger and his colleagues examined the role of terror management processes in the continuation of the protracted conflict between Israelis and Palestinians (Hirschberger & Ein-Dor, 2006; Hirschberger, Pyszczynski, & Ein-dor, 2010). In these studies, mortality reminders enhanced non-constructive beliefs related to the conflict, e.g. perceiving the conflict in simplified terms, opposing efforts at reconciliation and supporting violent means of conflict resolution. In addition to supporting mortality salience effects, it was also shown that collective reminders of death had a stronger effect than individual. Hirschberger argues that the cultural worldview accepted by Israeli includes a collective perception of being at risk of annihilation as a nation, still present ever since the experience of the Holocaust. This perception gives rise to a feeling of existential uncertainty, which fuels the support for maintaining the violent conflict in the Middle East. This study both supports and validates the propositions of terror management theory and adds a local perspective that enriches the theory.

It is apparent from this short review that the region of Eastern and South-Eastern Europe, the Western Balkans in particular, has not yet received a proper treatment within terror management research. This region is characterized by a number of cultural specificities, most prominently related to experiences from recent, 20th century, history.

Dealing with the dramatic experiences could have affected the formation of cultural anxiety buffers. On the other hand, the dominant value systems in this region have some elements of both Western and Eastern values (Oyserman, Coon, & Kammelmeier, 2002), and have been undergoing transitions and restructurings in recent decades. These characteristics make this region appealing for an application of the terror management perspective.

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We have reviewed some criticisms and issues that warrant future research within terror management theory. We have also highlighted how the present studies will contribute to the ongoing debates. In the following, we will delineate an alternative framework which the current studies will be based on, drawing from the traditions of research on self and social identifications.

IV. An alternative conceptualization of the anxiety buffer: personal and collective self-enhancement

> *"An animal who gets his feeling of worth symbolically has to minutely compare himself to those around him, to make sure he doesn't come off second-best."*
>
> (Ernest Becker)

Decades of research on the self have converged on the conclusion that people are extremely inventive in finding and using various strategies aimed at protection and enhancement of a positive self-image (Alicke & Sedikides, 2009; Dunning, 2005; Greenwald, 1980; Kunda, 1990, 1999; Sedikides & Gregg, 2003, 2008; Stevens & Fiske, 1995; Swann, & Bosson, 2010; Taylor & Brown, 1988, Tesser, 2000, 2001, Von Hippel et al, 2005). However, an exhaustive categorization of these strategies or in the least their types is yet to be crafted.

Similarly, there is no consensus on the terminology used, so that the various kinds of perceptions, thoughts, feelings and behaviours aimed at maintaining a positive self-image, are being termed differently. An illustrative remark on this issue was given by Tesser, referring to the various self-regulation strategies as *the self-zoo* (Tesser, 2000, 2001). In his opinion, it is not even possible to make a representative sample of these strategies. A crucial characteristic of the different strategies is their interchangeability and Tesser proposes that we can talk about a unified system of self-esteem maintenance, which is flexible in the processes and strategies it uses (for a similar concept of fluid compensations, see Steele, 1988).

In the following, we will propose a categorization of self-enhancement strategies based on the essential tenets of the social identity approach (Hogg & Abrams, 1998; Tajfel, 1974, 1982; Turner, Oakes, Haslam, & McGarthy, 1994). Within this approach, a basic distinction is made between individual and social identities in an individual's self-concept. Personal identity defines an individual through differences in relation to other people while belonging to different social groups or categories makes the basis of a person's social identities. Following this, we will distinguish between strategies of self-

enhancement that are focused on the individual identity and those aimed at social identifications, i.e. the collective aspect of self-image. We believe that applying this framework affords adding clarity to the conceptualization of the cultural anxiety-buffer system. We will attempt to select several representative strategies in both domains, which would allow testing the assumptions of TMT.

Individual self-enhancement strategies

We will define individual self-enhancement strategies as biases in the processing of the information relevant to self. This is a general concept, including both strategies aimed at self-protection (Stevens & Fiske, 1995) and self-enhancement (Sedikides & Gregg, 2003, 2008), since this distinction is not relevant from the TMT perspective. Having in mind that we wish to test whether inducing thoughts about death would intensify these strategies, we will select some of the strategies that fulfill following criteria: a. they have a strong empirical support, b. they are global rather than narrow in scope. Global strategies of self-enhancement should allow detecting the rather subtle and implicit effect of the core anxieties, since they are at a roughly matched level of construct generality. Our idea is to investigate several strategies organized according to the time dimension – strategies aimed at the present self-image, as well as those related to perceptions of the own past and expectancies of the future. Following Tesser's propositions about a global self-enhancement system, we will also investigate relations between the selected strategies and whether they reflect a single underlying dimension.

The above-average effect reflects the belief of an individual that he or she is better than an average member of a referent group in terms of various activities and abilities (Taylor & Brown, 1988; Sedikides & Gregg, 2003; Alicke & Govorun, 2005; Loughnan et al., 2010). From a nearly million American students who were administered intelligence tests in 1976, 70% thought that they possessed above-average leadership abilities and as many as 85% thought they are above average at getting along with other people (Alicke & Govorun, 2005).

The findings are not to be thought of as an expression of self-promotion propensity typical only of students – another study demonstrated that college teachers are not

immune to this effect so that as many as 94% expressed a belief that their teaching skills are above average (Cross, 1977). Why would this be considered a bias? While it is possible that a specific individual is indeed better than the average at a certain trait, it is not reasonable to assume that the majority of people would be above the average (based on the assumption of normal distribution of most psychological traits). The effect is studied at the individual level by asking participants to compare themselves with an average peer on a series of traits. Scores considered indicative of the effect are those that deviate from the theoretical midpoint of the scale, both in the positive direction (e.g. highly above the average) for positive traits, and, conversely, in the negative direction (significantly below average) for negative traits (Alicke & Govorun, 2005).

Some authors propose that adjusting the definitions of traits in a self-serving manner could explain the above-average effect (Beauregard & Dunning, 2001; Dunning, 2005; Dunning, Meyerowitz, & Holzberg, 2002; Wentura& Greve, 2004). For instance, difficult questions from a general information test that a person succeeds in solving are considered more diagnostic of erudition than those that are not solved (Wentura & Greve, 2004). Individuals describing themselves as dominant ascribe a more positive meaning to the dimension of dominance; diligent students believe that a high number of working hours per week is a more important criterion of commitment than those working less hard (Dunning, 2005).

Consequently, people can truly believe that they are better than others, as long as they define their abilities and traits in a favourable manner, so it matches those characteristics and behaviour they personally exhibit.

Unrealistic optimism (Weinstein, 1980; Helweg-Larsen & Shepperd, 2001; Taylor & Brown, 1988) refers to the tendency of people to believe that it is more likely that they will experience favourable events in the future, and less likely they will experience unfavourable events, in comparison to other people. For instance, people believe that their own chances of being satisfied with their job, having a harmonious marriage or gifted children are higher while chances of experiencing a traffic accident or serious disease are lower than for „an average other".

The research has documented various expressions of this bias, in people of varying age and education levels. For instance, people are usually convinced that their risk for a host

of potentially dangerous situations is lower than for other people. Smokers consider smoking-related health risks to be lower for themselves than other smokers (Weinstein, Marcus, & Moser, 2005). Bikers believe that their odds of being involved in an accident are lower than for other bikers (Rutter, Quine, & Albery, 1998). Women who had been victims of family violence estimate the risk of going back to the perpetrator as lower for themselves than other women in the same situation (Martin & al., 2000).

Equivalent perceptual distortions in a self-serving direction can be found at the opposite pole of the time axis, referred to as **memory biases**. Research offers strong support for the role of autobiographic memory in self-image protection and enhancement (Greenwald, 1980; Kunda, 1990, 1999; Ross, McFarland, & Fletcher, 1981; Sedikides & Gregg, 2003; Wilson & Ross, 2003; Žeželj, 2012).

Greenwald (1980) describes the ego as a historian who fabricates and revises an individual's history in a manner comparable to the reconstruction of the past performed by totalitarian regimes. When motivated to maintain a positive self-image, people are biased in retrieving self-relevant knowledge – this goal increases the availability of memories and other cognitive structures that support the preferred conclusions (Kunda, 1990). To name just a few examples, people retrieve more easily the events that speak in favour of their desired self-perceptions (Brunot & Sanitioso, 2004), overestimate past performances (Žeželj, 2012), and more easily forget unfavourable information, as negative feedback (Green & Sedikides, 2004). In addition to believing that they have been better than others in the past, present and will be in the future, people also hold a belief that they are constantly improving. They believe they have improved more than others in the past and that they will improve even more in the future (Kanten & Teigen, 2008; Ross & Wilson, 2003).

Another aspect of memory biases could be relevant in this perspective. Namely, the issues of **temporal continuity** and coherence in self-concept have been directly addressed within TMT. Thinking about death enhances the tendency to have a coherent and clear structure of the self-concept (Landau, Greenberg, Sullivan, Routledge, & Arndt, 2009). This tendency could be expressed in the perception that own experiences from the past are more related to the present self-image after being reminded of death. Participants reminded of death also tended to relate positive memories to the present self-image to a greater degree than those in the control situation. Based on this finding,

we will also investigate the perceptions of personal continuity as a segment of the memory biases.

Collective self-enhancement strategies

Scholars engaged in social identity research have examined a series of phenomena representing important aspects of identification with social groups: social categorization, in-group and out-group perception biases, perceptions of entitativity (unity) of in- and out-groups, group stereotypes, self-stereotyping, i.e. the tendency to perceive oneself in accordance with the stereotypes of the group, identification with groups etc.

Some of the previous studies attempted to make distinctions between these various phenomena. For instance, it has been demonstrated that identification with a group is a similar, yet a clearly distinct construct in relation to self-stereotyping, the tendency to ascribe oneself traits stereotypical of the group (Latrofa, Vaes, Pastore, & Cadinu, 2009; Spears, Doosje, & Ellemers, 1997; Ellemers, Kortekaas, & Ouwerkerk, 1999). Other researchers did not elaborate on the distinctions, but instead treated the different variables as aspects of a composite measure of in-group identification or used them interchangeably, i.e. measured one construct through some of the other variables (Burris & Jackson, 2000; Castano, 2004; Reid & Hogg, 2005). In the present study, we decided to select a number of these variables based on several criteria: a. the variable has been well documented in previous research, b. there is a clear definition of the underlying construct that is possible to delineate from theoretically similar constructs, c. the variable is sufficiently general that it can be applied to the present research paradigm. We will also explore the relations between different constructs by means of factor analysis.

Self-stereotyping (Spears et al., 1997; Sinclair, Hardin, & Lowery, 2006; Simon & Hamilton, 1994; Latrofa et al., 2009) designates the tendency to perceive oneself in terms of group prototypes, i.e. to ascribe oneself traits considered stereotypically related to the group.

The strength of in-group identification reflects the strength of belief that being a member of a group is important for how a person perceives oneself (Castano, 2004; Hogg, 2009, 2010; Spears et al., 1997; Turner et al., 1994).

61

Perception of group entitativity (Castano, Yzerbyt, Paladino, & Sacchi, 2002; Hogg, 2010; Hogg, Sherman, Dierselhuis, Mainter, & Moffit, 2007) refers to the perception that the group is characterized by clear boundaries and membership criteria, internal homogeneity, interaction, clear internal structure, common goals and a common destiny.

Group stereotyping reflects the perception of relatedness between membership in a group and certain traits. The probability that a group member will be characterized by traits stereotypical of the group is perceived as higher than traits not stereotypical of the group (McCauley & Thangavelu, 1991; Sinclair et al., 2006).

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The studies on social identifications have raised some issues that are of particular interest for the present study: a. the potential of different social identifications to fulfill an ego-protective role, b. the link between social identifications and a positive self-image.

a. An important insight from Castano and associates' line of research is that different social identifications differ in their capacity to assuage existential concerns (Castano et al., 2004). For instance, a distinction can be made between social categories, as gender or ethnicity, and what can be termed "loose associations", such as being a student of a university. One of the identifications most suited for this purpose should be identification with the ethnic/ national group, as suggested by Castano. There are several relevant characteristics of these groups that can be of importance: ethnic groups have a temporal continuity that is a pledge of continuity and transcendence of the individual existence (cf. Crocker & Luhtanen, 1992). Another characteristic of these groups is that their boundaries are not easily permeable, i.e. this is not an identity that is easily changeable (Dechesne et al., 2000). This characteristic could be of particular importance in the present context, since the ethnic identity is conceived of as an identity one is born with, and that is virtually not possible to change (Milošević Đorđević, 2007). This should make the ethnic identity particularly well-suited to make the basis of the cultural anxiety buffer.

To the interest of the present argument, we have previously conducted a study to test the effects of death reminders on identification with the group of psychology students (Branković & Žeželj, 2013). The importance of this identification among students is reasonable to assume, and it has also proved to be the most frequently named social

identification (in over 60% of cases) in an open-ended task given to a sample of psychology students ($N = 38$). In the experiment, we reminded participants of death, life uncertainty or exam anxiety, distracted them, and then took measures of identification with the group, stereotypes of the group, as well as self-stereotyping. The inductions did not make significant effects, but we found a moderating effect of the level of anxiety – the more anxious participants were, the more strongly they tended to tie to the group. The findings suggest the importance of the particular group identification that is being studied. Perhaps student identification, albeit important for students, did not afford the anxiety-buffering capacity for our participants. Therefore, we decided to test whether ethnic identification could fulfill this function in the present study.

b. Within the framework of TMT, it is postulated that mortality salience would strengthen in-group identification only to the extent to which it has the capacity to enhance a positive self-image of the individual. This account has received empirical support (Arndt et al., 2002; Dechesne, Janssen, & van Knippenberg, 2000). For instance, Jamie Arndt and associates found that Hispanic-American participants disidentified with the national group after being reminded of death and presented with a depiction of a member of their group engaging in undesirable behaviour (dealing drugs). In the study conducted by Dechesne and associates (2000), the choice between defending the in-group vs. distancing from the group after death reminders depended on the extent to which participants valued maintenance of the identity (through the personal need for closure) and the perceived permeability of group borders.

This idea that appeal of a group depends on its affordance of a positive self-image is in line with social identity approach, which defines self-esteem striving as the basic underlying function of social identifications (Hogg & Abrams, 1998). The research on self-stereotyping also demonstrated that this tendency can be selective i.e. confined to embracing positive traits while the negative ones are being projected to more abstract groups (Biernat, Vescio, & Green, 1996; Yang & Hong, 2010).

However, some studies have found opposite effects – mortality salience effects were, for instance, found only for acceptance of the negative group traits (Castano et al., 2004). A distinct and negative social identity can in some situations be preferred to a lack of distinctiveness. One study showed that Polish participants identified with the national stereotypes even if the national identity was not positively evaluated (Mlicki &

Ellemers, 1996; cf. Pickett, Bonner, & Coleman, 2002). Previous research also found that an enhanced acceptance of a negatively valued identity is characteristic for marginal and minority groups in particular (Latrofa et al., 2009), especially when inter-group boundaries are not permeable.

An enhanced acceptance of negative characteristics of a group as descriptive of the self can be considered a particularly compelling argument for the importance of social identifications. It is presumed that a positive (individual) self-perception is being sacrificed in these cases. This proposition can, on the other hand, be challenged from the perspective of social identity theory. Namely, negative aspects of identity can be temporarily embraced to secure that the identity taken as a whole would provide a positive source of identification in the long-term. In the present study, we will, therefore, investigate the conflicting hypotheses stemming from these two lines of research: whether after thinking about death participants will show an increased tendency to accept (a.) only positive characteristics or (b.) both positive and negative traits of the group as descriptive of the self.

V.   The present study

There are several important issues to be investigated in the present study, which follow from the previous discussion. We will briefly summarize them along with the contributions the study aims to achieve.

(a) Based on the previous discussion of uncertainty reduction and protection from death awareness as competing accounts of a number of social behaviours, in the present study we will re-examine the issue. We will include several inductions in the experimental design through which we will attempt to clearly distinguish thoughts about death, life uncertainty and exam anxiety. The design will thus allow testing whether mortality salience has significant effects compared to other existential (uncertainty) or more everyday (exam anxiety) concerns. Reminding participants of examination anxiety has been used as an aversive control condition in previous experiments and has been included in the present research design as an aversive condition relevant for students (a detailed description of the procedures will be provided in the Methods section). On the other hand, by investigating several outcome variables within both individual and collective self-enhancement, we will be able to test for potential differential effects of the inductions.

(b) If we seek to investigate whether awareness of death is an important basic motive for maintaining and enhancing a positive self-image it is important to examine a larger variety of self-enhancing strategies and offer clearer theoretical distinctions between them. We propose a distinction between individual and collective enhancement strategies, which can be traced back to the postulates of social identity theory which affords a clear and systematic theoretical foundation. Furthermore, this approach enables us to combine the terror management perspective with two productive research traditions, one being the research on self-enhancement and protection and the other research on social identifications. In this manner, mortality salience effects can be further investigated and generalized while at the same time enriching the literature on positive self-image strivings, clearly documenting their ego-protective function (Alicke & Govorun, 2005).

In addition, different self-enhancing biases have usually been studied separately. Apart from the research on inter-changeability of pairs of these strategies, their more general relations are seldom investigated. We will therefore explore whether different self-enhancement strategies are distinct or they represent manifestations of the same underlying global tendency. More concretely related to the present context, would a person reminded of her own finiteness succeed in diverting these thoughts by assuring herself that she possesses an above-average level of important qualities or would there also be the need to convince herself of favourable future prospects?

(c) Another contribution of the present research programme is investigating the role of potential moderator variables affecting reactions to mortality salience. Although it would be difficult to find a trait that is more commonly humane than facing the fear of death, there could still be individual differences in the reactions to death reminders (Harmon-Jones et al., 1997; Landau et al., 2004a). In this context, we can argue that the chronic level of an individual's anxiety and self-esteem could significantly affect the defensive reactions. Individuals prone to anxiety could be less successful at coping with the awareness of death, which could lead to stronger defensive reactions to death reminders (Niemeyer et al., 2004; Yalom, 1980).

Further investigation of the role of state self-esteem as a potential moderator is also warranted, due to conflicting findings (Baldwin & Wesley, 1996; Harmon-Jones et al., 1997; Schmeichel, 2009). The issue of whether high self-esteem leads to more or less pronounced defensive reactions requires additional scrutiny.

(d) The present study is, to our knowing, the first attempt to validate the basic assumptions of terror management theory in Serbia, and, more generally, in the region of Western Balkans. Since the theory aspires to gauge some fundamental aspects of socio-psychological processes, we expect its general validity to be confirmed. However, given that the region makes a specific socio-cultural context and that the proposed anxiety-buffer system is of cultural origin, some specificity may appear in its functioning. Studies done in countries with different cultural backgrounds have not been able to fully replicate the findings from the USA (Heine, Harihara, & Niiya, 2002) and this could be related to the values embraced within the culture. The additional benefits of studying terror management in a post-conflict society are thus two-fold: the findings

would help to further test the theory and its universal validity, as well as cast light on the social events from the previous decades.

Study overview

Since the current set of studies is designed as a first systematic test of terror management theory in a novel cultural context, we opted for a combination of deductive and inductive approach in developing the overarching research design. In the first phase of the research, we conducted the basic tests, i.e. investigated the effects of mortality salience on individual and collective enhancement, as well as the operation of the proposed moderators. In the second phase, we used these findings to define more precise research questions that needed to be addressed. For sakes of clarity and fair reporting of the research flow, we will detail these issues and the further hypothesis in the presentation of the final experiment.

Research goals

1. Investigate the effects of mortality salience on different individual and collective self-enhancement strategies.
2. Investigate whether it is possible to disentangle the effects of mortality salience from other aversive contents – other existential concerns (life uncertainty), as well as the more everyday types of anxieties (exam anxiety) on strategies for protection and enhancement of a positive self-image.
3. Investigate the relations between proposed individual and collective self-enhancement strategies: whether there is a global enhancement strategy in each of the domains or there are several related strategies.
4. Investigate potential moderator effects of trait anxiety and self-esteem on reactions to death reminders.

Hypotheses

We will formulate several hypotheses based on the previously presented arguments:

H1: Mortality salience will intensify self-enhancement strategies compared with the control conditions (Pyszczynski et al., 2004, Burke et al., 2010).

We will test a strong and a weak form of the hypothesis:

Weak form: Effects of mortality salience will be observed in comparison with a control situation that involves thinking about neutral contents (without affective value).

Strong form: Effects of mortality salience will be observed in comparison with a control situation that entails thinking about uncertainty or exam anxiety (Baldwin & Wesley, 1996; Castano et al., 2011; Landau et al., 2004a; Rosenblatt et al., 1989).

H1.1 We expect that mortality salience will lead to an enhanced tendency to collectively self-enhance expressed through: enhanced perceptions of group unity, identification with the group and perceiving the characteristics of the group as descriptive of oneself.

H1.2. We expect that mortality salience will lead to a more pronounced tendency to self-enhance expressed through overrating one's own positive and underrating negative traits, positivity of autobiographical memory, the perception of continuity in personal history, as well as expecting favourable personal events in the future.

H2: We expect that reminders of death will lead to stronger tendencies to self-enhance in persons with:

a. higher self-esteem (Baldwin & Wesley, 1996; Baumeister et al., 1996; Taylor & Brown, 1988)

b. higher level of state general anxiety, based on the assumed chronically high availability of death-thoughts that would be activated more easily (Feifel, 1990; Nimeyer et al., 2004; Yalom, 1980).

Method

To test the research hypotheses, we conducted a series of five experimental studies. Since effects of mortality reminders are being explored for the first time in this cultural context, we conceived of the process as learning from each study and incorporating the insights into design of the next one. The first study (Experiments Ia and Ib) was devised to develop and pre-test the experimental materials, and the remaining studies tested the effects of mortality salience inductions. We explored whether mortality reminders would induce collective self-enhancement by strengthening ties with an important social group, i.e. the ethnic group (Experiment II). We further examined the effects of mortality thoughts on individual-level self-enhancement strategies (Experiment III). To cross-validate and extend on the findings, we conducted an additional experiment, as a more stringent test of effects of mortality concerns on individual self-enhancement (Experiment IV). Lastly, we sought to directly compare the individual and collective strategies within a common paradigm and investigate potential moderators of their use (Experiment V).

For reasons of clarity, the general methodological framework will be first presented, and then we will proceed to presenting the experiments and their results.

Research procedures and participants

The research was conducted in several phases.

- The first phase encompassed development of experimental inductions and their pretesting. In this phase we also developed scales for measurement of dependent as well as moderator and mediator variables. Instruments were translated and adapted from foreign models and their psychometric properties were tested, as reported in the following.

- In the second phase, we tested the effects of mortality reminders on collective (Experiment II) and individual (Experiment III) self-enhancement strategies. The logic behind this was to first test the basic tenets of the theory and establish which strategies can serve terror management functions. To remove possible confounds and discount alternative explanations for the results, we replicated the third experiment using different manipulation and control (Experiment IV).

- In the third phase Experiment V was designed to answer the issues raised by previous experiments and to provide a more thorough account of the phenomena studied (since the experiment was designed after the previous studies had already been conducted, we will present its rationale and hypothesis after the other studies).

Each of the experiments followed a specific procedure that will be detailed in the next section. The general research paradigm applied was **mortality salience paradigm** (Rosenblatt et al., 1989). Inducing a person to think about death should boost the search for protection from the burgeoning awareness of death. Following this logic, participants were first presented with mortality reminders, which induced contemplation of own mortality. After filler tasks, measures of dependent variables are elicited to document the possible protective strategies engaged in by participants. The procedure is schematically presented in Figure.

Figure 2

Procedure of the experiments
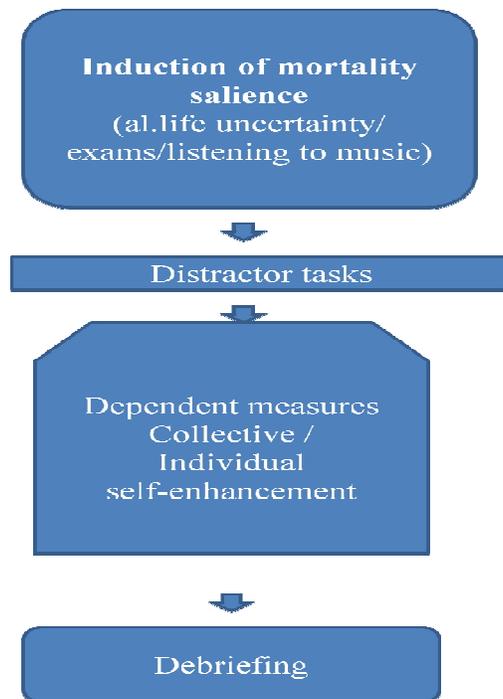
Experiments took place in laboratories / separate rooms allowing psychological testing at the Faculty of Philosophy and the Faculty of Media and Communications in Belgrade, Serbia. Participants were tested either using paper-and-pen questionnaires or electronic testing on portable personal computers (Experiments Ia, II and V). Testing was conducted in small groups from 2 to 6 participants at a time. Researcher or assistant welcomed the participants, administered the questionnaires and provided debriefing. Participation was voluntary and the students were in most cases compensated with course credit for participation.

Given the sensitive topic, participants read and signed an informed consent form prior to testing, which provided the basic information about the topic and purposes of research. They were informed that they have the right to withhold from participation at any time and that the experimenter would answer any questions. Since informing participants of the precise nature of research goals would disrupt the processes we sought to investigate, we provided general information and also a detailed debriefing, either personally at the end of experiments, or in larger groups shortly afterwards. Most of the participants were personally approached by the experimenter after having handed in the questionnaires, and asked whether they experienced any discomfort or would like to share some impressions. None of the participants reported experiencing any discomfort. Some of them even expressed interest in learning more about the topic, so they were provided with relevant literature. Group feedbacks also served to discuss the experiences of the participants regarding awareness of death and terror management mechanisms.

Participants were recruited among students of psychology, media and communications, archaeology and digital arts from the Faculty of Philosophy and the Faculty of Media and Communications in Belgrade. Number of participants per experiment is presented in Table 1. Participants were randomly assigned to experimental conditions, resulting in minimum 20 participants per condition.

Table 1

Number of participants per experiment

Experiment	Number of participants
Experiment 1: Preliminary test of inductions	
Experiment 1a	64
Experiment 1b	62
Experiment 2 Collective self-enhancement	82
Experiment 3 Individual self-enhancement	85
Experiment 4 Individual enhancement rev.	56
Experiment 5 Collective vs. individual enhancement	
Preliminary tests	46
Main session	70
Total	465

Experimental inductions

In developing the experimental manipulations, we followed several principles:

a. According to TMT, a death reminder should accomplish the following goal: activate thoughts of personal mortality, i.e. make these thoughts salient in a memory of an individual but at the same time outside of the focus of conscious attention (Greenberg et al., 1990; Pyszczynski et al., 1999). For this reason, we decided to lead participants to consider their own finiteness in a context of a task ostensibly not directly related to the topic.

b. To be able to clearly delineate the effects of death thoughts from other types of thoughts, the experimental inductions should be as similar as possible. The idea was to test the "strong" form of the hypothesis by including the uncertainty / exam anxiety inductions, and its "weak" form, by including the control situation connected to a completely neutral topic (i.e. experience of listening to music). The main control technique adopted in the experiments is thus control group – the dependent measures in the experimental groups were compared with the measures from the control groups.

c. Another important prerequisite for activating defence strategies is a delayed effect of the manipulation – a certain amount of time should pass following the induction for the first line of defence mechanism to appease so that the symbolic defences could be activated (Pyszczynski et al., 1997; Solomon et al., 2004). A short distraction task was therefore introduced following the inductions, namely the adapted version of the Positive and Negative Affect Schedule (*PANAS*, Watson, Clark, & Tellegen, 1988). The purpose of the scale was twofold: a. to serve as distraction and provide delay form the induction, b. to provide information about the current affective states of the participants, to allow for testing the potential affective effects of the inductions.

We have designed two procedures following the described principles (complete materials are presented in Appendix I):

1. Relevant thoughts were activated through answering different Likert-type scales, similar in form. To ensure credibility, the scales were introduced as an innovative method of personality examination which is being tested in the current research, with the following instruction: *"It has been demonstrated that spontaneous thoughts and feelings concerned with some aspects of life can provide important insights into personality traits. Therefore we want to ask you to answer to the following questions sincerely and without much thought, based on the first, spontaneous feelings."* The participants' task was to rate the extent to which they found a number of thoughts personally disquieting.

The contents of items in each scale was tailored to activate the specific concept: a. the first group rated items concerning the finiteness of human existence, b. the second group rated items regarding general uncertainty in life, c. the third group rated items concerned with exam anxiety and d. the control group rated items related to the experience of listening to music. The scales were modelled after existing instruments, but were additionally focused on the specific dimensions of concern. We preferred this manner of operationalization to the most commonly used open-ended questions (e.g. *Please describe what feelings the thought of your personal death provokes in you.*) for two reasons: a. potential differences in motivation to answer the open-ended question thoughtfully and b. supposed defence mechanisms that would start to operate during the

answering itself. We believe that the present procedure would provide a sharper focus and would not allow shifting away from the answer.

A preliminary analysis corroborated unifactorial factor structure of the scales[6]. In each case (mortality salience, uncertainty, exam anxiety) principal component analyses revealed that the first principal component had loadings from all the items and explained the largest percentage of variance. The mortality salience scale's first principal component (accounting for 49.76% of total variance) could be interpreted as a personalized fear of not being. The first principal component of the uncertainty salience scale accounted for 46.27% and expressed the unpredictability of personal life. Exam anxiety scale's first principal component explained 50.09% of variance and indicated a fear of demonstrating lack of intelligence in front of others.

Importantly, analysis of variance revealed that the scales induced roughly the same level of anxiety, as there were no significant differences between the average scores (M_{ms}= 2.20 (.85), M_{us}= 2.39 (.76), M_{es}= 2.44 (.90)).

2. In the second induction, the participants were presented with short texts about mortality or experience of listening to music (inspired by Baldwin & Wesley, 1996). The texts were based on essential aspects of the topics from the perspective of existential philosophy and psychology (e.g. from the work of Sartre, Ernst Becker, Yalom, etc.). The texts were presented within an ostensible text evaluation task. Participants were asked to read through the texts carefully and underline the basic ideas. After the text, they were asked to briefly summarize its main point and rate it on six semantic differential-type scales (artistic – non-artistic, well written – poorly written, memorable – not memorable, understandable – non understandable, interesting – dull, pleasant – unpleasant). Finally, participants were asked to re-write a formulation from the text they found particularly memorable, i.e. that they recognized as an expression of thinking similar to their own, in order to strengthen the manipulation. The two procedures described were used interchangeably, in order to cross-validate the findings.

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[66] To conduct this analysis we aggregated the data from Experiments II and III, in which we used the scale inductions.

Although it could be argued that these procedures would not need to be pretested, since they are bound to activate the relevant contents, we thought that pretesting should be performed, in order to avoid circular conclusions (i.e. concluding that the manipulation is successful based on its effects). However, the choice of indicators was rather narrow, since the effects we anticipated are subtle and presumed to happen at unconscious levels. We will describe the procedures designed to test the manipulations in greater detail in Experiment I.

Instruments

In this section, we will describe the instruments that were used in all or most of the experiments, while questionnaires devised for measuring dependant variables specific to each of them will be presented in the following sections. Complete scales in English and Serbian are given in Appendix II.

1. A translated and adapted version of **Positive and Negative Affect Schedule** (*PANAS*, Watson, Clark, & Tellegen, 1988) was used to measure affective reactions to experimental inductions. Participants were presented with 20 attributes designating positive and negative affective states and were asked to rate them on 5-point scales, according to how they were feeling at that moment. The instrument was chosen as a widely used and psychometrically sound.

   We subjected the items to principal component analysis (KMO = .81, Bartlett's test of sphericity $p<$ .001), which yielded a five-factor solution, explaining 65% of variance (complete results are given in Appendix VII). The first component explained the largest amount of variance (25%) and can be interpreted as a general affective measure, with positive loadings from all the negative original items, and negative loadings for positive items. The component had highest loading from adjectives *distressed* (.79), *upset* (.75) and *nervous* (.67), which suggests a prevalently anxious affective state. The second component (18%) appears to be an indicator of positive affective states, with highest loadings from *inspired* (.69), *excited* (.66) and *enthusiastic* (.65). The remaining components relate to more specific affective states, which are not of interest in the present study.

   Our findings do not fully support independence of positive and negative affective states, which could be a result of the experimental inductions. However, positive

and negative items make reliable subscales (α = .83 and .85 respectively), so we will include the positive and negative affect scores in further analyses, as well as the factor scores on the first principal component. The distribution of negative affect was skewed towards lower values (statistics are detailed in Table 2).

2. **Thought listing technique** (Petty & Cacciopo, 1981) was intended to serve as a filler task, but also to provide insight in the conscious-level cognitive processes following the experimental inductions. Participants were given five lines of app. 14.5 cm in length, and the instruction to write down any thoughts that were going through their head at that moment. They were instructed to use each line to write down one thought, as concisely as possible (using a simple sentence). The thoughts were coded by the experimenter using a simple binary coding: death thoughts or other. Number of death-related thoughts was entered in the analyses as an indicator of the conscious cognitive processes following the inductions.

3. We measured the chronic level of individual general anxiety with a translated and adapted version of **State-trait anxiety inventory for adults** (*STAI,* Spielberger et al., 1977). Participants rated 20 statements concerned with the general propensity to anxiety and concern on 4-point Likert-type scales anchored at *almost never* to *almost always*. They were specifically instructed to answer having in mind how they generally feel, and not to express their current emotional states (so as to cover the trait aspect of anxiety).

The instrument demonstrated high internal consistency (α = .90). Distribution of scores was scewed towards lower scores, and did not conform to normality (detailed descriptive statistics are provided in Table 2). We conducted a factor analysis of the items (KMO = .89, Bartlett's test of sphericity $p < .001$) which yielded four principal components with eigenvalues over one (complete results are presented in Appendix VII). However, the first component was the only one to explain a considerable percentage (39%) of total variance. All the original items load on the first component, which is indicative of a global anxiety measure. We can therefore interpret the scores from the scale as reflective of general anxiety.

4. Chronic levels of individual **self-esteem** were measured with a translated and adapted version of the scale devised by Tafarodi and Swann (2001). Sixteen items were rated on a 5-point scale, anchored at *do not agree at all* to *completely agree*. The instrument follows from conceptualization of self-esteem as a two-dimensional construct, reflecting the related aspects of self-competence and self-liking. To explore the structure of the scale, we conducted factor analysis of the items (KMO = .81, Bartlett's test p < .001). Five principal components were extracted with eigenvalues above 1, explaining 68% of variance (for complete results look in Appendix VII). The first principal component explained 34% of variance and had loadings from all the original items, suggesting a global dimension of self-esteem. The remaining components explain about 10% of variance or less and could be interpreted as more specific aspects of self-competence. We concluded that a clear two-factor structure has not been replicated. Since the items made a highly reliable scale (α = .85), we shall only analyze the score for the whole scale. It should be noted that the distribution of scores was normal, with results slightly skewed to higher scores, which is expected given findings from previous research (descriptive statistics can be found in table below).

Table 2

Descriptive statistics of the scales

Scale	N	M	SD	normality of distribution (KS test)
STAI				
General anxiety	167	1.91	.48	.007
Self-esteem scale	85	3.57	.58	.794
PANAS positive affect	164	3.13	.74	.500
negative affect	164	1.50	.58	.000

Experiment 1: Pretesting Experimental Materials and Procedures

I. Overview of the experiments

The essential elements of the procedure were tested in two experiments: we contrasted mortality salience and control conditions, to conduct a basic manipulation check. Mortality thoughts were induced thorough previously described procedures: fear of death scale and reading a text about personal death. In the control condition, participants read a text about the experience of listening to music. Thereupon, we measured cognitive and affective reactions to the materials, most importantly whether they would induce heightened non-conscious availability of death related cognitions. We measured this with a lexical decision task (Experiment Ia) and a word fragment completion task (Experiment Ib). We will present the two experiments and their basic results, followed by the analyses done on the combined data.

II. Experiment Ia

Design

The experiment had a mixed design, with one between-subject factor (condition: MS textual / MS scale vs. control) as well as two within subject factors: lexicality (with two levels: words and pseudowords), and meaning (with three levels: death-related / negative / neutral words).

Participants

Sixty-four students of the Faculty of Philosophy in Belgrade[7], aged between 19 and 33 (mean age 21.36, $SD = 1.85$) took part in the experiment, in exchange for course credit. They were randomized to three conditions: MS scale induction, MS text induction and

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[7] Students were mostly recruited from the Department of psychology (86%), while the others were students of archaeology, adult education and engineering.

control, following a between-subject design. Participants signed consent forms prior to the experiments and were told that they could withdraw from participation at any moment. They were provided with a detailed debriefing after the experiment. Participants were tested in small groups in a laboratory setting, using personal computers.

Instruments

a. **Positive and negative affect schedule** was used as a distractor task, and also to register affective reactions to the inductions.

b. **Thought listing** (Petty & Cacciopo, 1981): participants were asked to list any thoughts that came to mind while they were doing the previous tasks.

c. **Lexical decision task** (Kostić, 2006; Schimel, Hayes, Williams, & Jahrig, 2007): Participants were presented with letter strings and were asked to indicate whether the strings were words or pseudo-words as quickly and accurately as possible, by pressing a computer key. We measured reaction time in milliseconds to different types of letter strings, most critically the group of death related words. Since we expected that the experimental inductions would heighten cognitive availability of death related words, recognition of these words should be faster (reflected through shorter reaction times).

Stimuli

We developed four groups of stimuli for the lexical decision task:

1. pseudo-words
2. death-related words
3. negative words (words with negative connotations, unrelated to death)
4. neutral words

Since reaction times are rather sensitive to various factors, preparation of stimuli was granted special attention, to ensure that potential confounds are neutralized. This procedure included several steps:

1. **Generation of word lists.** Twenty participants were asked to write down all the words that came to mind when they thought about death. The responses made

the bases for creating the preliminary word list of death-related words, while control lists were generated by the experimenter.

Pseudo-words are letter strings constructed in accordance with phonological rules of the language, but without meaning (e.g. *struda, zglot, grava, kored, figuca*). List of pseudo-words was selected among the stimuli created for previous research (Filipović Đurđević, 2007).

2. **Word list balancing**. Word lists for the categories death-related, negative and neutral words were first balanced according to several criteria: word type, average word length and frequency. This resulted in four lists, each containing 25 words, of which 23 substantives, one verb and one adjective. Average word length varied between 6.2 and 6.3 letters. Word frequencies were extracted from the Frequency dictionary of contemporary Serbian language (Kostić, 1999). The lists were designed to include approximately equal number of high, medium and low frequency words. Average frequencies of the lists ranged from 268.2 to 270.8 occurrences in the corpus (the difference was not statistically significant).

3. **Preliminary testing**. A preliminary list of 75 words was empirically tested according to three criteria. Participants rated the stimuli on 7-point semantic differential type scales, on the following dimensions:

a. familiarity (subjective frequency) – participants were asked to rate the extent to which they were familiar with the word, i.e. how often they have encountered it;

b. abstractness (vs. concreteness) – participants rated the extent to which what the word denotes can be perceived by senses (seen, heard, touched) vs. denotes an abstract concept (higher values indicating more concreteness); participants were encouraged to make use of the full range of the scale;

c. death-relatedness – participants rated the extent to which the word is conceptually related to death.

The order of the stimuli was counterbalanced, i.e. they were presented in three different, pseudo-randomized orders. Fifteen participants rated the stimuli and their ratings were averaged to serve as an additional control in the final selection of stimuli for the task.

Final lists contained 20 words each, balanced according to word type and length ($M = 6.38$, $SD = 1.92$), objective frequency ($M = 322.4$, $SD = 545.65$), familiarity ($M = 6.65$, $SD = .21$) and concreteness ($M = 4.81$, $SD = 1.72$). Word lists did not differ in any of the categories, accept for familiarity (subjective frequency ratings). Death-related words were rated as slightly less familiar than the two remaining categories, reaching statistical significance (F (2, 57) = 41.72, p = .00). However, these differences can be understood as psychological distancing in regard to death-related concepts, since objective frequencies of the words were not different.

The final category served to validate the categorization of stimuli as related or not related to death. Expectedly, significant differences were observed in the ratings of the extent to which words from different lists were related to death (F (2, 57) = 192.37, p = .00). Final word lists contained 20 words each (examples are given in Table 3 and the complete stimuli lists in Appendix III).

Table 3

Examples of stimuli for lexical decision task

death-related	negative	neutral	pseudo-words
death	*blood*	*star*	*vatka*
dead	*pain*	*head*	*dinav*
cemetery	*fear*	*music*	*albuk*
sorrow	*dirt*	*rain*	*dotkon*
skeleton	*virus*	*tooth*	*mava*

Procedure

We introduced the procedure to the participants as two separate studies, one of which was to be administered using pen and paper, while the other was to be done on personal computers.

1. Participants read the text (or answered to the scale) related to death or listening to music, thus being induced with the respective contents.

2. Participants answered to PANAS that served as a distraction, but also as a check of emotional reaction to the inductions.

3. They listed the thoughts they were having at the moment.

4. Experimenter turned on the personal computers and introduced the participants to the lexical decision task.

   The lexical decision task was presented in Super Lab v2.0 software. Participants were instructed that they were going to be presented with letter strings, some of which are words of Serbian language, while some are non-words. Their task was to indicate the category for each of the presented letter strings by pressing a designated key, as fast and accurate as they could. Participants were first given 10 words and 10 pseudowords, as practice trails, with two types of feedback: a. for errors in categorization, b. for slow responding. Stimuli used in the practice trails were not repeated in the experiment and their reaction times were not analyzed.

   After these, participants were presented with a total of 120 strings (20 death related words, 20 negative and 20 neutral words, and 60 non-words), in randomized order. Stimuli were presented in black capital letters of Serbian Latin alphabet against a white background, in the middle of the screen. Each trial started with a visual presentation of a fixation dot for 1000 milliseconds, followed by the letter string. The maximal exposure time of each stimulus was limited to 1500 milliseconds. Reaction time was registered for each stimulus. In case participants did not give an answer within the time limit, the following stimulus was presented. Reaction times for errors in categorization were omitted from further analyses.

   The data were prepared for statistical analyses using Python 2.7.6 software, so to allow testing the effects of both within subject (stimuli category) and between subject (experimental vs. control group) factors. Average reaction times were computed for the four groups of stimuli. Response latencies were normally distributed and were not further transformed.

5. Participants were thanked and probed for any disturbing thoughts or suspicions about the procedure.

Results

    a. Effects of experimental inductions on lexical decision task latencies

Mean reaction times were entered into a two-way mixed analysis of variance. The analyses revealed a main effect of stimulus category (F (2.39, 145.61) [8] $= 10.45$, $p <$ .001, $r = .38$[9]) – slowest response latencies were observed for pseudowords and negative words. While longer latencies for pseudowords reflect characteristics of linguistic processing, it is interesting to note that it took participants more time to recognize the words with negative emotional connotations than both death-related ($p =$ .027) and neutral words ($p < .001$). Mean reaction times to different stimuli categories are presented in Table 4.

However, there were no significant differences in response latencies between experimental conditions, i.e. in different groups of participants. Crucially for the experimental hypothesis, there were no significant interactions between experimental condition and stimulus category. This means that participants induced with mortality salience did not differ in reaction times to any of the stimuli categories compared with the control group, most importantly there were no differences in reaction times to death-related words in the experimental groups. These findings disprove the hypothesis that accessibility of death concept would be heightened with experimental inductions.

To further explore the data, we conducted a stimulus analysis for individual death-related words, thus inspecting whether it is possible to observe any effects of experimental inductions with any of the stimuli used within the category. Significant differences in response latencies were observed only for the word "sveća" (candle) (F (2, 60) = 3.19, $p = .048$, $r = .70$), which was recognized faster by participants induced with mortality thoughts, but only in the MS scale condition.

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[8] Since Mauchly's test indicated a violation of the assumption of sphericity (χ^2 (5) = 23.58, $p < .001$), degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity.

[9] As a measure of effect size, we calculated r coefficients, as squared root of η^2.

Table 4

Average reaction times to categories of stimuli

stimuli category	mean reaction time (ms)	standard deviation
death-related	629.47	69.63
negative	639.69	78.94
neutral	624.12	70.81
pseudoword	652.82	73.63

Effects on response latencies for words "mrtav" (dead) and "sanduk" (coffin) also approached but not reached conventional significance levels. In these cases, we can observe that latencies tended to be longer in the MS textual induction condition, compared to both the control and scale induction conditions. Apart from these few cases, we can conclude that the findings from stimulus-analysis generally corroborate the previous conclusion that MS inductions did not significantly reduce response latencies for death-related words.

b. Effects of experimental inductions on cognitive and affective responses

The thought listing technique scores provided us with the opportunity to get insight into the conscious-level cognitive processes following the experimental inductions. Here we observed a significant effect of experimental condition (F (2, 61) = 10.18, $p < .001$)[10]. Both participants reading the text and answering the scale about death stated more death-related thoughts than participants who read about listening to music (t (24.68) = 5.25, $p < .001$, $r = .73$) (who named virtually no death related thoughts, as shown by the means detailed in Table 5). This finding could seem redundant, but it is important to

[10] For the measures of cognitive response, the equal variances assumption was not met and we therefore used robust tests of equality of means. However, in case of this particular analysis, robust tests could not be performed, since the control group had zero variance. Therefore, the results of this test are not completely reliable.

note that in previous experiments, TMT researchers have typically failed to observe similar effects of inductions on conscious level cognitions (Simon et al., 1997; Pyszczynski et al., 1999).

Table 5

Cognitive and affective reactions to experimental inductions

condition	death-related thoughts	positive affect	negative affect	anxiety
MS textual induction	2.10 (2.05)	2.39 (.77)	1.94 (.70)	.28 (.92)
MS scale induction	1.21 (1.61)	2.54 (.58)	1.75 (.84)	.12 (1.17)
Listening to music	0 (0)	2.83 (.66)	1.52 (.64)	-.31 (.79)

Note. Numbers given are means (and standard deviations). Average number of death-related thoughts is computed from frequencies. Positive and negative affect scores were given on 5-point scales. Anxiety scores are regression scores for the first principal component extracted from the PANAS scale.

To explore the affective reactions to the inductions, we analyzed the scores for positive and negative affect computed from PANAS. There was a marginally significant effect of experimental condition on the scores of positive affect (F (2, 60) = 2.31, p = .107). Planned contrasts revealed that participants who were induced with death-thoughts (either textually or by answering to scale) experienced less positive affect compared with participants who thought about listening to music (t (60) = -2.12, p = .019, r =.26, one-tailed).

Omnibus test did not prove significant for measures of negative affect; however, planned contrast also revealed that participants induced with mortality salience did report experiencing somewhat more negative affect than those thinking about music (t (60) = 1.65, p = .052, r =.21, one-tailed). Participants who thought about death also reported somewhat more anxiety than the control condition participants, as demonstrated by planned contrasts comparisons using measures of the first principal component extracted from PANAS (t (59) = 1.95, p = .028, r =.24, one-tailed).

To further explore the relations between dependent measures, we conducted a correlational analysis among the measures of cognitive response, affective response and lexical decision response latencies for death related words (as well as negative words). Neither the number of death related thoughts nor affective responses correlated significantly with the response latencies to death (or negative) words. Only the index of negative affect had a marginally significant correlation (r= -.20, p= .053) with response latencies, suggesting that participants who experienced more negative affect were faster to recognize words related to death.

We then explored how cognitive and affective reactions were related to the response latencies in different experimental conditions. We observed that the affective reactions correlated with the response latencies only in the mortality salience conditions (r_{pa} = .30, p = .030, r_{anx} = -.22, p = .085), while they did not correlate in the control conditions. Interestingly, a marginally significant correlation between the index of positive affect and response latencies for negative stimuli was also found (r_{pa} = .23, p = .076).

III.   Experiment Ib: overview

In this experiment, we tested the experimental inductions with a word fragment completion task. Participants were reminded either of death or listening to music, distracted for a short while, and then given the word fragment completion task. We expected that the participants reminded of mortality would complete more fragments with death related words compared to those who previously thought about music.

Design

The experiment had unifactorial design, with a single between-subject factor (conditions: MS textual / MS scale vs. control).

Participants

Sixty two students of Faculty of Philosophy in Belgrade[11] aged between 18 and 24 (mean age 20.67, *SD* = 1.41) participated in this experiment. They were randomly assigned to one of three conditions: MS textual induction, MS scale induction or control (reading about the experience of listening to music). Participants signed consent forms prior to the experiment and were told that they could withdraw from participation at any moment. They were provided with a detailed debriefing after the experiment. Participants were tested in smaller groups (up to 10) in facilities where they attended lectures. Participants worked individually and did not have any contact with one another during the experiment.

Instruments

We used identical instruments as in Experiment 1b, except for the lexical decision task. As the key dependent measure, we instead used a **word fragment completion task** (Arndt et al., 1997). Participants were given 30 word fragments, with the task of completing them with first words that came to mind. Ten of the fragments were constructed so that they could be completed either with a death related or a neutral word, e.g. „_ _ _ r a n a" could be completed with either *sahrana* (funeral) or *ishrana* (nutrition), „g r o _ _ e" could be completed either with *groblje* (cemetery) or *grožđe* (grapes). The remaining word fragments could be completed only with neutral words (e.g. *green*, *chair* or *game,* the complete list of fragments is provided in Appendix II). It can be observed that there were twice as many neutral fragments and these were needed to "buffer" potentially death-related words, so as not to induce conscious death-related thoughts. We aimed to make the task relatively easy to solve, so the fragments typically needed one or two additional letters. We did not impose any time restrictions, so that the task would not be stressful for the participants, which could interfere with the processes we wanted to investigate. The number death related words was used as the measure of cognitive availability of mortality thoughts.

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[11] Students came mainly from the Department for archaeology (65%) and psychology (25%), 1 came from the Department for Adult education, while the remaining 6 did not specify the area of study.

Procedure

We followed an identical procedure as in Experiment Ia, with the exception of the lexical decision task. Participants first read text (or answered to scale) related to death or listening to music. After reporting their state affect and stating their thoughts, they proceeded to the word fragment completion task. In the end, they were thanked and probed for any disturbing thoughts or suspicions.

Results

a. Effects of experimental inductions on death-thought accessibility

The average number of death related word fragment completions was entered in a one-way independent analysis of variance, to test for the effects of experimental inductions. The analysis revealed that there were no differences in the number of death related completions between participants who previously thought about death or listening to music (the means are detailed in Table 6). A marginally significant contrast was observed between the MS scale induction and control condition (t (58) = 1.59, p = .058, one-tailed), indicating a tendency for participants who answered to the fear of death scale to give more death-related words on the completion task.

We followed this test up with a stimulus analysis. Only in the case of fragment "S M _ _" (that could be completed to mean either *death* or *direction*) did we observe a significant effect between the conditions, χ^2 (2) = 6.58, p = .037. A larger number of death-related than neutral completions were observed only in the MS scale induction condition.

The findings are thus not supportive of the hypothesis that death thought awareness would be heightened by mortality salience inductions.

Table 6

Cognitive and affective reactions to experimental inductions in Experiment 1b

condition	word fragment completion scores	death-related thoughts	positive affect	negative affect	anxiety
MS textual induction	3.12 (1.45)	2.41 (2.49)	2.47 (.60)	1.53 (.52)	.04 (.88)
MS scale induction	3.60 (1.43)	0.65 (1.42)	2.41 (.71)	1.70 (.66)	-. 28 (1.33)
Listening to music	2.87 (1.60)	0.04 (0.20)	2.66 (.74)	1.52 (.49)	.22 (.67)

*Note: Numbers given in the table are the means (and standard deviations). Theoretical range for word fragment completion scores was 0-10. The remaining measures are as previously described.

b. Effects of experimental inductions on cognitive and affective responses

We also analyzed the measures of cognitive and affective responses to test for effects of experimental inductions. A significant main effect was observed on the measures of cognitive response (F (2, 23.68) = 12.18, $p <$ .001). Planned contrasts revealed that both the textual and scale inductions lead to more thoughts about death compared with the control condition (t (28.55) = 4.92, $p <$ .001, $r =$ .68).

Contrary to this, the inductions did not have any effect on the reported positive or negative affect, measured by PANAS scale. A marginally significant contrast emerged for the measures of anxiety (first principal component of PANAS scale) between the mortality salience and the control conditions (t (59) = 1.32, $p =$ .095, $r =$ .17). Participants who were reminded of death tended to express even somewhat less anxiety than those who thought about music.

We investigated relations between the implicit (word fragment completion scores) and explicit (cognitive response) cognitive and affective reactions to experimental

manipulations. Two correlations approached the conventional levels of significance: correlations of word fragment completion task scores with cognitive response ($r = .17$, $p =.095$) and the index of negative affect ($r = .21$, $p =. 051$). Correlations did not differ when analyzed in mortality salience vs. control conditions.

c. Additional analyses

To obtain more statistical power, we tested the effects on inductions on aggregated data from both experiments.

Firstly, we replicated the finding that mortality salience inductions resulted in more spontaneous thoughts about death on the thought-listing task ($t (56.1) = 7.32$, $p < .001$, $r = .70$). On average, participants who read about listening to music did not report any death-related thoughts, whilst participants who read about death reported 2 (out of 5) and participants who answered to death-related scale 1 (out of 5) thoughts about death.

Secondly, we observed significant differences in reported positive affect in different conditions – the omnibus test indicated borderline significance ($F (2, 122) = 3.05$, $p =.051$), but a significant contrast was observed between the MS and the control conditions, $t (122) = -2.47$, $p = .007$, $r= .22$). Participants who thought about death reported less positive affect than those who thought about music.

Measures of negative affect did not yield a significant omnibus test, but the planned contrast between the experimental and control conditions approached significance, $t (122) = 1.57$, $p = .059$, $r =.14$, one-tailed. The same holds true for the anxiety scores – planned contrast revealed differences between both MS conditions and the control condition, $t (121) = 2.15$, $p = .016$, $r =.19$. Following Lambert and associates (Lambert et al., 2014), we explored the answers to particular items from the PANAS seeking to discern between the affective responses more closely related to anxiety (*distressed*, *upset*, *nervous*) and fear (*scared*, *afraid*). Planned contrasts were conducted to compare the two mortality salience conditions with the control condition. As demonstrated by the differences (detailed in Table 7) the effects of experimental inductions were more pronounced on the fear-related than anxiety-related items.

Table 7

Differences in individual items of the PANAS scale between MS and control conditions

item	MS conditions	control condition	t –statistic
afraid	1.60	1.08	3.94**
scared	1.68	1.36	1.95*
upset	1.90	1.61	1.35
nervous	1.98	1.74	1.08
distressed	2.00	1.85	.64

*Note: the numbers given are means from the combined MS and control conditions (theoretical range 1 to 5); t- statistics are given for planned contrast between the MS vs. control conditions; ** >.05, *>.01(one-tailed tests)

In sum, participants induced with mortality salience demonstrated less positive affect and more fear than participants who thought about music. Both MS manipulations produced equivalent effects, in cognitive as well as affective reactions.

Discussion

We conducted two experiments to test the experimental inductions we developed to heighten mortality salience in our participants. We applied two different measures of death thought accessibility, to cross-validate the findings: a. a standard task used in previous TMT research, namely, word fragment completion task and b. a lexical decision task we developed for the current study. We expected that participants reminded of mortality via answering questions about a death-related text or answering a scale related to fear of death would demonstrate higher death thought accessibility. More specifically, we expected them to demonstrate shorter response latencies to death related words (on the lexical decision task) or produce more death-related words for

ambiguous fragments (on word fragment completion task). Our findings did not support the hypothesis: participants reminded of death (as opposed to those reminded of music) did not recognize death-related words more quickly, nor did they complete more fragments with death-related words.

This finding is not in accordance with the previous TMT research, in particular the experiments looking into the cognitive architecture of terror management (Pyszczynski et al., 1997; Solomon et al., 2004). They suggest that death thought awareness, i.e. the salience of the concept of death was not heightened as a result of MS manipulations. This finding could be explained in one of two ways: a. the manipulations we devised are not adequate death reminders; b. the hypothesis regarding the cognitive underpinnings of terror management processes might not be accurate. The two experiments reported are naturally not sufficient to disprove the latter hypothesis, but we will nevertheless review the arguments in favour and against the two interpretations.

There are several arguments supporting the validity of manipulations. Starting from the least strong of the arguments, the face validity of the manipulations could hardly be questioned, i.e. it is difficult to challenge that participants would think about death when the tasks explicitly asked them to elaborate on the topic. In further support of this, we analyzed the responses participants in the textual MS induction condition gave after reading the text, about the central issue the text tackled. None of the participants failed to recognize that the text was about *personal death* – this proves that the participants read the text at least with sufficient attention to recognize this fact.

Furthermore, despite the fact that we did not observe the hypothesised effects at the implicit cognitive level, we did observe two other kinds of effects: a. at the level of conscious cognitions and b. those expressed through affective reactions. These reactions are in accordance with the logic behind the manipulations – the manipulations induced more thoughts about death and less positive (in some cases, more negative) experienced affect. Participants who thought about listening to music did not demonstrate either of the effects, so these could not be interpreted as general effects of any experimental inductions.

Finally, another argument in favour of the manipulations is that two different tasks that did not share method variance, converged on the same conclusion. The tasks were devised so as to carefully observe the principles outlined in the previous chapter and

they can be considered valid measures of death-thought accessibility, as conceptualized within the TMT framework. We would argue that the lexical decision task in particular should provide psychometrically sound measures of implicit cognitive processes, since it was based on several comprehensive pre-tests and included several categories of control stimuli.

We will however point out two procedural issues when discussing the replicability of the effects on death-thought awareness. The first one is the period of distraction, following the manipulations and preceding the outcome measures. Obviously, the precise length of the delay could influence the cognitive processes that are supposed to take place after introducing the manipulation. This period has so far been operationalized in terms of distractor tasks (Burke et al., 2010) (the procedure that we also followed) rather than in more precise temporal terms. It is unclear, in other words, which amount of time should exactly pass between the manipulations and the measurement of effects. It can be argued that some smaller variations in the length of this period could affect the effects. Secondly, the thought listing task given to participants after the PANAS distraction could be argued to have enhanced the manipulations, since at least some of the participants wrote about death. To test this alternative explanation, we looked at whether the number of death related thoughts correlated with response latencies to death-related stimuli. As we already presented, either null correlation (in Experiment 1a) or marginally significant positive correlation (Experiment 1b) was observed between the two measures, which does not support this alternative explanation.

The other important issue that warrants discussion are the unexpected effects of the inductions on explicit cognitive and affective reactions. Although the conscious-level cognitive responses are logically consistent with the nature of the inductions, this finding is not in accordance with the previous TMT research, i.e. with the fact that researchers typically observed the implicit but failed to observe explicit effects (e.g. Simon et al., 1997; Pyszczynski et al., 1999). Even though death-thought inductions should induce further thinking about death, not all participants (even in our studies) follow this pattern. This lack of an expected effect has been previously interpreted as an indicator of defensive strategies, i.e. the activation of defence mechanisms as negation, rationalization and the like. Although this could be an issue of individual variations in

reactions to mortality reminders, it is worth noting that the thought- listing task is also sensitive to impression management and similar motives, since it does not in any way preclude cognitive deliberation. Consequently, some participants might have decided they would not write about death-related thoughts, even if they did experience them.

Some recent studies have argued that mortality salience inductions do produce affective reactions. As already mentioned, Lambert and associates (2014) demonstrated significant changes in affect in both meta-analysis of the previous studies and in newly conducted experiments, which employed a procedure more attuned to testing affective reactions. In our studies, the basic conditions the authors highlight as prerequisite for exploring the affective reactions to experimental MS inductions were met: a neutral control condition was included in the design and affective reactions were measured immediately after the inductions. We also analyzed the PANAS scores more elaborately, to discern the negative affective responses, anxiety and fear in particular. In the present study, the affect accounted for up to 5% of variance in reactions, and the effects were most convincing on the measures of positive affect and items related to fear. While the effects on the measures of positive affect could be due to the contents of the neutral condition in the present study, heightened fear is in line with the findings of Lambert and associates (2014). These preliminary findings suggest that affective responses do seem to play a role in mortality salience effects. We will elaborate on this issue and its implications for the understanding of mortality salience effects in greater depth in the general discussion.

<div align="center">***</div>

To summarize the findings of the preliminary experiments, we do think that we have found sufficient support for the validity of manipulations, to warrant their application in further experiments. In the following experiments, we will conduct additional analyses of the cognitive and affective reactions to the experimental inductions and then re-discuss these issues considering the full range of the data we will have at our disposal.

Experiment 2: Collective Self-Enhancement Strategies

Design

In this experiment we tested the effects of mortality salience on the tendency to use self-enhancement strategies based on the membership in an important group, the ethnic group (collective self-enhancement). We expected that activating the death-related thoughts would result in a more intensive collective self-enhancement in comparison to other situations.

The experiment had a single factor, between-subjects design with four conditions: mortality salience / life uncertainty salience / exam anxiety salience / control (listening to music). The participants underwent the experimental inductions and then answered questions about: a. strength of identification with the group, b. perceived unity of the group, c. stereotyping of the group, d. positivity of group perception, e. tendency to self-stereotype.

We chose to examine different reactions that prior research has related to the enhancement of the collective self-image. These different measures have often been used interchangeably, and we also wanted to examine their mutual relations, as well as whether mortality (vs. uncertainty/ exam anxiety) reminders would produce similar patterns of effects for different measures. Prior to the inductions, we measured the level of trait anxiety, whose moderator role we wished to examine.

Participants

Students from the first and third years from the Faculty of media and communications in Belgrade[12] ($N = 82$) participated in exchange for course credit. Participants' age ranged from 19 to 47 years, with an average of 23 years. They were randomized into one of the four conditions, resulting in 18 to 22 participants per condition.

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[12] 55% were students of psychology, 27% students of communications, 11% social work, and 7% digital art students. Study field did not affect the dependent measures nor interacted with the experimental inductions.

Instruments

We will describe the instruments used in the following. Complete questionnaire is given in Appendix IV.

Measures of the ethnic group stereotypes. Participants were asked to imagine an average member of the ethnic group (i.e. an average Serb) and were then presented with a list with 16 traits. We varied the traits on two dimensions: a. positive / negative, b. stereotypical / non-stereotypical of the ethnic group (Table 8).

Selection of the traits was based on findings from previous research (Petrović, 2003; Popadić, & Biro, 1999) about the contents of both auto-stereotypes (stereotypes about the own group among Serbian participants) and hetero-stereotypes (stereotypes about the Serbs among members of other, neighbouring ethnic groups). Choice of negative traits was primarily drawn from the contents of hetero-stereotypes, since previously found auto-stereotypes were exclusively positive. The stereotypically positive traits were chosen against two criteria: a. whether the trait was spontaneously ascribed to Serbs by other groups, b. whether the trait was previously perceived as significantly more typical of Serbs than other positive traits (e.g. hospitable was ascribed to the group by 90% of participants, compared with 54% who rated described Serbs as cultured).

Table 8

List of traits for investigation of perception of the own group

Traits	Stereotypical	Non-stereotypical
	hospitable	*cultured*
	proud	*meticulous*
Positive	*warm*	*mild*
	brave	*thoughtful*
	lazy	*immoral*
	belligerent	*snobbish*
Negative	*primitive*	*stingy*
	aggressive	*dull*

Participant were asked for three ratings for each of the traits: a. how characteristic the trait was for themselves personally (on a five-point scale), b. the percentage of members of the ethnic group who possessed the trait (from 0 to 100%), c. whether they would describe the trait as positive, negative or neutral.

Entitativity of the ethnic group scale. The participants were given a task to estimate unity (entitativity) of the ethnic group on a scale designed for the purposes of the current study (modelled after Castano et al., 2002). The scale consisted of eight items, e.g. *Serbs share many common traits* or *I feel that Serbia is one large whole*, rated on 5-point Likert-type scales. Item analysis revealed that two of the items had low correlations with the rest of the scale (*The Serbian nation is just an abstraction* and *Serbs do not make a single unified group*).

We supposed that the negative formulations caused difficulties with understanding the items, so we removed them from the final version of the scale, used in the analysis. The corrected version consisted of six items (α= .75), with the scores ranging from 6 to 30. We found on average a moderate level of the perception of ethnic group entitativity, with the mean somewhat above the midpoint of the scale ($M = 17.74$, $SD = 4.45$).

Strength of in-group identification was measured with eight items rated on 5-point response scales (from *I do not agree at all* to *I completely agree*). The items for the preliminary version were modelled after items from the most frequently used foreign scales, e.g.: *The fact that I am a Serbian is important for how I see myself*, *I feel that being a Serbian describes me well* (Castano, 2004; Hogg, 2009, 2010; Spears et al., 1997; Turner et al., 1994). The final choice of items was based on testing of the preliminary version with an independent sample of participants from the same population ($N = 72$). The items chosen for the final version were those with greatest factor loadings on the second principal component, interpreted as a specific measure of identification. Contents of the items loading on this component corresponded most closely to the theoretical definition of identification with the group as importance of the group identity for self-perception of the individual.

Analysis of the metric characteristics demonstrated good internal consistency of the scale (α=.85). We also conducted an item-analysis to investigate the quality of the

items. It revealed that one of the items (*Being a Serbian is not important for how I see myself*) had low positive or negative correlations with other items. We assumed that the negative formulation caused difficulties with responding to the item, so we excluded it from further analyses. The revised version of the scale consisted of 7 items (α=.89). Theoretical score ranged from 5 to 35, while the empirical mean somewhat above the theoretical midpoint - 19.38 ($SD = 6.43$).

To measure **trait anxiety** we adapted the State-trait anxiety inventory (*STAI*, Spielberger et al., 1977).

Procedure

Following the standard procedure (Rosenblatt et al., 1989), participants were told that they will be taking part in two unrelated studies and will answer to two different questionnaires. They were first given a questionnaire introduced as a combination of several, both traditional and innovative, measures of personality. It contained several sections, in the following order:

1. A short demographic section (asking for study field, year of studies, ethnic belonging)

2. A general anxiety scale

3. Manipulation of the independent variable, consisting of one of the following: fear of death scale (group I) / life uncertainty scale (group II), exam anxiety scale (group III), experience of listening to music scale (group IV).

We introduced the scales in the following manner:

" The following scale is part of an innovative personality assessment technique. It has been demonstrated that spontaneous thoughts and feelings about certain aspects of life can provide important insight into personality traits. For this to be achieved, we will ask you to answer the following questions honestly and without much deliberation, based on your spontaneous feelings. In the following list there are a series of thoughts people sometimes can have. Please read each statement carefully and estimate how disturbing you personally find each particular thought."

4. PANAS scale, as a distractor task and a measure the affective states.

5. Word fragment completion task, as a manipulation check

6. Participants were then told to put aside the questionnaire and administered the second questionnaire containing collective enhancement measures. Since it was crucial that the ethnic identity be salient in the situation, we introduced the questionnaire with the following procedure (similar to the one used in Silvia & Eichstaedt, 2004):

„The next study investigates some of your attitudes and views on ethnic group belonging. We will ask you to think about your ethnic group and the things you share with other members of that group (Serbs or members of another ethnic group). Please read the instructions carefully and answer each question. Do not spend too much time deliberating about each question – what matters are the first, spontaneous reactions. "

Order of the dependent measures was counterbalanced (one half of the participants answered first to the identification/entitativity scale, than the questions about stereotypes, while this was reversed for the others). In this manner we sought to neutralize the potential order effects and the possibility that one of the measures provides enough opportunity to enhance, thus eliminating the need for further enhancement (which can be inferred from the hypothesis of inter-changeability of self-enhancement strategies, Tesser, 2000, 2001).

6. Participants were debriefed following the previously described procedure.

Operationalization of dependent measures

We computed a number of dependent measures based on the responses to the questionnaire:

a. Perception of group entitativity was represented by a score computed from the described scale, with a theoretical range from 6 to 30, higher score indicating perception of higher in-group entitativity.

b. Strength of in-group identification was represented by a score on the described scale, with a theoretical range from 7 to 35, higher score indicating stronger identification.

c. Stereotyping of the in-group was computed as the average percentage of group members rated as possessing a trait stereotypical of the group, based on the assessment of the participant (McCauley & Thangavelu, 1991; Sinclair et al., 2006). We conducted analysis using four average ratings for the four groups of traits: a. positive and stereotypical, b. positive and non-stereotypical, c. negative and stereotypical, d. negative and non-stereotypical traits. These scores allowed us to investigate how participants

rated the characteristics of the in-group according to two dimensions: positivity and stereotypicality.

The distinction between stereotypical and non-stereotypical traits, made on the basis of prior research, was replicated in the current study. We observed a significant difference in the average ratings of prevalence between stereotypical and non-stereotypical traits (M_{st} = 62.29 (SD = 12.70), M_{nst} = 42.07 (SD = 9.55); t (81) = 14,491, $p < .001$). Additionally, participants' ratings for positive stereotypical trait were significantly above the 0.5 probability (t (81) = 8.823, $p < .001$), as well as the negative stereotypical traits (t (81) = 5.050, $p < .001$). When we look at the ratings for individual traits, we can conclude that all of the stereotypical traits, both positive and negative, were rated as characteristic for over 50% of Serbs (Table 9). Stereotypical positive and negative traits make acceptably reliable scales (α=.65 /.69 respectively).

We further investigated group trait ratings by principal component analysis. The conditions for the application of this analysis were met (KMO=.63, Bartlett's test of sphericity was significant, p < .001)[13]. The analysis yielded 5 components with eigenvalues above 1, which explained a total of 65 % of variance. Only the first two components had eigenvalues significantly above 1, explaining 21.4% and 19.34% of variance respectively. The first component loaded clearly on the positive traits, while the second on negative traits (an exception being the trait *proud*, which has loadings on both components). Since the distinction between the positive and negative traits appears to be a crucial one in group perception, we will use the averaged measures of positive and negative group traits (α =.77 /.72 respectively) as indicators of the positivity of the group perception.

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[13]It should be noted that the results are tentative in terms of generalizability, due to a relatively small sample of participants.

Table 9

Averages and standard deviations of ratings of probability that an average Serb possesses that trait

	Average rating	Standard deviation
Hospitable	76.27	20.36
Proud	71.54	21.37
Belligerent	66.79	22.72
Aggressive	58.76	20.22
Warm	56.93	20.08
Lazy	55.30	20.02
Primitive	54.36	24.43
Brave	54.28	24.81
Snobbish	49.07	22.62
Immoral	47.89	22.89
Mild	43.12	17.91
Stingy	41.46	23.15
Thoughtful	40.89	19.73
Meticulous	40.67	19.91
Cultured	38.15	20.24
Dull	34.20	20.84

d. Self-stereotyping was operationalized through two measures: a. self-ratings on positive and negative traits stereotypical of the ethnic group, b. standardized distances between ratings of the degree to which the trait is characteristic for self and for group (*self-stereotyping*; Spears et al, 1997; Sinclair et al., 2006; Simon & Hamilton, 1994; Latrofa et al., 2007).

The participants generally demonstrated a tendency to ascribe traits stereotypical of the group to the self – the stereotypical traits were rated as characteristic of the self significantly more than non-stereotypical traits (t (81) = 4.68, p <.001) (Table 10).

Table 10

Means and standard deviations in ratings of how well the traits describe the self

	Average rating (*M*)	Standard deviation
Self-ratings on stereotypical and positive traits	4.14	.55
Self-ratings on non-stereotypical and positive traits	4.02	.61
Self-ratings on stereotypical and negative traits	2.16	.66
Self-ratings on non-stereotypical and negative traits	1.76	.63

If we compare the stereotypical vs. non-stereotypical trait ratings, we can observe a more pronounced tendency of the participants to accept negative characteristics, if they a part of the stereotype of the group (*t* (81) = 4.89, *p*< .001). There is also a marginal trend in the same direction for positive traits (*t* (81) = 1.83, p= .071).

We investigated self-ratings by principal component analysis, including all the stereotypical traits. The conditions for the application of this analysis were met (KMO=.63, Bartlett's test of sphericity was significant, *p*< .001). The analysis yielded three components with eigenvalues above 1, which explained a total of 64% of variance, 25.82%, 25.23% and 12.78% respectively. The first component had highest loadings from the traits *brave* (.76), *proud* (.69), *belligerent* (.68) and *aggressive* (.67) and can be interpreted as accepting the "warrior" stereotype as descriptive of the self.

The second component had highest loadings from *hospitable* (.74), *warm* (.71) and (negatively) *primitive* (-.71), which can be interpreted as accepting the "good host" stereotype as descriptive of the self. We shall test the effects of experimental inductions using the scores on the first two extracted components.

We have also computed measures of distance between standardized ratings of how well a trait describes the self and the group. These distance ratings proved however not to be

different for stereotypical and non-stereotypical traits (M_{st} = 1.72, SD = 1.26; M_{nst} = 1.76, SD = 1.24). A possible explanation would be that the self and group ratings co-vary in a similar direction, i.e. towards accepting the positive and discounting the negative, regardless of whether the traits are stereotypical for the group. This finding suggests a more general self-enhancement tendency that we will discuss in more detail. For this reason, these measures will not be included in further analyses.

Relations between dependent measures

One of the research goals was to determine relations between variables representing different group-enhancement strategies. In the table below, linear correlation coefficients have been presented between pairs of variables (Table 11).

We can observe from the table predominantly positive inter-correlations of dependent variables, mainly ranging from weak to moderate. Ascribing negative traits to the group is, as expected, negatively related to identification.

To investigate the relations more closely, we conducted a principal component analysis. We entered six variables in the analysis: measures of identification, entitativity, self-stereotyping as "warrior" or "good host", group ratings for positive and negative traits[14]. The conditions for the application of this analysis were met (KMO= .64, Bartlett's test of sphericity was significant, $p<$ .001)[15]. The analysis extracted two principal components with eigenvalues above 1, which explained a total of 54 % of variance (33.82 %, 20.41% respectively).

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[14] Ratings for positive group-stereotypical traits converged to a high degree with the overall positive ratings, as was the case for negative traits. Therefore we entered only the overall positive and negative ratings in the analysis. Meanwhile, factor analysis on the positive-negative traits did not support treating the tendency to ascribe positive and deny negative traits as identical.

[15] It should be noted that the results are tentative in terms of generalizability, due to a small number of participants.

Table 11

Inter-correlations of dependent measures

	Strength of identification	Entitativity	Self-stereotyping "warrior"	Self-stereotyping "good host"	Group ratings stereotypical positive	Group ratings stereotypical negative	Group ratings positive
Strength of identification	*						
Entitativity	.492**	*					
Self-stereotyping "warrior"	.214*	.316**	*				
Self-stereotyping "good host"	.062	.127	.027	*			
Group ratings stereotypical positive	.224*	.273*	.147	.185*	*		
Group ratings stereotypical negative	-.279**	-.104	.118	.127	.227*	*	
Group ratings positive	.359**	.295**	.027	.184*	795**.	.017	*
Group ratings negative traits	-.251*	-.163	.102	.132	.128	.904**	-.009

** Correlation is significant at 0.01 level.

* Correlation is significant at 0.05 level.

All the variables loaded on the first extracted component, with highest loadings coming from the identification (.78), entitativity (.78) and positive group traits (.65). This can be interpreted as an index of collective self-enhancement, including a positive perception of the ethnic in-group, perception of group's unity and identification with the group. The second component loaded most strongly on ascribing negative traits to the group (.813), so this would be a more specific index of the negative perception of the group.

The described patterns of relations suggest that different measures of group enhancement strategies do converge to a certain extent, so that they can be considered a complex of similar tendencies. However, they are sufficiently discriminative (non-overlapping) that it would make sense to separately analyze the effects of experimental inductions on them. The a priori defined measures proved reliable, with the exception of self-stereotyping that can be more reliably represented with the factor scores on the first two components. We will also present the analysis on the scores on the first extracted principal component, as a more global measure of collective enhancement.

Testing the effects of mortality reminders on collective enhancement

In this experiment, we expected to observe the effects of mortality salience induction on the measures of collective enhancement, i.e. we expected that participants reminded of their own death would report higher identification with their ethnic group, perceive the group as more unified, positive and in accordance with the stereotypes, as well as ascribe the traits stereotypical of the group to themselves.

To test for the effects of experimental manipulations we used the GLM procedure. Since there were four groups to compare, we followed up the omnibus tests with several post-hoc procedures: a. we conducted planned contrast analysis, comparing the mortality salience group with all the other groups (contrasts were coded as 3 -1 -1 -1), b. then, we compared the mortality salience group with each the other experimental groups separately (an overview is provided in Table 12). These procedures combined provide a complete test of both the weak and the strong form of the hypotheses, i.e. they test whether any effects of mortality salience emerge (point a) and, more precisely, whether the effects of mortality salience differ from the effects of other types of anxiety salience (life uncertainty / exam anxiety) (point b).

Table 12

Overview of the follow-up analyses

Planned contrasts	mortality salience	life uncertainty salience	exam anxiety salience	listening to music (control)
Contrast 1	3	-1	-1	-1
Contrast 2	1	-1	0	0
Contrast 3	1	0	-1	0
Contrast 4	1	0	0	-1

a. Mortality salience effects on the identification with the ethnic group

Omnibus ANOVA did not reveal significant differences between experimental conditions. Planned comparisons revealed that participants in mortality salience conditions demonstrated highest identification with the ethnic group, compared to other conditions, $t(78) = 1.99$, $p = .02$ (one-tailed), $r = .22$. Follow-up analysis revealed that mortality salience increased identification with the ethnic group compared to uncertainty salience, $t(78) = 1.69$, $p = .047$, as well as thinking about listening to music, $t(78) = 2.23$, $p = .014$ (means are detailed in Figure 3).

Figure 3

Effects of experimental conditions on identification with the ethnic group
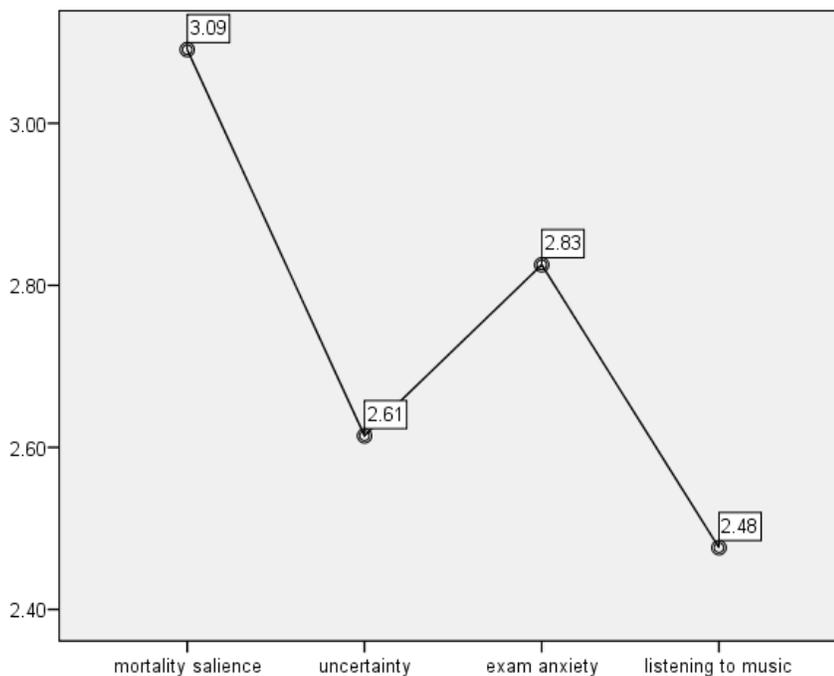
*Note: identification was measured on a 5-point scale.

b. Perception of entitativity of the ethnic group

Omnibus ANOVA did not reveal significant differences among the conditions (Figure 4). Planned contrasts revealed that mortality salience participants demonstrated higher perceptions of entitativity of the own ethnic group, $t(78) = 1.75$, $p = .041$, $r = .19$ (one-tailed). Mortality salience heightened perceptions of group unity compared to the control group, $t(78) = 1.98$, $p = .025$ (one-tailed) and also marginally compared to thinking about exam anxiety, $t(78) = 1.36$, $p = .088$ (one-tailed).

Figure 4

Effects of experimental conditions on perception of entitativity of the ethnic group
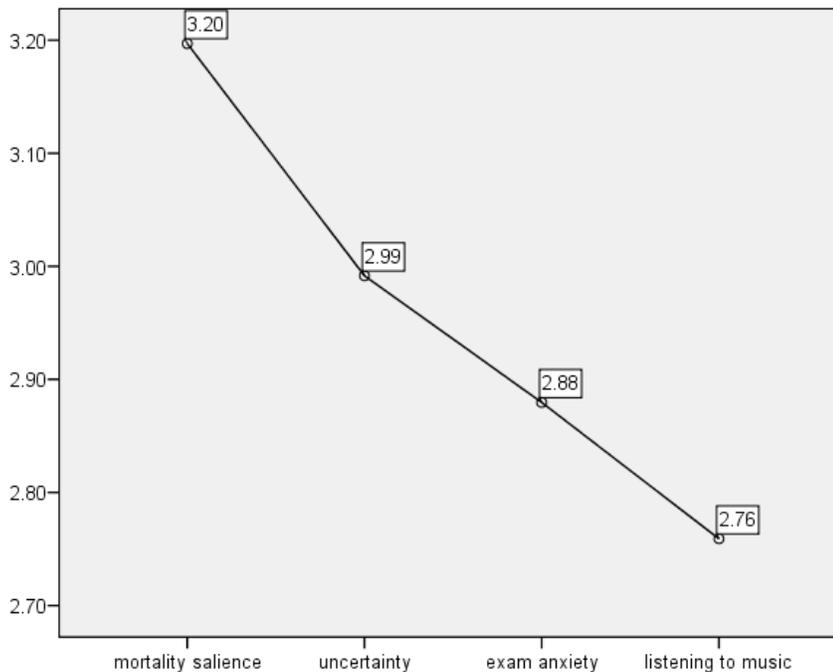
*Note: entitativity was measured on a 5-point scale.

c. Perception of group stereotypes

To analyze the effects of experimental inductions on the perception of stereotypes of the ethnic group we first conducted analysis on a composite measure derived from mean ratings of all the stereotypical traits and followed this up with separate analyses of positive and negative traits (Figure 5).

Experimental inductions did not have a significant effect on the ratings of probability that an average Serb would possess the traits stereotypically related with the group. Neither of the planned contrasts revealed significant differences in the hypothesized direction. We only observed a marginally significant difference between the uncertainty salience and control conditions ($p = .093$).

Figure 5

Effects of experimental inductions on ratings of stereotypical traits
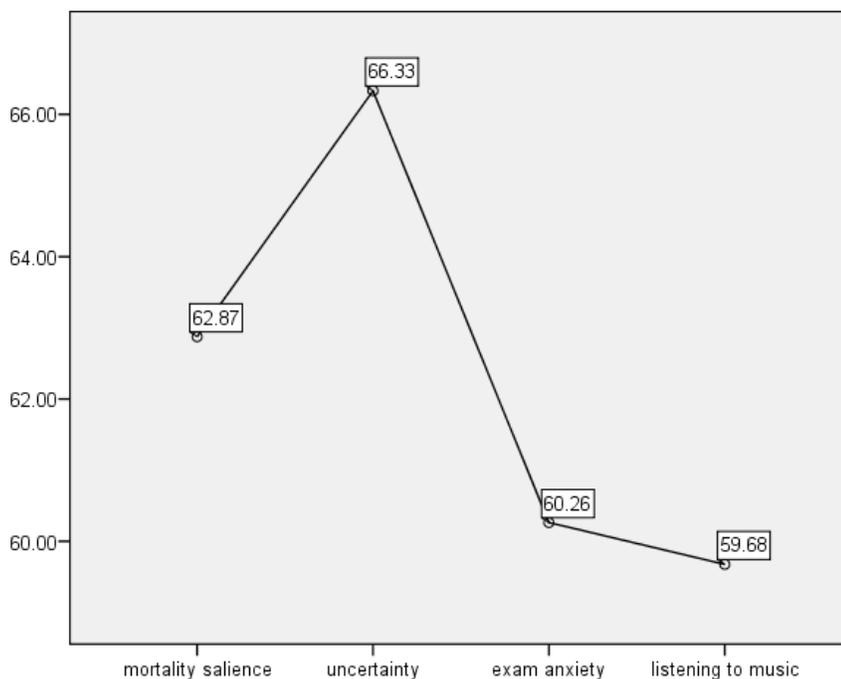
*Note: stereotypes were rated on 100-point scales.

Separate analyses provide a more nuanced picture (Figure 6). Mean ratings of the probability of an average ethnic group member to possess any of the positive stereotypical traits did not differ across conditions, as revealed by an omnibus ANOVA. However, follow-up analyses revealed some marginally significant tendencies in the expected direction. Of the planned contrasts, only the contrast between the mortality salience and control conditions was marginally significant, $t(78) = 1.43$, $p = .078$ (one-tailed). Additionally, a significant difference was also observed between the uncertainty salience and control conditions ($MD = 9.55$, $p = .042$).

Regarding the mean ratings of the probability of an average Serb to possess negative stereotypical traits, omnibus tests did not reveal any significant differences and follow-up tests did not reveal hypothesized differences. The only significant difference that

emerged in the perception of negative traits was that between the mortality and uncertainty salience conditions, t (78) = 1.67, p = 0.48 (one-tailed) – participants who thought about death ascribed negative stereotypical traits to the group significantly less than those who previously thought about life uncertainty.

Figure 6

Effects of experimental manipulations on perceptions of positive and negative stereotypical traits
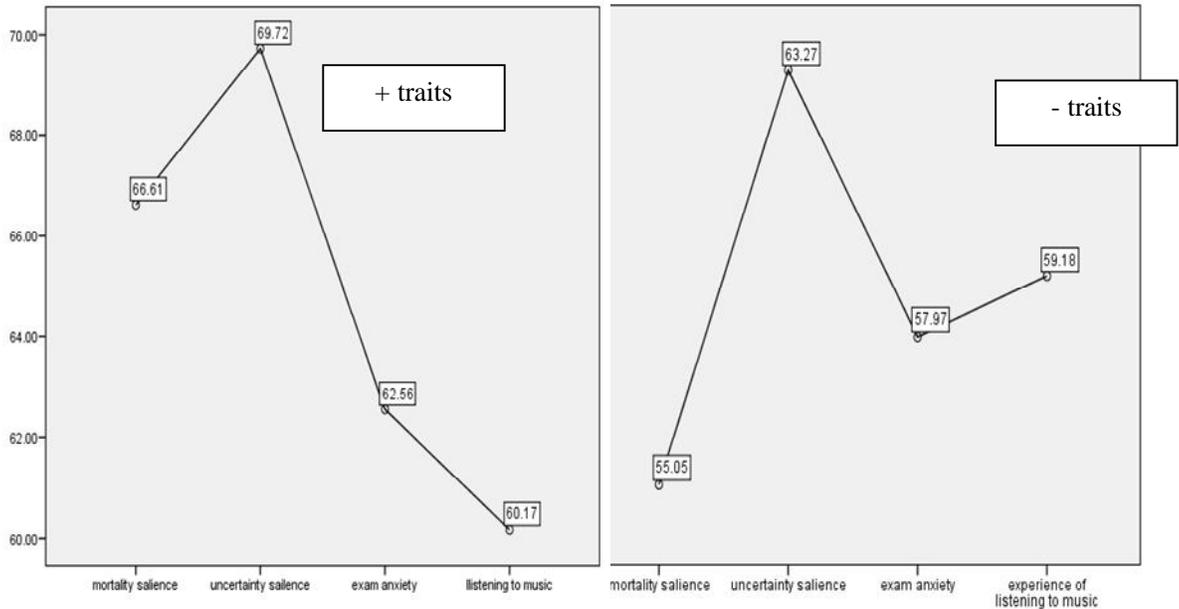
*Note: traits were rated on 100-point scales.

d. Positivity of the perception of the ethnic group

In addition to analyzing whether thoughts of death increased the stereotypicality of the view of the ethnic group, we also wanted to test their effects on the general positivity of the group perception. In the following analysis, we contrasted the mean ratings of probability for positive and negative traits to be ascribed to the group, regardless of whether they are considered stereotypical of the group.

Perception of how likely the participants rated an average Serb to possess a number of positive traits was significantly affected by experimental inductions, F (3, 78) = 3.25, p = .026 (Figure 7). Planned contrasts revealed that mortality salient participants

110

demonstrated the most positive perception of the ethnic group, t (78) = 2.51, p = .007 (one-tailed), r = .27. Mortality salience effects are significant when contrasted with the exam anxiety salience, t (78) = 2.33, p = .011, as well as the control condition, t (78) = 2.78, p = .003 (one-tailed).

Figure 7

Effects of experimental inductions on the ratings of positivity of ethnic group traits
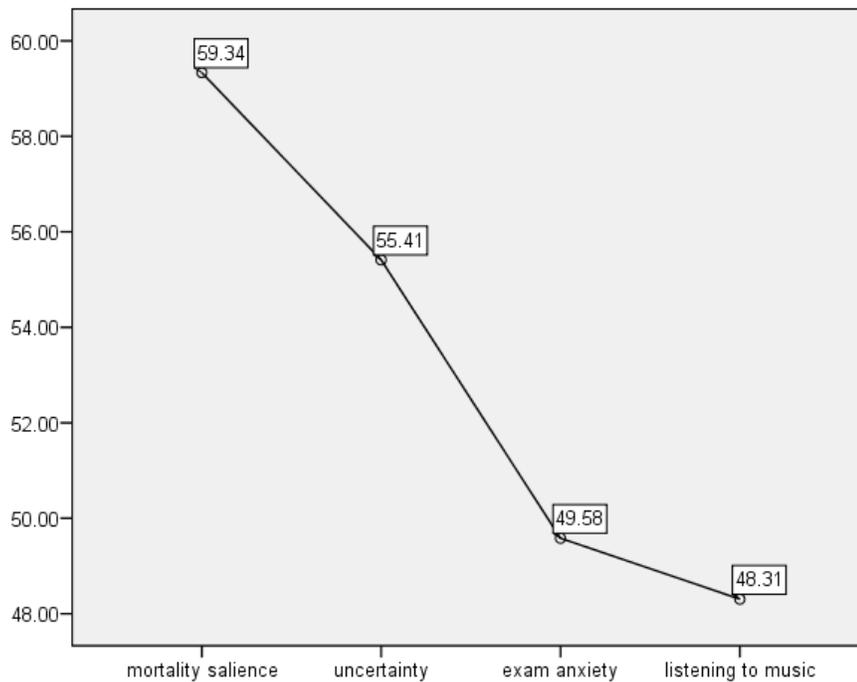
*Note: ratings were given on a 100-point scale.

Ratings of negative traits did not differ significantly across the conditions (Figure 8). No significant trends were observed in the data, however, a marginally significant contrast was observed between the mortality and uncertainty salience conditions, t (78) = 1.54, p = .06 – participants reminded of death were less likely to ascribe negative traits to the group compared to those reminded of uncertainty.

Figure 8

Effects of experimental inductions on the ratings of negative ethnic group traits
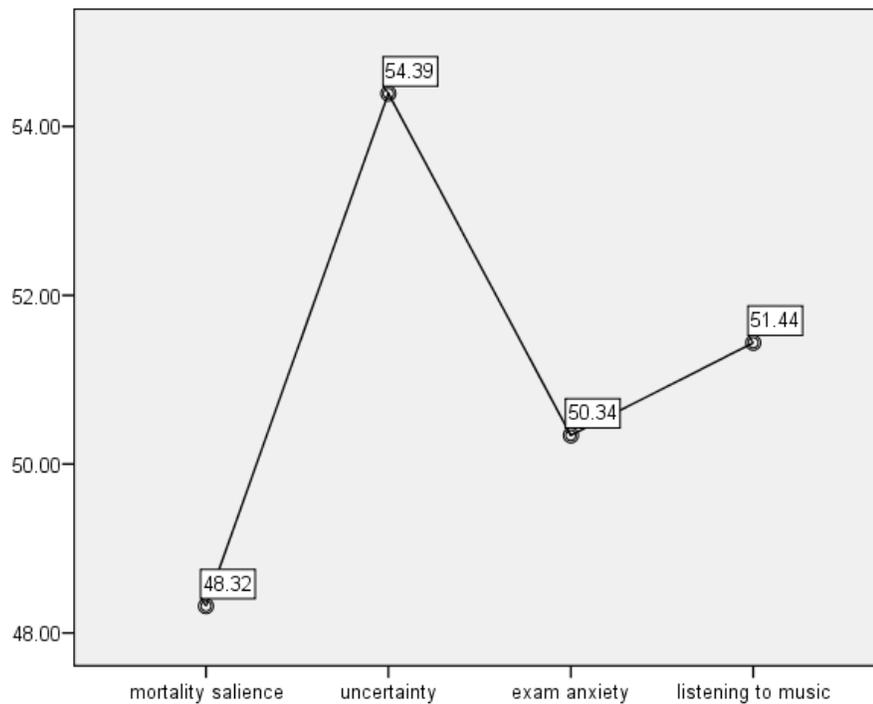
*Note: ratings were given on a 100-point scale.

e. Effects of mortality salience on self-stereotyping

Participants' tendency to self-stereotype i.e. to ascribe traits stereotypical of the ethnic group to themselves was tested using the scores on two principal components, interpreted as indicators of acceptance of "warrior" and "good host" stereotypes. Neither of the measures depended on the experimental inductions. Neither omnibus tests nor any of the additional analysis revealed any significant effects on the measures (Figure 9). The finding was replicated using alternative measures of self-stereotyping - distances between the self and group ratings on the traits, as well as differences between self-ratings on stereotypical and non-stereotypical traits.

Figure 9

Mean self-ratings of scores on acceptance of "warrior" and "good host" stereotypes

"warrior"   "good host"
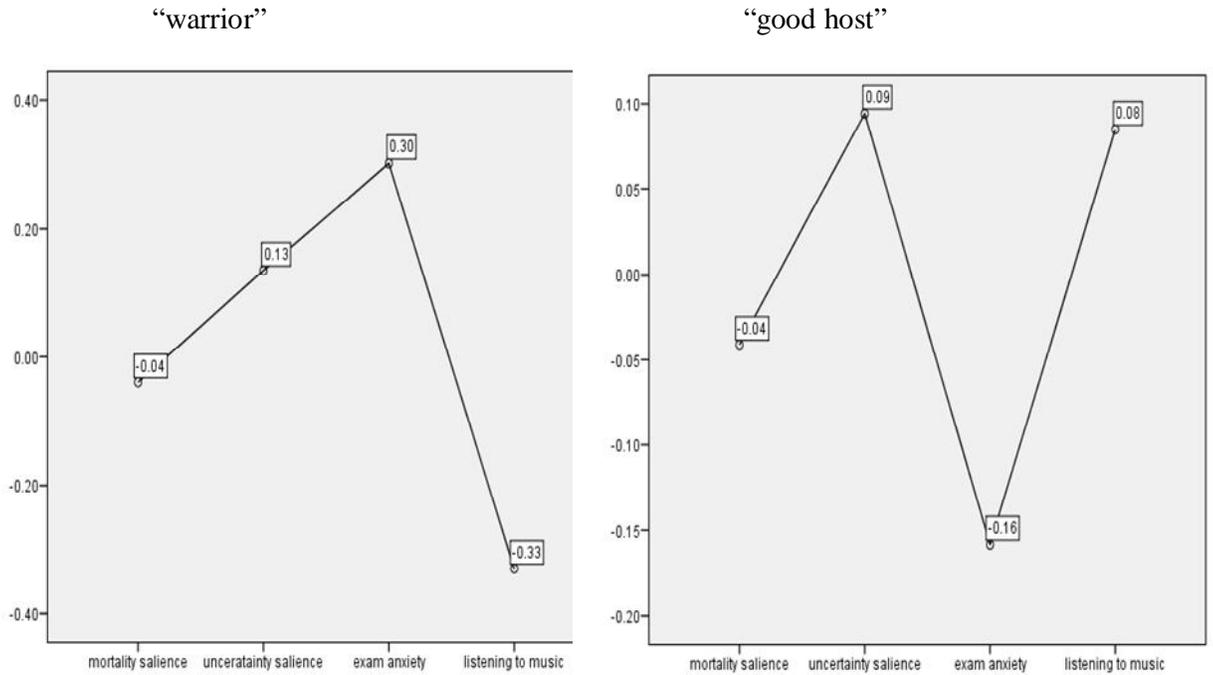
*Note: the measures presented are factor scores on the two components from the ratings of the original traits.

f. Effects of mortality salience on the global measure of collective enhancement

Lastly, we tested the effects of experimental inductions on the first extracted principal component, representing a global measure of collective self-enhancement. The omnibus test yielded significant differences, $F (3, 78) = 2.70$, $p = .051$. The planned contrasts indicated that mortality salient participants demonstrated more collective self-enhancement compared to other groups $t (78) = 2.31$, $p = .012$ (one-sided), $r = .25$ (Figure 10). The contrast with the uncertainty salient condition approached statistical significance, $t (78) = 1.32$, $p =.094$ (one-sided). The same holds true for the exam

anxiety salient condition, t (78) = 1.46, p =.074 (one-sided), while the contrast with the control condition was highly significant, t (78) = 2.84, p =.003 (one-sided).

Analysis with a composite measure, derived from averages of all the dependent variables, replicated these results.

Figure 10

Effects of experimental inductions on the first principal component (global collective enhancement)
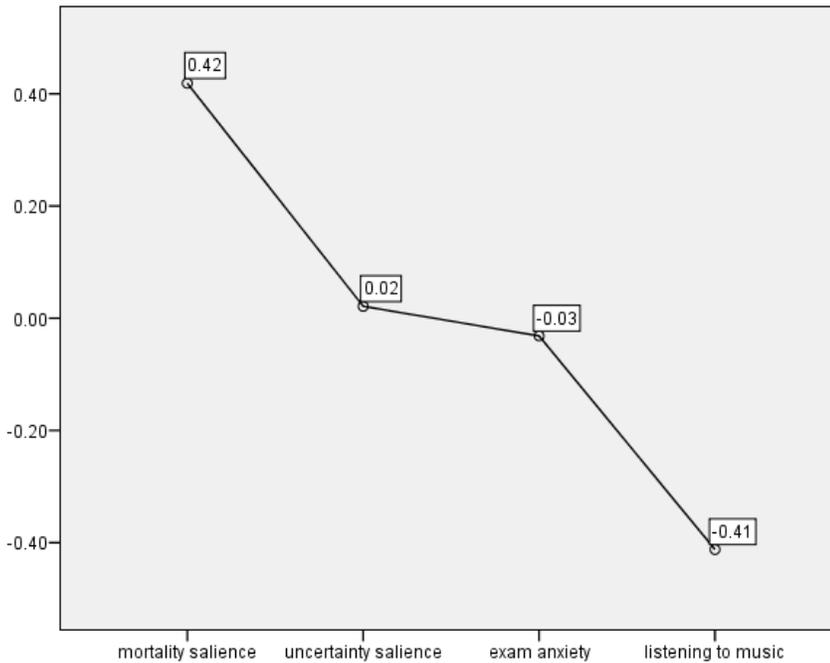
g. Relations of dependent measures in different conditions

To get an insight into how experimental inductions affected relationships between dependent measures, we investigated their inter-correlations in different experimental conditions. We can observe that pattern of inter-correlations changes in different conditions – while there are virtually no significant correlations in the control condition, in the mortality and uncertainty salience conditions especially measures of identification with the group get substantial correlations with other measures. This is a trend that

further supports the hypothesized effects, but due to small subsamples in the present experiment, we will not investigate the issue more thoroughly.

h. Testing moderator effects of trait anxiety

As a first step, we inspected relations between trait anxiety and collective self-enhancement strategies. A negative correlation emerged between anxiety and the acceptance of "good host" stereotype as characteristic of self ($r = -.21$, $p =.029$). No correlations were observed with other dependent variables.

We conducted moderation analysis using PROCESS for SPSS and SAS macro, based on 1000 bootstrapping resamples (A. Hayes, 2013). We tested for moderation effects of trait anxiety on the effects of death reminders on collective self-enhancement strategies: identification with the group, perceptions of entitativity, perceptions of group positivity and stereotypes, as well as self-stereotyping along the lines of the described "warrior" and "good host" stereotypes.

The analyses yielded non-significant results of moderator effects of trait anxiety on either of the dependent variables (Table 13). Trait anxiety was significantly related to the tendency to perceive the group as more entitative ($b = .88$, 95% CI -.02 to 1.78, $p = .056$).

However, there was no interaction of trait anxiety and experimental inductions – both participants with higher and lower levels of trait anxiety responded to the inductions in a similar manner.

Table 13

Moderator effects of global anxiety on reactions to experimental inductions

	b	95% CI	p
identification	-.21	-.63, .21	.328
entitativity	-.21	-.54, .12	.204
group stereotypes	.11	-.12,.33	.357
groups positivity	.07	-.13, .27	.491
warrior SST	.11	-.46,.48	.962
good host SST	.16	-.31,.62	.494

*Note: b denotes regression coefficient from moderation analysis for the interaction of IV and self-esteem, 95% CI = 95% confidence interval

Discussion

In the present experiment, we investigated whether induction of mortality salience lead participants to identify more strongly with the ethnic group, perceive the group as more unified and more in accordance with the stereotypes, as well to ascribe to themselves by traits stereotypical of the group. Generally speaking, the results obtained support the hypothesis, indicating a generally more prominent tendency for collective self-enhancement after being reminded of death. The observed effects sizes are small to moderate, which could be expected given the subtle nature of the inductions, as well as the facts that processes being investigated are rather implicit.

The answer to our primary research question is thus positive – to put it in more general terms, being reminded of death activates proneness to strengthen ties with important social groups (Arndt et al., 2002; Castano, 2004; Castano et al., 2002. Castano et al., 2004; Dechesne et al., 2000; Greenberg et al., 1990). According to terror management theory, this effect can be interpreted as an argument in favour of the basically defensive (protective) role of social identifications, the one in alleviating basic existential concerns. In further support of a quite general character of this role, participants with

relatively higher and lower levels of trait anxiety did not differ in their reactions to mortality reminders.

Having in mind the perspective of the socio-cultural context of the research, this important role of social identifications can be understood as both an effect and a cause. Since the ethnic identity is predominantly conceived of as a primordial one (Milošević Đorđević, 2005; 2007; Turjačanin & Majstorović, 2013), this makes it particularly disposed to serve this protective function. On the other hand, becoming such a bedrock on which the construction of the social world is founded, the strong identification with ethnicity has a number of consequences in the domain of socially relevant perceptions and behaviours, such as less inclusiveness and complexity of multiple social identities, less favourable attitudes towards out-groups, both ethnically and otherwise different, to mention some (Branković et al., 2015). These effects, as our findings indicate, could be even more prominent when basic existential concerns and anxieties are salient, for instance at uncertain time of war, crisis etc. Theoretically speaking, this explanation could at least partly account in retrospect for the social events from the previous decades in the region. Certainly, this account should be further tested, particularly in the direction of assessing the consequences of mortality salience for a range of societal attitudes and behaviours and also investigating the potentially mediating role of the strength of ethnic identification.

We shall now turn to the issue of whether the effects of mortality salience are specific, i.e. whether it is thinking of death that instigates these defensive reactions or whether the reactions are more generally prompted by other kind of existential or, even more generally, more everyday concerns. The answer to this question is less straightforward. Judging from the effects on the global collective enhancement measures, it is not possible to clearly delineate the effects of mortality and uncertainty salience.

We therefore compared each of the inductions with the control condition, to inspect which of the inductions produced effects. We can observe that thinking about exams did not produce significant effects, apart from a heightened tendency to embrace the "warrior" self-stereotype. This finding is difficult to interpret from the current data and should be further investigated. However, comparing the effects of mortality and uncertainty salience gives a more ambiguous picture. In some cases the MS induction

produces significant effects when the uncertainty salience does not while in others both manipulations are equally effective or ineffective (an overview is provided in Table 14).

Table 14

Comparison of the effects of mortality and uncertainty salience

	mortality salience	uncertainty salience	exam salience
identification	+	-	-
entitativity	+	-	-
stereotypes (+)	+	+	-
stereotypes (-)	+	-	-
positivity (+)	+	+	-
positivity (-)	+	-	-
self-stereotyping	-	-	+ (warrior)

The first insight provided by the current findings is that whether it is mortality or uncertainty that is the most important issue might not be a proper question to ask (e.g. Castano et al., 2011; Landau et al., 2004; Hohman & Hogg, 2011; McGregor et al., 2001; van den Bos, 2009). Rather, it seems that both can affect *certain* outcomes and a more advisable approach would be to discern which are affected by which and under what circumstances.

A tentative conclusion suggested by present analyses is that the uncertainty induction affected primarily whether the group was perceived in accordance with the stereotypes. This would be consistent with the general logic behind the uncertainty management theory (van den Bos, 2001, 2009), although the lack of other effects would be difficult to explain from its perspective. The finding that does not quite fit in this framework is the effect of uncertainty on general positivity of group traits. However, this finding could mirror the fact that positivity of group perception includes both stereotypical and non-stereotypical traits. We therefore extracted only the non-stereotypical positive traits and tested the effects of the experimental inductions, to have a more precise picture of the differential effects. The omnibus analysis yielded significant results, $F(3, 78) = 3.62$, $p = .017$, and the planned contrasts revealed that after thinking about death, participants ascribed more non-stereotypically positive traits to the ethnic group, $t(78)$

= 2.94, p = .002 (one-sided). Critically for the present discussion, there was a marginally significant difference between the mortality and uncertainty salience conditions, t (78) = 1.56, p = .061 (one-sided).

Mortality salience thus affected not only these perceptions of stereotypes, but also the extent to which participants viewed their in-group as a unity, in positive terms and how close they felt towards it, consistent with previous findings (Castano et al., 2002; Castano et al., 2004). Particularly, mortality salient participants were less inclined to ascribe negative (both stereotypical and non-stereotypical) traits to the in-group, suggesting that death reminders might heighten the salience of the positivity more than stereotypicality issues (cf. Schimel et al., 1999). This tentative conclusion should be further tested in future research.

The only variable that was not affected by any of the experimental inductions was self-stereotyping. One issue that presently comes to mind is that there appear to be several different group stereotypes and that individuals could differ in accepting them. We have managed to recognize two of them, termed the "warrior" and "good host" stereotypes, but perhaps there are also different ones. Another observation is that participants typically display a tendency to accept the stereotypically positive and refute the stereotypically negative traits, suggesting a more global self-enhancement tendency. On the other hand, the measures of self-stereotyping do correlate (though not so strongly) with the measures of positivity of group perception. Taken together, these findings are suggestive of what could be termed an individuation – de-inviduation collision in identity strategies provoked by the experimental inductions. They could reflect an individual self-enhancement strategy that stands in collision with the collective strategy of identifying with the traits characteristic of the group (see also Yalom, 1980). We will get back the issue of individual vs. collective enhancement shortly.

Another one of the research goals was to investigate relationships between variables reflecting various strategies of collective self-enhancement. Previous research has demonstrated usefulness and reliability of these measures, but typically studies have focused on a more limited subset of the variables (e.g. Castano, 2004; Reid & Hogg, 2005, Spears at al., 1997). Findings about their interrelations are therefore both rare, and if they exist, equivocal with regard to the issue of whether these measures are different aspects of a more global strategy of collective enhancement or they reflect discernable

processes connected with social identifications. Findings from the present study support the former stance. Although the variables included do not seem to overlap, findings from the factor analysis lend support to the conclusion that they are manifestations of a more global tendency. It should be noted that self-stereotyping measures make somewhat of an exception, judging both from lower correlations with other variables and the differential effects of experimental inductions.

A related issue in the context of terror management research is whether some of the variables could be mediating the influence of mortality reminders on other variables. Some studies suggest that perceptions of collective continuity and entitativity play such a role (Herrera & Sani, 2013). The authors suggest that it is the perceptions of the group as unified and having a temporal continuity provide the prerequisites for the identification to have anxiety buffering capacity. The more specific roles of different collective enhancement strategies should be further investigated.

Finally, we will attempt to view the findings from the perspective of individual vs. collective self-enhancement. The theoretical framework of social identity theory speaks clearly to the self-esteem function of social identifications (Hogg & Abrams, 1998; Tajfel, 1974, 1982; Turner et al., 1994). Some of the present findings that support this contention are the significant relations between measures of identification with the group and positivity of group perception. In addition, when reminded of death, participants tend to view the group more positively, but also *less negatively*, which suggest the need to enhance the positive perception of the group (in line with some previous research, e.g. Biernat, et al., 1996; Yang & Hong, 2010). Also relevant in this respect are the findings that positive and negative items consistently loaded on different factors and that the effects of manipulations differed.

Another interesting point is that the data imply that individual enhancement, expressed as the tendency to ascribe positive traits to oneself, is universally present (e.g. in all the experimental conditions, participants averaged around 4 on a 5-point scale), while its collective counterpart was more sensitive to experimental inductions (average ratings for positive group traits linearly rise from the midpoint of the scale upwards through experimental conditions). Collective enhancement appears to be more specifically related to salience of concerns and anxieties – whereas normally students would enhance their individual self, when threatened with basic anxieties, they appear to seek

refuge within a larger-than-self entity. This is in line with the previous research (e.g. Castano et al., 2004, Mullin & Hogg, 1998) and theorizing suggesting that it is only through the collective identities that an alleviation of the most basic concerns can be attained. In the following study we will test the effect of basic existential concerns on individual self-enhancement strategies directly and using different reliable measures.

Experiment 3: Individual Self-Enhancement Strategies

In this experiment, we investigated the effects of morality salience on individual enhancement strategies, i.e. strategies aimed at protection and enhancement of a positive self-image. We expected that participants induced to think about death would engage in these strategies to a larger extent compared to participants who thought about life uncertainty/ exams/ listening to music.

Design

We designed the experiment to be parallel with Experiment II: it had a unifactorial design, with four independent groups:

> 1. a group that thought about mortality salience
>
> 2. a group that thought about life uncertainty
>
> 3. a group that thought about exams
>
> 4. a group that thought about listening to music (control).

The participants first underwent the induction of relevant thoughts, and afterwards, their self-enhancement tendencies were measured, through multiple indicators: a. biased retrieval of self-relevant information, b. better-than-average effect, c. unrealistic optimism. We also investigated the moderator effects of a. global trait self-esteem, and b. trait anxiety.

Participants

Psychology students attending their second year of studies at the Faculty of media and communications in Belgrade ($N = 85$) participated in exchange for course credit. Seventy percent were female, reflecting the actual gender distribution. Participants' age ranged from 19 to 47 years, with an average of 22.42 ($SD = 5.89$) years. They were randomized into one of the four conditions, resulting in 20 to 22 participants per condition.

Instruments

The scale of death anxiety/ life uncertainty/ exam anxiety/ experience of listening to music, described in the methodology chapter, were used for experimental inductions.

Positive and negative affect schedule (*PANAS*, Watson, Clark, & Tellegen, 1988) was used as a distractor and a measure of affective states.

Individual self-enhancement questionnaire was constructed for this study with three segments (the complete questionnaire can be found in Appendix V):

1) Participants were asked to think about and briefly describe five autobiographical events, that they actively participated in, that first came to mind (Žeželj, 2012). We asked them to rate: a. the event valence (the extent to which they associated positive or negative feelings with the event; from 1 (*extremely negative*) to 5 (*extremely positive*), b. the importance of the event for the present life experiences of the person (*How important would you say this event is for the person that you are now?*) on a 5-point scale.

2) Participants were then presented with a list of 16 desirable and undesirable traits. Traits were varied according to ambiguity dimension: some of the traits were possible to define in different manners (e.g. *creative, reasonable, neurotic*) while others had a more specific meaning (e.g. *punctual, well-read, untidy*) (following Beauregard & Dunning, 2001) (complete list provided in Table 15). For each trait, participants rated the extent to which the trait was characteristic of themselves, in comparison with other students, on a 5-point scale anchored at 1 (*much less than others*) and 5 (*much more than others*). We asked them to rate positivity of the trait and importance (centrality) of the trait, as control measures.

3) Participants rated the probability that each of five positive and five negative events would happen to themselves or an average student of the same sex from their university (following Weinstein, 1980). The events were chosen based on the following criteria: a. the event is common, and it could happen to anyone, b. the events are clearly valenced (positive or negative) and relatively balanced regarding intensity, c. the events are perceived as relatively controllable (Klein & Helweg-Larsen, 2002).

Table 15

Traits rated in the „better-than-average"task

	positive	negative
	tidy	sarcastic
unambiguous	well-read	gullible
	punctual	clumsy
	conscientious	boastful
	reasonable	neurotic
ambiguous	creative	impractical
	tolerant	insecure
	smart	inconsistent

We specifically based our selection on the data from a previous study conducted with students in Serbia (Teovanović, 2013), and chose the events that had ratings clearly above/ below average as well as events whose ratings were significantly different for self and others (at group level). We made small changes in wording in two of the items. The events selected are presented in Table 16. Participants rated the probability on a 7-point scale, with points being expressed as probabilities (from 5 % to 95% at 10 unit intervals). We first asked for personal ratings whereas the ratings of probability for others were given on a separate page and in a changed order, to prevent remembering the previously given ratings.

Table 16

Events rated for the scale of unrealistic optimism

positive events	negative events
will have a job they like	will have drinking problems
will have good health at the age of 60	will drop out of college
will change job for a better one	will have heart attack before the age of 50
will own their own apartment	will divorce after a few years of marriage
will find a job within a year from graduation	will be infected by a sexually transmitted disease

To measure trait **self-esteem**, we adapted the Tafarodi and Swann (2001) scale.

To measure **trait anxiety** we adapted the State-trait anxiety inventory (*STAI,* Spielberger et al., 1977).

Word fragment completion task, described in the previous chapter, was used as a manipulation check.

Procedure

The experiment followed a procedure identical to the one described in Experiment 2. We presented the study as a series of personality measures, unrelated to one another, and the participants were successively distributed booklets in the following order:

1. Self-esteem and anxiety scales

2. Death anxiety scale (alt. life uncertainty – exam anxiety – experience of listening to music), as the experimental manipulation

3. PANAS scale and thought- listing task (as distractors)

4. Word fragment completion task

5. Individual self-enhancement strategies questionnaire

To make the individual identity more salient, we sought to raise self-awareness of the participants, through the following instruction: *In the following we will ask you to focus on yourselves. We will first ask to think about what makes you different from the other persons you know* (following Silvia & Eichstaedt, 2004). The order of the dependent variables was counterbalanced.

6. Participants were thanked and debriefed, following the procedure described in the methods section.

Operationalization of variables

The **independent variable** was operationalized using the previously described procedure.

Dependent variables

    a. Biased retrieval of self-relevant information

Biases in autobiographical memory were expressed by two indices: a. an index of memory positivity (number of negative events subtracted from the number of positive events), b. an index of continuity – average rating of the continuity between the event and the present experiences (Landau et al., 2009).

On average, students recalled more positive than negative events– the index of memory positivity had a mean value of 1.87 ($SD = 1.94$), i.e. on average positive events outnumbered the negative by two. This finding is indicative of a positivity bias in retrieval. Participants also rated the events recalled as relatively important for their present life experiences – the index of continuity averaged in 4.31 on a 5-point scale ($SD = .61$) ($\alpha = .58$).

    b. Better-than-average effect

We applied the direct measurement of the effect – asking participants to rate themselves against a referent group directly - since this procedure was previously proven to produce the most robust effects (Sedikides & Gregg, 2003; Alicke & Govorun, 2005). We computed average ratings for positive and negative traits. We concluded that the effect was present in cases where: a. positive trait ratings were above the theoretical midpoint of the scale (the midpoint indicating that the trait was not more or less characteristic of self than an average peer), and b. negative trait ratings below the theoretical midpoint of the scale.

We were able to observe the expected better-than-average effect in that ratings of positive traits averaged significantly above the theoretical midpoint of the scale: $M_{pos} = 3.72$ ($SD = 0.42$), $t(84) = 15.91$, $p < .001$, $r = .87$. The opposite was true for negative traits, they averaged significantly below the midpoint of the scale: $M_{neg} = 2.5$ ($SD = 0.55$), $t(84) = -7.88$, $p < .001$, $r = .65$. We present the average ratings and standard deviations for each of the traits in Table 17.

It should also be noted that the ratings of trait positivity that participants provided corroborated the pre-classification of traits as positive or negative. Ratings of trait importance also supported the revealed pattern of self-enhancement. Results revealed that the positive traits were rated as more important ($M_{pos} = 4.38$, $SD = .35$) than

negative traits (M_{neg} = 2.06, SD = .80), t (84) = 23.05, p < .001. Importance ratings for each of the traits conformed to this effect.

Table 17

Average ratings of the traits in better-than-average task

trait	mean	standard deviation
reasonable	4.16	.84
tolerant	3.88	1.01
punctual	3.87	1.13
conscientious	3.77	.89
smart	3.74	.81
creative	3.52	1.00
tidy	3.45	.98
well-read	3.39	.93
sarcastic	2.99	1.24
gullible	2.78	1.30
insecure	2.72	1.16
clumsy	2.61	.99
neurotic	2.50	1.22
impractical	2.23	1.06
inconsistent	2.21	.96
boastful	2.12	1.05

*Note: ratings were given on a 5-point scale, the participants rated how characteristic the trait is for themselves compared to an average peer

We subjected the ratings to a principal component analysis since the conditions for the application of this analysis were met (KMO=.61, Bartlett's test of sphericity was significant, p < .001). Five principal components were extracted that had eigenvalues above 1, explaining 60% of the variance. The first component explained 20% of the variance and had loadings from each of the traits rated, highest ones from *impractical* (0.68), *inconsistent* (.66), *conscientious* (-.62) and *punctual* (-.56). This component can

be interpreted as reflecting a perception of self as "easy-going". The second component explained 13% of the variance and had highest loadings from *smart* (.65), *creative* (.64), *boastful* (.49) and *sarcastic* (.43) – this corresponds to a self-image of a "reckless genius". The third component that explained additional 10% of the variance indicated a perception of a "good-hearted person", judging from its loadings on *tolerant* (.77), *reasonable* (.52) and *gullible* (.46). The fourth and fifth component explained around 8% of the variance each. The fourth component indicates a perception of a "neurotic" person, with highest loadings from *insecure* (.48), *neurotic* (.46) and *sarcastic* (.43), while the fifth most closely corresponds to a "geekish" self-perception, with loadings from *well-read* (.58), *insecure* (.49) and *clumsy* (.46).

It is obvious that we did not observe any clear distinctions between positive and negative traits. Perceptions are structured according to some loosely defined personality prototypes, each of which encompassed both positive and negative traits. However, to demonstrate the better-than-average effect these prototypes would not be suitable since it is crucial that the ratings of positive and negative traits take opposite directions.

The other important distinction that was made in trait classification, i.e. the one between ambiguous and non-ambiguous traits, did not emerge in the factor analysis either. However, comparison of mean self-ratings for ambiguous and non-ambiguous traits demonstrated significant differences. The more ambiguous positive traits afforded slightly more pronounced self-enhancement (M_{amb} = 3.84 (0.58), M_{unamb} = 3.62 (0.62), t (84) = -2.37, p = .020), as well as the more ambiguous negative traits (M_{amb} = 2.42 (0.73), M_{unamb} = 2.63 (0.62), t (84) = 2.55, p = .012).

To provide a suitable measure of the better-than-average effect we opted for a cumulative indicator based on ratings of all the traits, negative traits being recoded to a positive direction. This measure demonstrated acceptable internal consistency (α = .65). Since the distinctions between positive/negative and ambiguous/non-ambiguous traits also proved relevant, we will replicate the analyses using measures based on subsets of traits.

c. Unrealistic optimism

We calculated the average ratings of probability for positive and negative events. Unrealistic optimism can be operationalized in two ways. At a personal level, indicators

of unrealistic optimism were considered to be: a. ratings of probability higher than chance (50%) for positive events and b. ratings lower than chance (50%) for negative events. On the other hand, another indicator of unrealistic optimism would be differences in the perceived probability of events happening to oneself and others (an average peer).

Findings suggested that students indeed demonstrated unrealistic optimism in perceptions of future events for both self, t (84) = 19.23, $p < .001$, $r = 0.90$ and others (average peer), t (83) = 10.31, $p < .001$, $r = 0.75$.

Furthermore, students rated that probability of positive events happening to themselves was *higher* than for others and, conversely, that they would be *less likely* to experience negative events (means and statistic are detailed in Table 18). Unrealistic optimism was more pronounced in perceptions of negative events, compared to positive ones.

Table 18

Mean ratings of probability of positive and negative events

	self	other	difference (*t* statistic)	*p*	*r*
positive events	5.04 (1.04)	4.6 (0.88)	3.64	.000	.37
negative events	1.98 (0.83)	3.12 (0.95)	-8.8	.000	.70

*Note: Numbers given are means (and standard deviations) of ratings on a 7-point scale. Rating 4 denotes 50% probability. Effect sizes are expressed through *r* coefficient.

The other possible measure of unrealistic optimism was the differences between self and other ratings (in absolute terms since different directions are expected for positive and negative events). Interestingly, a non-significant correlation was observed between the difference measure and self-probability ratings ($r = -.12$). It appears that the measures tap into different aspects of the construct, if not into completely different constructs. However, given that unrealistic optimism is demonstrated in perceptions of future events for both self and others, and more pronounced in self-ratings, we believe that self-ratings of the probability of future events correspond most closely to the theoretical

construct we wish to examine. We will nevertheless conduct tests of experimental effects on both measures.

We will also present ratings of probability for individual events, to gain a more detailed understanding of the effect (Table 19). We can observe from the ratings that positive events are consistently rated as more probable for self than others while a reversed pattern emerges for negative events.

Table 19

Mean probability ratings for individual events, for self and an average peer

event	mean rating (*SD*) for self	mean rating (*SD*) for other
will have a job they like	5.84 (1.19)	4.48 (1.26)
will own their own apartment	5.71 (1.53)	5.21 (1.34)
will have good health at the age of 60	4.63 (1.60)	4.32 (1.30)
will change job for a better one	4.55 (1.58)	4.99 (1.25)
will find a job within a year from graduation	4.52 (1.75)	4.00 (1.49)
will divorce after a few years of marriage	2.67 (1.51)	3.62 (1.24)
will have heart attack before the age of 50	2.13 (1.29)	2.36 (1.17)
will drop out of college	1.76 (1.20)	3.52 (1.43)
will have drinking problems	1.75 (1.19)	3.31 (1.49)
will be infected by a sexually transmitted disease	1.61 (1.05)	2.82 (1.50)

We conducted a principal component analysis on the self-ratings of probability (KMO=.67, Bartlett's test of sphericity was significant, $p < .001$). Three components emerged with eigenvalues above 1, explaining 30, 22 and 10% of the variance, respectively. All of the items loaded on the first component, positive events positively and negative events negatively, which indicates a global measure of unrealistic optimism. The second component was loaded with some of the negative events (contracting a sexually transmitted disease, having troubles with alcoholism, getting divorced), as well as some of the positive events (changing a job or owning one's apartment). The interpretation of this component is not entirely straightforward, but it can be said to reflect expectations related to an independent and non-conformist lifestyle. The third component is most specifically related to the perception of probability that one will drop out from college. Since the basic structure of the scale appears to be unidimensional and since the items make a reliable scale (negative items recoded in the positive direction, $\alpha = .70$), we will use this general measure as the measure of unrealistic optimism. Given the specificity of the individual events (e.g. some of them are related to expectations about health which could be particularly salient after reminders of death) we will also test the hypotheses on the ratings of probability for individual events.

Relations between measures of individual self-enhancement

To investigate the relations between dependent measures and examine whether a single aggregated indicator of self-enhancement tendencies can be computed, we conducted correlational and factor analyses. Inter-correlations between measures are presented in the Table 20.

As can be seen from the table, the correlations are positive (all of them, at least, approach statistical significance) but rather weak. We conducted a principal component analysis on the dependent measures (KMO = .595, Bartlett's test of sphericity was significant, $p < .001$). One principal component was extracted that explained 43% of the variance, and that could be interpreted as a general measure of individual self-enhancement tendencies, with loadings from all of the measures included.

Table 20

Inter-correlations of dependent measures

	Memory positivity	Memory continuity	Better-than-average	Unrealistic optimism
Memory positivity	*			
Memory continuity	.16	*		
Better-than-average	.21*	.15	*	
Unrealistic optimism	.16	.22(*)	.48(**)	*

** Correlation is significant at 0.01 level. * Correlation is significant at 0.05 level.

Our findings suggest that different self-enhancement strategies remain distinctive and cannot be reduced to a single tendency, but do seem to share a fundamental underlying dimension. We will, therefore, test the hypotheses on the measures of original variables, and additionally on the aggregated measure of self-enhancement tendencies.

Testing the effects of mortality salience on individual self-enhancement

From the previous analyses, we can conclude that participants demonstrated unambiguous tendencies to self-enhance through: biased retrieval of autobiographic events, rating themselves as better than average on various personality traits, as well as expressing unrealistic optimism about future events. Now we turn to our core research question: do mortality reminders enhance these tendencies?

We hypothesized that participants reminded of personal mortality would strive to protect and strengthen their positive self-image through means at their disposal – i.e. in this particular case, through using the described self-enhancement strategies. We will test this effect against conditions in which participants previously thought about life uncertainty, exam anxiety or a neutral topic (listening to music).

As in the previous experiment, we tested the effects via analysis of variance, and follow it up with planned comparisons (detailed in the previous chapter).

a. Effects of mortality salience on biased retrieval of autobiographical events

As we have shown, participants demonstrated memory bias in that they retrieved more positive than negative autobiographical events. An omnibus ANOVA test did not reveal significant effects of experimental inductions on the magnitude of this bias, operationalized as the index of memory positivity. Follow-up analyses also failed to reveal any significant differences between the conditions (Table 21).

Table 21

Effect of experimental inductions on indexes of biased retrieval

	mortality salience	uncertainty salience	exam anxiety	control	*F* statistic
memory positivity	1.95 (2.04)	2.18 (1.65)	1.68 (1.91)	1.65 (2.25)	.347
memory continuity	4.04 (.81)	4.45 (.43)	4.28 (.65)	4.48 (.41)	2.40

*Note: numbers given are means (and standard deviations). Index of memory positivity was computed by subtracting number of negative events from the number of positive events (max number of events recalled was 5). Index of memory continuity ranged from 1 to 5.

On the other hand, the perceived continuity of memories tended to differ in participants from different conditions. We obtained a marginally significant omnibus test, F (3, 81) = 2.49, p =.074, which we followed up with planned comparisons. Participants who were reminded of death perceived *less* continuity of memories with the present life

compared to other conditions, t (25.27^{16}) = -1.95, p = $.031^{17}$, r = .36. Further comparisons revealed that mortality salience led to less perceived continuity compared to uncertainty salience t (30.04) = -2.06, p = .024 and control conditions, t (30.14) = - 2.22, p = .017 (Table 21).

The direction of the differences was evidently opposite to the one hypothesized – we expected that reminders of death would lead participants to perceive autobiographical events as more important for their present life than participants from other conditions, but what we observed lends itself more readily to be interpreted as a contrast effect. To put it simply, after thinking about death, everything else seems a bit less important. If this is the case, it would not be possible to speak of a self-enhancement strategy.

However, it could be the case that death reminders lead to a tendency to emphasize the importance of positive and de-emphasize the importance of negative events. To test this alternative interpretation, we devised a measure of memory bias in which positivity of memories was weighted by the ratings of their importance (provided by participants). We did not observe any effects of the experimental inductions on this measure. Furthermore, correlations between the ratings of positivity and importance of memories were only significant in the exam anxiety condition. Our interpretations have thus been corroborated.

b. Effects of mortality salience on better-than-average effect

Previous findings showed that participants did indeed perceive themselves as better than an average peer. The omnibus analysis did not demonstrate the effects of experimental inductions on this tendency; however, we did observe a marginally significant contrast between mortality salience and other conditions, t (81) = 1.35, p = .091 (Table 22). The difference between mortality and uncertainty salience conditions reached conventional levels of statistical significance, t (81) = 1.63, p = .053. Participants who thought about death tended to ascribe themselves positive and denounce negative traits to a somewhat larger extent compared to participants who thought about other concerns.

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[16] We used correction since the assumption of equal variances was not met in the case of this variable.

[17] All of the significance levels reported for planned comparisons are one-tailed.

Apart from the general index, we conducted separate analyses for four groups of traits: ambiguous and non-ambiguous positive, as well as ambiguous and non-ambiguous negative traits. The only significant contrast we observed was a less pronounced tendency to ascribe oneself unambiguous positive traits after reminders of life uncertainty, as compared with mortality, $t(81) = 1.99$, $p = .025$, $r = .21$. Participants also tended to embrace negative traits to a larger extent after being reminded of uncertainty, $t(81) = -1.38$, $p = .086$. It should be noted that mortality salience tended to induce opposite reactions – somewhat larger embracing of ambiguous positive and lesser embracing of ambiguous negative traits.

We can conclude that a defensive function of better-than-average effect in alleviating death-related concerns was corroborated for our participants, but the effect observed was very slight. It might be the case that uncertainty and mortality salience inductions had reversed effects on this tendency.

Table 22

Effects of experimental inductions on BTA and unrealistic optimism

	mortality salience	uncertainty salience	exam anxiety	control	*F* statistic
BTA	3.71 (.45)	3.50 (.45)	3.64 (.42)	3.55 (.37)	1.05
unrealistic optimism	5.54 (.70)	5.56 (.66)	5.62 (.75)	5.37 (.84)	.442

*Note: numbers given are means (and standard deviations). BTA = better-than average, rated on a 5-point scale. Unrealistic optimism was rated on a 7-point scale.

c. Effects of mortality salience on unrealistic optimism

Unrealistic optimism means that participants believe that it is more likely that they will experience positive and less likely that they will experience negative events in their future. This tendency was clearly demonstrated in the previous analysis. Analysis of

variance did not reveal any differences in this tendency as a result of experimental inductions. We did not find any significant omnibus effects or contrasts (means are given in Table 22 above). We replicated these findings using the difference measure of probability ratings for self and others.

We also tested ratings of the probability of individual events for these effects. Only two of the events demonstrated significant effects. Significant differences were observed in the rated probability of dropping out of college, $F(3, 81) = 2.78$, $p = .046$, $r = .30$. The contrast between mortality salience and other conditions was marginally significant, the significant difference being the one against the control situation, $t(27.88) = -2.19$, $p = .018$, $r = .38$. Participants who thought about death perceived their chances of dropping out of college as lower than participants who thought about listening to music. Somewhat speculatively, thinking about this serious topic might have sensitized participants to the importance of their current life-project, i.e. education.

On the other hand, participants reminded of death perceived the prospects of finding a job within a year after graduation as *less probable* ($M = 3.95$) than participants in other conditions ($M = 4.69$), $t(81) = -1.70$, $p = .046$, $r = .18$.

We can conclude from the results that death-concern alleviating function of unrealistic optimism was not supported. We can see that in some cases thinking about death even *decreased* rather than increased unrealistic optimism.

  d. Effects of mortality salience on the composite measure of individual self-enhancement

We tested the effects of experimental inductions on the first extracted principal component, i.e. a composite measure of individual self-enhancement tendencies, to provide a more robust test. We did not observe any significant effects of mortality reminders on the global tendency to self-enhance, i.e. protect and enhance the individual self-image.

  e. Testing moderator effects of trait anxiety and self-esteem

The general absence of the mortality salience effects might be attributable to the operation of some moderator variables. We specified two potential moderators: trait

anxiety and trait (global) self-esteem since these two relatively stable individual difference variables could influence the relevant strategies for alleviating death concerns. We hypothesized that mortality reminders would lead to stronger tendencies to self-enhance in persons with a. higher levels of self-esteem, b. higher levels of state general anxiety.

As a first step, we inspected relations between moderator variables and self-enhancement strategies. Self-esteem was consistently positively related to self-enhancement strategies, while the opposite was true of trait anxiety, as can be seen from Table 23. Only memory continuity was not related to either of the moderators.

Table 23

Correlations between moderator variables and self-enhancement strategies

	memory positivity	memory continuity	BTA	unrealistic optimism
self-esteem	.30**	.11	.54**	.45**
trait anxiety	-.27**	-.05	-.48**	-.45**

** Correlation is significant at 0.01 level. * Correlation is significant at 0.05 level.

We conducted moderation analysis using PROCESS for SPSS and SAS macro, based on 1000 bootstrapping resamples (A. Hayes, 2013). We tested for moderation effects of self-esteem and global anxiety on the effects of death reminders on self-enhancement strategies: memory biases, better-than-average effect and unrealistic optimism.

The analyses yielded non-significant results of moderator effects of self-esteem on either of the dependent variables (statistics are given in Table 24). Self-esteem was significantly related to the tendency to rate oneself as better than average ($b = .50$, 95% CI .14 to .87, $p = .008$). However, there was no interaction of self-esteem and experimental inductions – both participants with higher and lower levels of self-esteem reacted to the inductions in a similar manner.

Table 24

Moderator effects of self-esteem on reactions to experimental inductions

	b	95% CI	*p*
memory positivity	.52	-.138, 1.18	.119
memory continuity	-.05	-.26, .17	.658
BTA	-.04	-.17, .09	.532
unrealistic optimism	.00	-.23, .24	.988

*Note: b denotes regression coefficient from moderation analysis for the interaction of IV and self-esteem, 95% CI = 95% confidence interval

Identical findings were obtained in moderation analysis of global anxiety – tests yielded non-significant results (detailed in the Table 25). Participants who differed in chronic levels of anxiety did not react to experimental inductions differently either. STAI affected the tendency to rate oneself better than average directly (b = -.52, 95% CI -.96 to -.07, p =.024), i.e. more anxious individuals demonstrated this effect to a lesser extent.

Table 25

Moderator effects of global trait anxiety on reactions to experimental inductions

	b	95% CI	*p*
memory positivity	-.36	--1.10, .39	.342
memory continuity	-.01	-.25, .22	.899
BTA	.05	-.10, .20	.514
unrealistic optimism	.17	-.09, .42	.207

*Note: b denotes regression coefficient from moderation analysis for the interaction of IV and trait-anxiety, 95% CI = 95% confidence interval

Discussion

In the present study, we sought to investigate whether reminding participants of death would lead to a strengthened tendency to enhance the individual self-image, i.e. to demonstrate positivity and continuity bias in autobiographical memory, the tendency to endorse positive traits as more characteristic and negative traits as less characteristic for oneself than an average peer, as well as unrealistic optimism – tendency to judge that it is more likely that one will experience positive than negative events in the future.

Firstly, we have observed that participants did indeed self-enhance, in line with much of the previous research (e.g. Alicke & Govorun, 2005; Kunda, 1990, 1999; Sedikides & Gregg, 2003; Taylor & Brown, 1988; Weinstein, 1980). The findings were very convincing, as they were found consistently across the dependent measures: students recalled more positive than negative events from personal life, and rated the events as fairly important for their present self. They rated themselves as better than an average peer on a series of positive and negative personality traits. They also expressed unrealistic optimism in that they perceived favorable events as more likely and unfavorable events as less likely to happen to themselves (as well as to others, but still the differences were more pronounced in relation to self). Furthermore, the effects observed can be characterized as strong (effects sizes expressed through r coefficient being higher than .5).

The analyses showed that different self-enhancement strategies are related but distinct and cannot be completely reduced to one global strategy (compare Tesser 2000, 2001). Particularly measures of memory biases proved to be distinct in comparison to better-than-average effect and unrealistic optimism. It is worth noting that these measures do not share method variance and the fact that they are nevertheless related suggests an underlying dimension. However, based on the present data, we cannot support the idea of one general self-enhancement strategy or inter-changeability of different strategies (since the opportunity to use one did not preclude from using others).

The observed pattern of self-enhancement is further supported by detecting logical relations with other variables: we found that students with higher self-esteem and lower trait anxiety had a stronger tendency to self-enhance. These findings replicate and

extend the previous research demonstrating self-enhancement in our cultural context (Teovanović, 2013, Žeželj, 2012).

Now turning to the central issue in the experiment, although participants did self-enhance, thinking about death did not incite them to endorse these strategies to a larger extent. Contrary to previous TMT research (Dechesne et al., 2003; Greenberg et al., 2002, 2003; Harmon-Jones et al., 1997; Mikulincer & Florian, 2002; Pyszczynski et al., 2004) individual self-enhancement strategies did not play a role in the alleviation of mortality awareness in our participants.

The effects of experimental inductions are scarce and not convincing (they are summarized in Table 26). It was only the better-than-average effect that was more pronounced in participants who previously thought about death. However, a significant effect was only observed in contrast to uncertainty salience condition, which could suggest reversed influence of the two inductions. It is interesting that some of the effects observed are even reversed in relation to the hypothesized direction, i.e. participants who thought about death perceived *less* memory continuity and *less* optimistic expectations for one of the future events.

In addition, moderation analyses did not offer any support for the expectation that participants with higher self-esteem or trait anxiety would resort to self-enhancing strategies when confronted with awareness of mortality, in contrast to some previous studies (Baldwin & Wesley, 1996; Burke et al., 2010; Harmon-Jones et al, 1997; Schmeichel et al., 2009). Although related to the strength of self-enhancement tendencies, these measures did not prove important for the terror management role of self-enhancement, i.e. not even persons low in self-esteem or high in anxiety used these for death-fear alleviation.

The findings suggest an even more general conclusion that other types of induced thoughts, be it more general existential concerns (as the uncertainty of life) or more everyday concerns (as examination anxiety) did not boost the self-serving strategies. For instance, after being reminded of life uncertainty participants even demonstrated a less pronounced better-than-average effect. The lack of any demonstrable effects of exam salience could be attributable to the subtlety of the induction. Namely, merely thinking about exam anxiety did not prove a potent enough threat whereas actual failure would

probably prove otherwise, as suggested by, for instance, research on academic self-handicapping (Urdan & Midgley, 2001).

How to interpret the findings? One obvious explanation would draw on cultural differences between contexts of studies. Namely, the studies that supported the role of self-enhancement tendencies were typically conducted in Western countries with predominantly individualistic value orientations (e.g. in USA, Netherlands, Australia). On the other hands, studies that attempted to replicate these effects in more collectivistic cultures typically failed to find support for enhancement of the individual self-image (Heine et al., 2002; Kashima et al., 2004), although they did find support for more collectivistic forms of defense (e.g. worldview defense). Kashima and associates suggested that terror management should be conceptualized as a socio-cultural phenomenon rather than an individual one.

Table 26

Comparison of the effects of mortality, uncertainty and exam salience inductions

	mortality salience	uncertainty salience	exam salience
memory positivity	-	-	-
memory continuity	+ (reversed)	-	-
BTA	+	+ (reversed)	-
unrealistic optimism	- (individual events + and reversed)	-	-

This line of reasoning appears applicable to the present study. Here we will continue the argument about the relations between individual and collective self-enhancement started previously in the discussion of Experiment II. Individualism as a value orientation can

indeed be characterized as a less prevalent orientation in Serbia compared to Western countries (cf. Bajović, 2013; Kuzmanović, Popadić, & Havelka, 1995). It is interesting to note that we have observed an apparent proclivity to using self-enhancement strategies in our students, in contrast to some of the studies conducted in Japan that failed to observe such tendencies (Heine & Hamamura, 2007). However, and in line with the previous experiment, it is possible that even though self-enhancement does exist, it has not been endorsed as a cultural path to defend against awareness of death. Collectivistic self-enhancement strategies could still play a more important role for this specific (as suggested by Castano et al., 2004). It would be reasonable to assume that defenses against awareness and fear of death have to be deeply embedded within an accepted and valued worldview, so that one can resort to this cultural resource when confronted with these basic anxieties.

Still, we believe that an alternative account of the findings of the present experiment has to be put to test. Namely, when conducting the present experiment, we came to discover a potential confound. As the distractor task in the procedure, we used an adapted version of the standard word fragment completion task. It was observed that participants faced difficulty in solving the task, which in some cases took much more time than expected. Participants even voiced their discontent and frustration, e.g. asked whether it would be acceptable not to complete all the fragments, even if they can see the correct solutions after the experiment is over. Since this happened in a non-trivial number of cases, we came to reconsider whether this task could have posed as a self-esteem threat for our participants. Since the effects we sought to detect are fairly subtle and implicit, we thought that this could well have been a more powerful stimulation for our participants that overshadowed mortality salience and other experimental inductions. We reasoned that even the self-esteem scale that participants filled in prior to the inductions could have sensitized them to potential threats to self-esteem. Since the mortality salience effects we tested in the present study have not been tested previously in our country, we thought it would be worthwhile to attempt a replication. We therefore designed another experiment to test for mortality salience effects; however, this time we wanted to remove the possible confounds to allow more straightforward interpretations. We will now present the design and results of this experiment, before revisiting the issue of the relations between individual and collective self-enhancement.

Experiment 4: Individual Self-Enhancement Strategies Revisited

In this experiment, we re-tested the effect of mortality salience induction on the use of individual self-enhancement strategies. To ensure elimination of possible confounds we made several changes in design and procedure of the previous experiment: a. we included only two conditions: mortality salience and control condition, to heighten the power of the tests, b. we introduced a different distractor task (that would be easier to solve), c. we removed any preliminary personality measures, so as not to sensitize participants.

As already explained, we believe that participants who experienced difficulty with the more demanding distractor task in Experiment III could have perceived this as a self-image threat. If this were the case, this threat could have leveled out the subtler mortality salience and other anxiety inductions. Further, we removed the preliminary personality measures, i.e. self-esteem and global anxiety measures, as we believe they could have hightened self-awareness and perhaps a self-evaluative stance. Additionally, we employed a different mortality salience induction procedure, i.e. textual manipulation. We did this to cross-validate the findings, as well as since self-rating scale format could have, in the context of other measures, also heightened the self-reference framing.

In sum, these changes were introduced to the experimental design to remove as much as possible additional self-image threats and allow a more straightforward test of the mortality salience effects.

Design

The experiment had a unifactorial design, with two independent groups: one group was induced to think about mortality and the other about listening to music (control). Participants first read a text about death or listening to music, they were distracted for a short while and finally we measure their self-enhancement tendencies, through multiple indicators: a. biased retrieval of self-relevant information, b. better-than-average effect, c. unrealistic optimism.

Participants

For this experiment, participants were recruited by snowballing technique among Belgrade students ($N = 56$)[18]. Seventy percent were female. Participants' age ranged from 18 to 34 years, with an average of 20.71 ($SD = 2.57$) years. They were randomized into the conditions, resulting in 27 and 29 participants per condition.

Instruments

Textual inductions were used to incite thinking about personal death/experience of listening to music (described in more detail in the Method section).

Individual self-enhancement questionnaire, used in the previous study, measured memory biases, better-than-average effect, and unrealistic optimism. We used the same instruments as they proved reliable and allowed demonstrating clear patterns of results.

A visual **digit search task** was used as a distractor between the experimental inductions and dependent measures.

Given the experience from the previous experiment, we looked for a task that could serve as an adequate distractor i.e. that would demand the full attention of the participants, but at the same time would not be perceived as a test of important intellectual capabilities and would thus not seem relevant for self-image. Thus, we opted for a simple perceptual task and did not impose any time limits. Students were presented with a 10*15 digit matrix. Their task was to find and mark several digits (6 and 4) and number combinations (made of two identical digits and those starting with a 0, only horizontally). We pre-tested the task, and it took on average 3 to 5 minutes to complete (complete materials are given in Appendix II).

Procedure

The experiment followed a procedure identical to the one described in the previous experiment. Participants received the instruments in the following order:

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[18] Among the participants there were psychology students (55%), archeology, art history and history students (23%), students of engineering (11%) and final year high-school students (11%). Since the sample was heterogeneous with respect to area of study, we tested for differences on dependent measures between psychology students and others. There were no significant differences. There were also no interactions of study area with the independent variable.

1. Texts either about personal death or about the experience of listening to music, as experimental inductions

2. Digit search distractor task

3. Individual self-enhancement strategies questionnaire

To raise the salience of the individual identity, we introduced the questionnaire with the following introduction: „*In the following we will ask you to focus on yourselves. We will first ask to think about what makes you different from the other persons you know.*" (Silvia & Eichstaedt, 2004). The order of the dependent variables was counterbalanced.

4. Participants were thanked and debriefed, following the procedure described in the Method section.

Operationalization of dependent measures

Dependent measures were operationalized as described in the previous experiment. We re-tested their psychometric properties on this sample to ensure their adequacy.

Item analysis of BTA scores revealed that the trait *sarcastic* did not correlate with other traits, so we removed it from the mean index of the BTA effect and will analyze it separately. The remaining items made a reliable scale (negative items recoded in the positive direction, $\alpha = .65$).

We also removed two of the events from a mean index of unrealistic optimism (dropping out of college and contracting a sexually transmitted disease), since their ratings did not correlate with ratings for other events. The global index of unrealistic optimism had acceptable internal consistency ($\alpha = .66$). We will also conduct tests of inductions for each of the events separately.

As in the previous experiment, descriptive analysis of the dependent measures revealed unambiguous self-enhancing tendencies. Participants recalled on average 2 more positive events than negative ($M = 2.40$, $SD = 1.96$), $t (56) = 9.13$, $p < .001$, $r = .79$, which indicates a positivity memory bias. They also rated the events as important for who they are today ($M = 4.32$, $SD = .54$), $t (56) = 18.12$, $p < .001$, $r = .92$.

Ratings of how characteristic the traits are for themselves relative to an average peer also showed an apparent better-than average effect: positive traits averaged significantly above the theoretical midpoint of the scale: $M_{pos} = 3.55$ ($SD = 0.45$), $t (55) = 9.14$, $p <$

.001, $r = .78$. The opposite was true for negative traits, they averaged significantly below the midpoint of the scale: $M_{neg} = 2.50$ $(SD = 0.52)$, $t(55) = -7.26$, $p < .001$, $r = .70$. Students also demonstrated unrealistic optimism, in that they perceived that likelihood of their experiencing positive events in the future as higher than chance and negative events as lower than chance. As we can see, average ratings are significantly different from the theoretical mid-point of the scale (i.e. 50%) (Table 27). Only the ratings of positive events for others (i.e. an average peer) approached statistical significance. Once again, these ratings were more skewed in an optimistic direction for self than for others and for negative events than for positive.

Table 27

Ratings of likelihood of future events for self and others

	self	other	difference (*t*-statistic)	effect size (*r*)
positive events	4.74 (.74)	4.18 (.75)	4.70**	.53
negative events	1.91 (.81)	2.94 (.81)	-7.94**	.73

*Note: the measures are means (and standard deviations). Ratings were given on a 7-point scale, rating 4 designating probability of 50%.

Testing the effect of mortality reminders on individual self-enhancement

We have shown that participants in this experiment also demonstrated clear patterns of self-enhancement across different dependent measures. Next, we turn to the critical issue of the experiment: are these patterns strengthened after exposure to reminders of mortality?

Analysis of variance did not support the experimental hypothesis – none of the strategies proved to be more pronounced after reminders of mortality, as compared with the control condition (Table 28).

Two of the comparisons approached conventional levels of statistical significance, but the tendencies were reversed with respect to the hypothesis: participants reminded of

death tended to recall *fewer* positive memories and to demonstrate a *decreased* tendency to BTA effect than those in the control condition.

Table 28

Effects of experimental inductions on self-enhancement strategies

	memory positivity	memory continuity	BTA	UO
MS condition	1.96 (2.01)	4.35 (.53)	3.55 (.44)	5.19 (.76)
control	2.85 (1.83)	4.29 (.57)	3.76 (.43)	5.26 (.58)
F- statistic (*p*-value)	2.96 (.091)	.20	3.28 (.076)	.18

*Note: measures given are means (and standard deviations).

We replicated the findings using difference measures for ratings of the likelihood of events for self and other. We also tested the effects of experimental inductions on ratings of likelihood for individual events. None of the ratings differed between the mortality salience and control conditions[19]. We can, therefore, conclude that the findings suggest that: a. there is no evidence that reminders of mortality increase the use of self-enhancement strategies; b. mortality salience can even *decrease* the tendency to use them.

Discussion

In this experiment we tested whether reminders of mortality would lead individuals to self-enhance more strongly, i.e. to strengthen their self-esteem, which is hypothesized to be one of the pillars of the death anxiety buffer system (Pyszczynski et al., 2004). We

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[19] The trait *sarcastic* was not differentially rated in the two conditions either.

designed an experiment in which we removed most of the additional measures and any potential threats to self-image, to optimize the conditions for a mortality salience effect to be detected. We believed this would be critical, given the subtle nature of the effect we sought to establish, i.e. that we attempted to manipulate a basic motivation that is at the core of various more superficial motivations and processes. What we found, however, was no support for an increased use of self-enhancement strategies and even some support for a decreased use of these strategies after death reminders. This finding replicated the findings from the previous experiment and left us more convinced that enhanced self-esteem strivings do not serve a defensive function against basic anxieties. The findings are inconsistent with much of the previous research done in Western countries (e.g. (Dechesne et al., 2003; Greenberg et al., 1993; Harmon-Jones et al., 1997; Routledge et al., 2004; Pyszczynski et al., 2004) but in line with some studies from more collectivist, Eastern countries (Du & Jonas, 2014; Heine et al., 2002).

<p style="text-align:center">***</p>

Let us summarize what we have learned thus far from the findings of the present study:

a. reminders of mortality lead to strengthening ties with an important social group, i.e. ethnic group and a more positive view of the group, which we termed collective self-enhancement

b. reminders of mortality did not lead to an increased use of self-enhancement strategies aimed at the individual self-image

c. participants did demonstrate clear patterns of self-enhancement, irrespective of experimental inductions

d. individual difference variables, i.e. the chronic level of self-esteem and trait anxiety did not prove to moderate the relation between the experimental inductions and defensive reactions

Briefly put, a tentative conclusion would state that judging from our experiments, participants reminded of personal mortality defended by enhancing a positive image of the ethnic group, but not the individual self-image. This conclusion takes us back to the issue of whether defenses from death awareness should be conceptualized as an individual level construct or seen from a broader socio-cultural perspective, as mentioned in the discussion of Experiment III. Our findings can be given a meaningful

interpretation if we take the socio-cultural context into account. In this cultural context, some social tools for alleviating mortality concerns appear to be more readily available than others.

However, it may well also be the case that there are several possible defensive strategies that one can choose from and that the choice could depend on some characteristics of the individual. One potential moderator that comes to mind in this context is an individual's value orientation (Triandis & Gelfand, 1998). For instance, people endorsing individualistic value orientation could also be more prone to using individual self-enhancement to alleviate mortality concerns than those accepting collectivist values. We can offer two arguments for choosing value orientation as the best candidate for the moderator variable. Firstly, since the individual difference variables that seemed most relevant to the present issue did not prove to moderate reactions to mortality salience, it seemed logical that more socio-psychological variables should be considered. Secondly, value orientations have been extensively researched and proven to be a valid framework for analyzing cross-cultural specificities (Oyserman, Coon & Kemmelmeier, 2002; Triandis & Gelfand, 1998).

There is another issue that is worthy consideration - if two experiments have already shown that there is no evidence of the hypothesized defensive role of self-esteem striving, is there any reason to conduct additional tests? Given the convincing findings documenting this role in other countries (e.g. (Dechesne et al., 2003; Harmon-Jones et al., 1997; Mikulincer & Florian, 2002; Pyszczynski et al., 2004) as well as the scarcity of relevant research in the region, we believe that the answer is affirmative. The societies in the region have been currently undergoing a period of transition, in which value systems and orientations have also been undergoing significant changes (Blagojević, 2013; Kuzmanović et al., 1995). What is more, the model society in this process is the Western-like democratic and economically liberal society, the very context in which individualism as a value orientation has been proved to flourish. Perhaps individualistic worldviews and the accompanying building blocks of anxiety buffer systems are also being transformed in this context of social change. It is important to re-iterate that self-enhancement tendencies have been convincingly demonstrated in our experiments, which can be seen as an argument against the exclusive importance of collectivist values in our society.

Further, testing individual value orientations as a potential moderator variable would significantly strengthen our previous findings. Namely, if the moderator effect would not be observed, we could be even more convinced of the collectivist based death anxiety buffer in our culture. However, if we do reveal differences in reactions depending on value orientations, this would mean that there is a more complex cultural system of defense against basic anxieties. This would be important to establish not only for the test of experimental hypotheses, but it would also be of importance to examine the implications of both conclusions for the more general issues of social attitudes and inter-group relations. In addition, individual and collective strategies have thus far most often been tested in different experiments, and this will allow us to pit them against each other in a single design.

In the following, we shall report on the experiment designed to test for potential moderator effects of individual value orientations on the choice between individual and collectivistic self-enhancement strategies.

Experiment 5: Individual vs. Collective Self-enhancement Strategies

The final experiment was designed to resolve some of the central issues that were raised by the previous ones. Thus, the primary goals of the present experiment were threefold:

a. to compare within a single framework the effects of death reminders on individual and collective self-enhancement strategies

b. to test the moderator effects of value orientations along the individual – collective dimension on the choice of strategies

c. to test the cognitive and affective mediators of mortality salience effects

Before presenting the design and the results of the experiment, we will briefly introduce several theoretical and methodological frameworks crucial to the issues dealt with in the present study.

I.   Theoretical and methodological frameworks

Product preferences as an expression of terror management

To test for the effects of mortality salience on the functioning on the anxiety buffer, we needed to provide an opportunity for both individual and collective-level enhancement within a single methodological framework. To achieve this, we opted for a product preference paradigm. Previous research has offered some arguments that clearly speak in favor of a possible terror management account of (at least some aspects) of consumer behavior. From a theoretical perspective, material possessions are highly valued within the Western culture, and we would not exaggerate in saying that they are one of the pillars of the contemporary Western societies. The striving for material possessions and conspicuous consumption are in no way confined to Western countries but have been documented in a variety of ethnographic studies from different cultures. Still, in these societies, materialism has acquired quite novel dimensions, and this appears to be a culturally constructed route to achievement of happiness and self-satisfaction.

An individual wishes to accumulate material possessions as they are a symbolic testimony of his or hers success in achieving the culturally valued goals (Arndt, Solomon, Kasser & Sheldon, 2004). In this manner, a person strengthens her position

within the cultural worldview shielding from the threat of personal mortality and insignificance. The material possessions and the desire to obtain them would then have an important self-image boosting function which, in turn, is based on a death-anxiety alleviating motive.

The research has, indeed, demonstrated that consumer behavior can serve a self-serving and a terror management function. We will briefly review some of the most relevant and compelling findings. Mandel and Heine (1999) investigated how mortality reminders affected preferences for high- and low-status products in the USA. Reminders of mortality lead to more favorable attitudes towards luxury products (e.g. Rolex watches) than low-status products (as Pringles potato chips). In addition, whereas participants in control conditions preferred low-status to high-status products, mortality salient participants showed a reversed pattern: a preference for high-status products. The authors concluded that preferences for luxury products can be considered a self-image boosting strategy in a culture where possession of such products is an indicator of successful life.

This paradigm was also applied in a different cultural context, in Japan (Heine et al., 2002). Here, the authors found partial support for the hypothesized effects of mortality reminders on preferences for high-status vs. low-status products: participants did not show a higher preference for high-status products, but did show a tendency decrease their preference for low-status products. Interestingly, a significant difference was observed in only one case – in ratings for Pringles potato chips. It is striking that this low-status product is also a product of *foreign* (American) origin. The authors acknowledged that this is a possible confound, and could not ascertain whether the origin or the status of the product was the factor driving the effect. These factors need to be disentangled to test the precise nature of mortality salience reactions.

A separate line of research explored the role of death reminders in evaluating national and foreign products, for instance in several studies conducted in Austria by Eva Jonas and her colleagues (Jonas, Fritsche, & Greenberg, 2005). Firstly, they discovered that mortality salience affected endorsement of the monetary currencies of national vs. international origin. Namely, for Germans, the German Mark was an important national symbol and the introduction of a common European currency (i.e. the Euro) in 2002 was, therefore, a highly controversial issue. In two studies, the authors found that

participants reminded of mortality (by subliminal primes or interviewed in front of a cemetery vs. several blocks away) expressed less liking for the common European currency (the Euro) and a tendency for stronger liking for the German Mark than a control group. Further, they replicated these effects of mortality salience on preferences for several German products (compared to non-German products). German participants interviewed in front of the cemetery expressed increased preference for German cars, as well as German holiday locations, German cuisine, German talk show hosts, as well as a decreased liking for the products' foreign counterparts. They also preferred Berlin to Paris as a European capital and estimated the chances that the German football team will win the world championship as higher, compared to those in the control condition. Marieke Fransen replicated these effects with Dutch participants: those who were subliminally primed with death concerns showed heightened preference for domestic as well as lowered preference for foreign food products (Fransen, Fennis, Pruyn, & Das, 2008).

Building on previous research, in the present study we will apply the product preference paradigm and combine the high- and low-status dimension with product origin, to explore both collective and individual level strategies.

Individual value orientations as a moderator of reactions to mortality salience

In the previous chapter, we have offered some arguments for the choice of individual value orientations along the individualistic-collectivistic dimension as a moderator of reactions to death reminders. Individualism rests fundamentally on the assumption that individuals are independent of one another while the core assumption of collectivism is that groups bind and mutually oblige individuals (Oyserman et al., 2002). Individualism and collectivism should be conceptualized as orthogonal dimensions, rather than a single bipolar dimension. There is no consensus as yet on how they should be conceptualized and measured, and there is a rich variety of instruments. We opted for one of the most widely used scales, developed by Triandis and associates (Triandis, 1996; Trindis & Gelfand, 1998).

Triandis views individualism and collectivism as cultural syndromes, i.e. explains that these are characteristic of cultures, although different patterns do exist simultaneously and can be made salient depending upon the setting. He suggested four defining

153

characteristics of individualism and collectivism: a. definition of the self – emphasizing either personal or collective aspects of the self, b. goals – giving priority to personal vs. in-groups goals, c. focus on needs of the in-group or a cost-benefit approach to relations with others, d. the relative importance of attitudes vs. norms – while individualist cultures give precedence to attitudes, collectivist cultures give precedence to norms (Triandis, 1996). However, individualism and collectivism come in different guises, so there can be different variations in both orientations. The authors propose an additional characteristic of individualism and collectivism, i.e. a distinction between their horizontal (emphasizing equality) and vertical (emphasizing hierarchy) variants. Both people valuing individual and collective orientations can believe that the self is *like* others or *different from* others, which makes the basis of the horizontal-vertical distinction. This conceptualization has received empirical support in both individualist and collectivist cultures (Triandis & Gelfand, 1998). We will reassess its applicability in the local context in the present study (the instrument, as well as the analysis of its psychometric properties, will be presented in detail in the Instruments section).

Serbia and its neighboring countries in the region of the Western Balkans are usually designated as collectivistic societies. Hofstede's values studies supported such a contention, demonstrating relatively low levels of individualism and high collectivism in both Serbia and the rest of the region (Hofstede, 2001, cf. Podrug, Pavičić & Bratić, 2006). Inglehart (2007) also describes the region as prominently oriented towards survival (collectivist) and not self-expression (individualist) values. According to the Swartz' (2007) analyses, Serbia is a part of the Eastern European region, which takes a mid-position between the Western and Eastern cultures on a set of individualist and collectivist values. He also highlights that the Balkans specifically tend to show lower autonomy and egalitarianism as well as higher hierarchy compared with the rest of Eastern European region (see also Oyserman et al., 2002).

However, we have mentioned some recent studies that demonstrated current changes in the elements of cultural worldviews. One of the most striking examples is religiousness that underwent a revolutionary upsurge in the recent decades, turning the Serbian society from an atheist to a society with a prominent religious and clerical profile (Blagojević, 2013, Markešić, 2010). There is reason to believe that individual value orientations have also undergone significant change, but the overall picture does not

conform to clear tendencies of decreasing collectivist and increasing individualist values. Sociological studies have revealed dissonances in normative value systems in Serbia (as well as other former Yugoslav republic) that have roots in the socialist period, but that have been exacerbated by the socio-economical and political turmoil of the previous decades (Lazić & Cvejić, 2007). These dissonances mean that there is not a single coherent collectivist or individualist value system in the societies, but that both collectivist and individualist value patterns are embraced to some extent, and even by the same individuals.

It seems that a finer-grained analysis of collectivistic orientations can be of relevance in the local context. In a study on the persistence of traditionalist value orientations in Serbia, Jelena Pešić (2006) compared the level of collectivism from the late 1980's to that from mid-2000s. A small decrease in ratings was observed; however, the author points out that Serbia has remained a society with a predominant collectivist rather than individualist orientation. How can this be explained, given the transitional processes and changes in institutions? Pešić explained that the nature of collectivism had changed: from the one based on socialistic ideology to the one based on the ethnic identity and supported by the ideology of nationalism that played a significant role during the crises and conflicts of the 1990s.

Given the still ongoing transitional processes in the Serbian society, it is possible that they also affect the worldviews, more specifically, the individual versions of the cultural anxiety buffer shielding from existential anxieties. It is reasonable to assume that individual differences in the extent to which different value-systems are embraced can partly determine defensive strategies individuals espouse. This is why we chose to address this issue as one of the goals of the present study. In addition to the value orientations, we also measured and explored the effects of the strength of ethnic identification, having in mind the particular importance it might have in the context.

II.   The present study

To explore the central issues raised by previous experiments, we designed an experiment using the product preference paradigm. Since neither of the previous product preference studies systematically varied the origin of the product *and* its status, we introduced this cross-categorization, which resulted in four groups of products

(materials are described in more detail below). In addition, we registered the individualist and collectivist value orientation among our participants, to establish whether the value orientation affected the choice of defense strategies in confronting awareness of death.

Hypotheses

We can formulate four theoretical alternative outcomes of the experiment. When confronted with death reminders,

      1. All of the participants will endorse collective strategies

      2. All of the participants will endorse individual strategies

      3. Some participants will endorse collective and others individual strategies, depending on their value orientations

      4. Participants will not endorse either of the strategies

The previously reported Experiments (2, 3 and 4), would support either **the first** or **the third outcome**, so these two would, in fact, make the alternative hypotheses for the present experiment.

III.   Method

Design

The experiment had a 2 (individualism vs. collectivism) x 2 (MS vs. control) between-subject x 2 (individual vs. collective self-enhancement) within-subject design (design is graphically depicted in Figure 11).

To optimize the design for the current goals, we decided to contrast the mortality salience and a neutral control condition (listening to music). Individualism/collectivism is a moderator variable, i.e. we will compare the effects of mortality reminders on the use of individual and collective strategies in participants high and low in individualism/ collectivism.

Figure 11

Schematic presentation of the design of the experiment
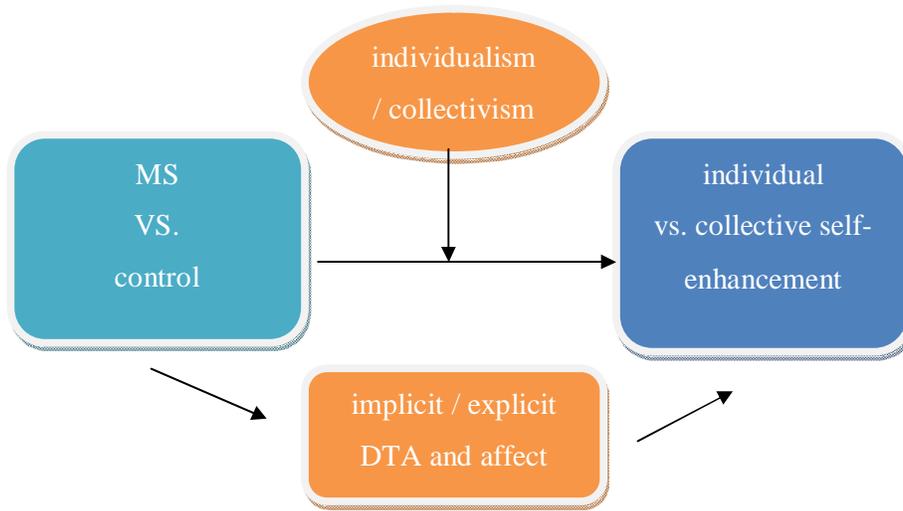
The proposed mediator variables of mortality salience effects that we will investigate are implicit and explicit death-thought accessibility, as well as affective responses to the inductions. We wanted to directly test the potential mediation of the mortality salience effects on self-enhancement tendencies through the established cognitive and affective reactions. As a recent meta-analysis of studies that investigated death-thought accessibility demonstrated, meditational effects have seldom been statistically tested (J. Hayes et al., 2010). The few studies that did include testing of mediation effects did not show consistent results. Hayes and associates encouraged further testing, to be able to reach more reliable conclusions. Even though this was not the primary goal of the present studies, we thought that casting some light on the underlying processes would also help clarify the operation of the specific anxiety buffer system in the local context.

Participants

Seventy[20] students of psychology from the Faculty of Philosophy and Faculty of Media and Communications in Belgrade participated in the experiment in exchange for course credit. There were randomized to either mortality salience or control conditions, resulting in 35 students per condition.

Instruments

Individualism and collectivism scale was translated and adapted from the instrument developed by Triandis and Gelfand (1998). The scale consisted of 16 items, rated on 9-point scales, anchored at 1 (*never or definitely no*) to 9 (*always or definitely yes*). The items were divided into four groups, designed to tap: horizontal individualism (e.g. *I'd rather depend on myself than others.*), vertical individualism (e.g. *Competition is the law of nature.*), horizontal collectivism (e.g. *To me, pleasure is spending time with others.*) and vertical collectivism (e.g. *Parents and children must stay together as much as possible.*). The items were presented in randomized order. The complete scale is presented in Appendix VI.

The strength of ethnic identification was rated on a 5-point scale. Participants were asked to rate to what extent being a member of the ethnic groups was personally important to them.

Textual inductions were used to incite thinking about personal death/experience of listening to music (described in more detail previously in the Method section).

Positive and negative affect schedule (*PANAS*, Watson, Clark, & Tellegen, 1988) was used as a distractor as well as a control of affective processes.

Thought-listing (Petty & Cacciopo, 1981): participants were asked to list any thoughts that came to mind while they were doing the previous tasks.

Word fragment completion task was used to ascertain implicit cognitive processes to the experimental inductions, or, to use the term used within TMT literature, death-

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[20] Originally, there were 89 participants in the experiment. However, the final database included only 70 of those participants, due to problems with matching the data from the two phases (since a large number of participants did not use the same codes in the two questionnaires).

thought accessibility (J. Hayes et al., 2010). Given the previous concern with the full version of the task, that proved rather difficult and time-consuming, we developed a shorter version for this experiment (given in Appendix II). The task consisted of 12 fragments that all lacked a single (or maximum two) letters. Three of the fragments could give words either related to death or neutral words:

1) S M _ _ (either "smrt [death]" or "smer [direction]"),
2) G R _ _ E (either "groblje [cemetery]" or "grožđe [grapes] " and
3) U _ R E T I (either "umreti [die]" or "upreti [point] ".

An index of death thought accessibility was computed as the number of fragments completed with a death-related word.

Materials

The materials for the product preference task were developed for the purposes of the present study. We opted for a repeated-measures procedure in which we crossed origin and status of the product and asked participants to rate their liking for each of the variants:

1) domestic high-status
2) domestic low-status
3) foreign high-status
4) foreign low-status

The choice of particular products offered some dilemmas. We chose to examine preferences for holiday venues (hotels) and honey, as representative of the more general categories of prestigious and non-prestigious products. This choice was based on two considerations. Both hotels and honey (as a traditional product) could be directly related to a specific location, i.e. country of origin. A particular challenge in this respect was to find high-quality domestic products that would be convincing and recognizable. For this reason we opted out of testing preferences for cars that are a standard item in these tasks, since there are no Serbian car manufacturers at this point.

We also thought these represented types of products that could be of (at least some general) interest for the student population. We gave preference to these, rather than for instance, wine or jewelry that we supposed would be more dependent on personal tastes, which would make their ratings harder to compare across individuals.

159

In developing materials, special attention was taken to several issues. Firstly, we designed hypothetical products, that were made similar to existing ones but we took care not to make reference to any familiar brand since the ratings could have been influenced by this[21]. Second, we made sure to remove any specific geographical reference, apart from the country, that could affect the preference ratings, as well as any familiar graphical material. Lastly, since the socio-economic status of the participants could affect their liking for the products, we instructed them explicitly not to take the price into account, but to assume that they had sufficient resources and to choose based on pure liking.

The instruction given to the participants read as follows:

"We would like to ask you to take part in a marketing survey related to tourist destinations. Several hotel chains that are soon to be opened in Serbia and Slovenia are particularly interested in preferences of the youth. We will now present you with descriptions and basic information about several hotels. We will not give any specific information about the locations since we are interested in how much you like each hotel in particular.

Please read through the information and express your liking for the hotel on the described scale. Prices are given for orientation purposes, but we would like to ask you to rate the hotels based on pure liking. Imagine that you are picking a holiday destination and that you have the resources to afford any of the hotels. "

We designed four hotels that were either domestic (in Serbia) or foreign (Slovenia), and by price either economy (low status) or luxurious (high status). We presented the descriptions of four hotels in randomized order. Each included several elements: the name of the hotel (and country where it is located), a short advertisement-like description, including room facilities, a list of hotel facilities (pools, saunas, massages, etc.), price per night, as well as several photographs. We designed the presentations of

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[21] It appears that we did make one omission in this respect, namely in the case of domestic honey brand (Nektar). This is a familiar brand, producing juice and marmalade, and not honey. However, participants clearly recognized the brand, which we think accounts for the high product ratings. Still, since this influence was supposedly equally distributed in both experimental and control groups, we do not believe that this could have compromised the findings.

hotels to resemble typical tourist websites or brochures and made an effort to arouse adequate impressions with different elements (e.g. the hotel names were chosen so as to resonate with the purported status of the product). Names and prices of the hotels are given in Table 29.

Table 29

Schematic presentation of the categories of prestigious products (hotels)

	low-status	high-status
domestic (Serbia)	Wellness Zdravljak (price: 79 euros)	Dream Wellness (price: 183 euros)
foreign (Slovenia)	Aparthotel Rožice (price: 81 euros)	Thermal hotel Julija (price: 179 euros)

Special care was taken in choosing the photographs that they are sufficiently non-recognizable and that they convey the adequate impression: while the "cheaper" hotels were nothing but decent, the "expensive" ones were presented as truly luxurious. An example of hotel presentation is given below, and complete materials are provided in Appendix VII. To control for the potential effect of photographs on liking for the hotels, we counterbalanced the descriptions and photographs (for the hotels of the same status).

Thermal hotel Julija (Slovenia)

Thermal hotel Julija is so much more than a wellness hotel; it is a world of its own. Located in Slovenia, this brand new resort offers unlimited possibilities for the holiday that you prefer: active and energetic or relaxed and pampering. Our mission is to challenge the borders of traditional design and bring to life the vision of future esthetics, comfort and ecologically conscious luxury. Pack your suitcase and experience a new inspiration for the chosen.

The hotel offers 50 premium rooms and suites. Are rooms are spacious and elegantly designed, beautifully illuminated with warm lights that fuse into the blue skies and the lush greenery of the surroundings. Each room is equipped with balcony, free wi-fi, satellite channels, bathroom with a massage bathtub, free toiletries, bathrobes, a full mini-bar and hypoallergenic bed towels. Experience a romantic evening with your partner in the private Spa Suite with a personal steam room and water bed.

Facilities

☐ Indoor and outdoor pools

☐ Hot thubs

☐ Finnish sauna

	Steambath (Roman sauna)
	Turkish sauna
	Sanarium (Aromatic sauna)
	Salty sauna
	Personal spa
	Massages
	Beauty treatments (with Babor experts)
	Gym
	Squash and tennis courts
	Sun terrace
	Solarium

Prices: from 179 euros per night

Picture gallery

The descriptions were followed by two questions, answered on 10-point sliders, anchored at 1 (*not at all*) to 10 (*very much*): *How much would you like to stay at this hotel?* and *How likely would you be to recommend this hotel to friends?*. After four blocks of descriptions, the participants were asked to rank the hotels for preference.

After the hotel segment, the participants were asked to rate four honey products that were also designed to cover domestic (Serbian) and foreign (Greek), as well as high and low-status conditions, presented in the Table 30.

Table 30

Schematic presentation of the categories for non-prestigious products (honey)

	low-status	high-status
domestic (Serbia)	Nektar honey (165 RSD per 100g)	Grandma's honey (price: 500 RSD per 100g)
foreign (Greece)	Melissa honey (169 SD per 100 g)	Thimari premium honey (489 RSD per 100g)

Each product was presented with a description ad, including the name of the brand (as well as the country of origin), a short description of the product, the price and a picture. Descriptions were rather vague, in order to be kept as equalized as possible: in each case, we highlighted the purity and the naturalness of the products. In addition, the prestigious brands were described as more expensive and also we mentioned that they were awarded prestigious international rewards for quality. An example of product presentation is given below. Photographs were again here counterbalanced with the descriptions (within the products of the same status).

The descriptions were also followed by two questions, answered on 10-point sliders, anchored at 1 (*not at all*) to 10 (*very much*): *How much would you like to buy this honey?* and *How likely would you be to recommend this honey to friends?*. After four blocks of descriptions, the participants were asked to rank the honey products for preference.

Grandma's honey

Follow Grandma's advice and taste your day sweeter with honey.

The life's sweetest - jars of liquid gold capturing the rays of sunlight. Following the long tradition of a honey-making family, Grandma's honey is a novel product of top quality. Processing follows the traditional recipes of our grandma incorporating contemporary knowledge, to attain the highest standards of quality. The first series has been acknowledged by a new-comer reward at the *28th International Honey Fair and Bee-Keepers Meeting* in Budapest, Hungary.

Country of origin: Serbia

Price: 500 RSD (per 100 g jar)

Preliminary testing of the materials

We tested the materials via an on-line questionnaire, set up on a *Qualtrics* software platform. Participants were recruited by the snowball method among the student and, more generally, youth population of Belgrade since we aimed for a sample comparable to the one that would take part in the main phase. Participants were directly sent the link to the questionnaire. A total of 46 participants completed the survey (28% male), and their age ranged from 18 to 26, with a mean of 22.72 ($SD = 1.50$).

The aims of the preliminary tests were twofold: a. to the check the credibility of the materials and b. to check the manipulations of product status, i.e. to investigate whether participants' liking for the low- and high-status products would differ in the expected direction. We asked the participants to express their preferences for each of the hotels/honey products.

We also asked them whether any of the descriptions or photos looked familiar and, if the answer was yes, to detail which ones. Only three participants stated that they

recognized some of the materials related to hotels: in one case without a specific reference and in the other cases the recognition was not correct. Two participants also stated that they recognized the honey products, again without a specific reference. We concluded that the materials were not recognizable beyond a general impression of being similar to something participants saw before.

Now turning to the other and more important issue, we wanted to investigate whether the materials made possible to observe any patterns of preference for the products and whether they would depend on the two dimensions of status and origin. We first combined the answers to the two questions (preference for the product, and likelihood that they would recommend it to a friend), to measures of preference for each product ($\alpha \geq .85$) (mean ratings are detailed in Table 31). [22]

Table 31

Mean preferences for hotels in the preliminary test

	M	SD
Wellness Zdravljak	6.05	2.28
Aparthotel Rožice	6.45	2.60
Dream Wellness	7.85	1.96
Thermal hotel Julija	8.17	1.88

*Note: the ratings were given on a 10-point scale

Comparisons revealed that ratings of high-status hotels were significantly higher than the low-status hotels, $t(44) = -5.34$, $p < .001$. The foreign hotels also tended to be preferred to domestic hotels, with a marginally significant difference, $t(44) = 2.00$, $p = .052$. T-tests revealed no significant differences between the two high-status hotels (Dream Wellness and Thermal hotel Julija) and a marginally significant difference

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[22] Before averaging the ratings, we tested for potential effects of the different pairings between the descriptions and the photos. The ratings were significantly different in case of Wellness Zdravljak and Aparthotel Rožice, although these could not be attributed to the photographs (since different hotels were not rated consistently higher when paired with the same set of photos). This appeared to be a more subtle effect of the match between the description and the photo, so we decided to keep the counterbalancing in the main experiment, to control for this potential confound. There was no effect of pairing on the ratings of the honey products.

between the two low-status hotels (Wellness Zdravljak and Aparthotel Rožice), $t(44) = -1.78$, $p = .082$. We can conclude that participants indeed recognized the differences in product status, showing a preference for the high-status products. However, they did not favour domestic hotels but tended to give some advantage to the foreign over the domestic hotel, among the low-status ones.

Preferences for the tested honey products revealed somewhat different patterns (Table 32).

Table 32

Mean preference ratings for honey products in the preliminary test

	M	SD
Grandma's honey	6.68	2.55
Thimari Premium	6.88	2.44
Nektar honey	7.46	2.07
Melissa honey	5.99	2.15

*Note: ratings were given on a 10-point scale

Comparisons revealed that participants did not prefer the premium honey (Grandma's and Thimari) to the average honey brands (Nektar and Melissa). However, they did prefer the domestic honey to the Greek one, $t(45) = 2.87$, $p = .006$. The inspection of average ratings reveals that, between the low-status products, participants preferred the domestic one.

Taken together, the results of the preliminary tests revealed that different types of products (prestigious vs. non-prestigious) show different patterns of preference. The distinction between high- and low-status products was reflected in preference ratings only for the prestigious products (hotels). Thus, the product status manipulation did prove successful in the case of prestigious products (hotels) and not in regard to non-prestigious products (honey). We decided, however, to keep all categories of stimuli in the main phase of the experiment, since the mortality salience could affect the patterns of preference found in the pre-test.

Another interesting pattern was observed regarding the origin of the products: among the high-status products, there were no clear preferences for the domestic over foreign products. However, among the low-status products, participants preferred the domestic honey. Next, we turn to the issue how inductions of mortality salience affected these patterns of preference.

Procedure

The experiment included three phases.

Phase I. Preliminary testing of the materials

The materials that were developed for the product preference task were tested with an independent sample of participants.

Phase II. Preliminary session (moderators)

In the preliminary session, participants rated the personal importance of three social identifications**:** the religious, ethnic and gender identification. We needed to establish their strength of ethnic identification while the other two were filler items. They also answered to a translated version of Triandis' individualism and collectivism scale. They did this via an online questionnaire which was entered through a link that was directly sent to their e-mail addresses.

Phase III. Main session

In the main session, participants were welcomed and seated before personal computers. They were told that they would take part in two different surveys. The measures were administered through *Qualtrics* software interface, in the following order:

1. Participants read the text related to death or listening to music, thus being induced with the respective contents.
2. Participants answered to PANAS that served as a distraction, but also as a check of emotional reaction to the inductions.
3. They listed the thoughts they were having at the moment.
4. They solved the simplified version of the word fragment task, to measure their implicit cognitive processes following the inductions.

5. Participants were then informed that they would take part in a marketing survey that tested their product preferences for two categories of products: hotels and honey. They were presented with short descriptions, as well as photographs, of the products and then rated their preferences. At the end of each segment, they ranked the products according to preference.

6. Participants were thanked and probed for any disturbing thoughts or suspicions about the procedure. Shortly after the experiment, they received a written debriefing, with an elaborate account of the experimental goals, hypothesis, and procedures. They were encouraged to contact the experimenter via email in case they have any concerns or questions.

Operationalization of variables

Individualism and collectivism scale scores were subjected to a principal component analysis (KMO=.57, Bartlett's test of sphericity was significant, $p < .001$). The analysis extracted six principal components with eigenvalues above one that explained a total of 69% of the variance (20.34, 17.02, 9.40, 8, 7.37, and 7.13 % respectively). The first two components explained largest amounts of variance and corresponded to general measures of collectivism and individualism (complete results are given in Appendix VIII).

The first component had loadings from both horizontal collectivism, e.g. *If a coworker gets a prize, I would feel proud* (.73), *I feel good when I cooperate with others* (.72) as well as vertical collectivism subscales: *It is my duty to take care of my family, even when 1 have to sacrifice what I want* (.66).

The second component also loaded on both vertical and horizontal individualism items, e.g. *Competition is the law of nature* (.71), but also *I rely on myself most of the time; I rarely rely on others* (.67).

The remaining components covered more particular aspects of the variables. The third component reflected a general leaning towards hierarchical relations, both individual and within a collective. It had highest loadings from *Parents and children must stay together as much as possible* (.50), *It is important to me that I respect the decisions*

made by my groups (.41), but also from vertical individualism *When another person does better than I do, I get tense and aroused* (.39).

The fourth and the fifth component could not be interpreted in a straightforward manner, with a mixture of both positive and negative loadings on horizontal individualism, as well as vertical collectivism items. The sixth component could be interpreted as a more specific aspect of individualism, with negative loadings on *Family members should stick together, no matter what sacrifices are required* (-.43) and positive on *Winning is everything* (.43) and *I often do "my own thing."* (.37).

Our analysis did not corroborate the horizontal/vertical dimension as an important characteristic of individual value orientations. Since we, however, did find two distinct components related to individualism and collectivism, we decided to calculate two respective scores from the original items, rather than four different scores, suggested by the original authors of the scale. These gave two reliable indices of individualism (α = .69) and collectivism (α = .79).

If we look at the factor structure of the scale and the items that loaded on each of the dimensions, the crucial distinctions between them appear to lie at the level of prioritizing individual vs. collective goals, as well as between self-reliance and concern for others (following Triandis, 1996).

It appears that the essential content of individualism is the perception of the social world as consisting of competing individuals. On the other hand, low individualism could be interpreted as a reluctance to embrace the ideology of competition and conflicting interests of the people, as well as to rely on other people. This orientation appears to reflect a sort of solidarity and sense of belonging with other people at a more global level.

Collectivism, however, mostly reflects concern for close people, and attachment to closer and more traditional groups, first of all, family. Low collectivism could indicate a burgeoning individualism, in the sense of being free from bonds to traditional groups, and perhaps a degree of non-conformity. This interpretation is particularly appealing if we take into account that our sample consisted mostly of young people and students.

It is interesting to note that our participants had higher average scores on collectivism (M = 6.7, SD = 1.23) than individualism (M = 5.92 SD = 1.05), both rated on 9-point scales, t (69) = 4.08, p < .001. Both scores were normally distributed and, importantly,

they were not correlated ($r = .04$), which supports the idea of two orthogonal dimensions, rather than a bipolar one. We shall, therefore, use the indexes of individualism and collectivism as two separate moderator variables in further analyses.

The strength of ethnic identification is expressed as the rating on a 5-point scale. It is interesting to note that the participants demonstrated low attachment to the ethnic group ($M = 2.11$, $SD = 1.00$).

Dependent variables.

Measures of **individual and collective self-enhancement** were calculated from the ratings of product preferences through several steps. First, for each of the products, we combined the answers to the two questions: how much participants would like to buy the product and the likelihood that they would recommend it to a friend (α coefficients ranged from .85 to .90 for hotels, and from .82 to .87 for honey products). Next, we averaged the preferences for domestic, foreign, high-status and low-status products. We then computed the differences along the two dimensions: product origin and product status, so as to get an index of collective enhancement (expressed as the preference for domestic over foreign products) and of individual enhancement (the preference for high-status over low-status products).

Higher values indicate stronger tendency to prefer domestic over foreign products (collective enhancement) and stronger tendency to prefer high- over low-status products (individual enhancement). The mean value of collective enhancement was .08 ($SD = 1.04$), and for individual enhancement .60 ($SD = 1.13$), indicating a stronger tendency for individual self-enhancement in the whole sample, t (69) = -2.79, $p = .007$. Both measures were normally distributed (which was tested by the Kolmogorov - Smirnoff test).

Testing the effects of mortality salience and individualism/ collectivism on individual and collective enhancement

To test the hypothesized effects of mortality salience inductions, as well as the moderator effects of individualism and collectivism, we conducted moderation analysis

using the PROCESS for SPSS and SAS macro (A. Hayes, 2013). We will present the analysis of collective and individual enhancement in turn since the program does not allow repeated measures variables. It is important to note that, when entered in the same model, individualism and collectivism did not show any interactions with one another, nor with the experimental conditions.

   a. Collective enhancement

First, we tested the following three models, with different moderators:

1.

Collectivism

MS vs. control → Collective enhancement

2.

Individualism

MS vs. control → Collective enhancement

3.

Identification with ethnicity

MS vs. control → Collective enhancement
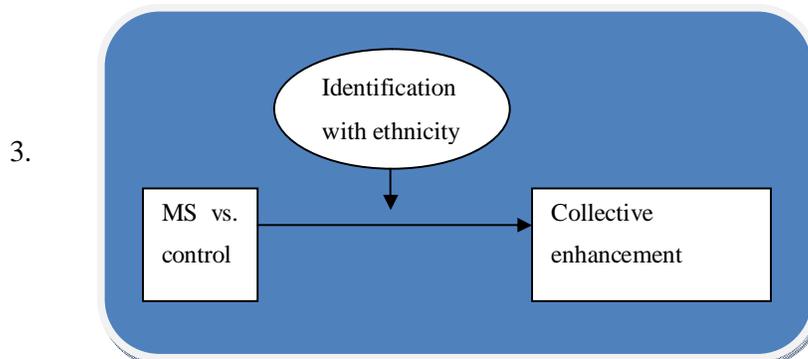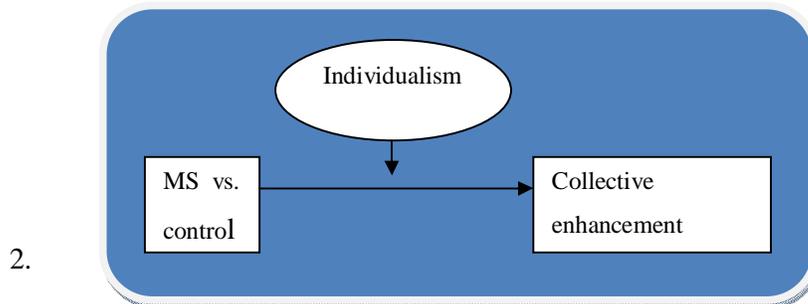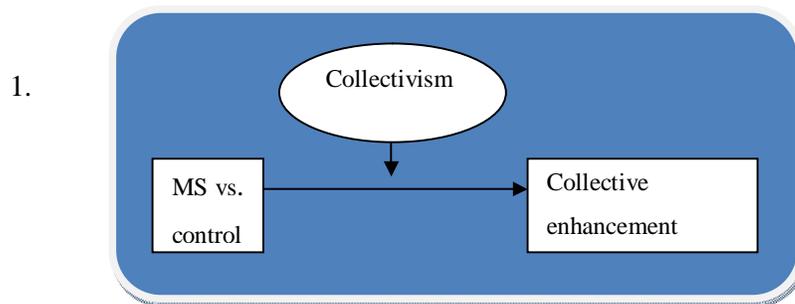
The second model proved to give the best prediction, as demonstrated by the overall coefficients, $R = .35$, $F (3, 66) = 3.04$, $p = .035$. There were two marginally significant effects, of experimental condition, ($b = -2.45$, 95% CI from -5.24 to .33, $p = .08$) and individualism ($b = -.69$, 95% CI from -1.41 to .03, $p = .06$). The interaction did not prove significant. The results suggest that persons low in individualism showed higher collective enhancement tendencies. However, reminders of mortality lowered this tendency: participants in the mortality salience condition showed lower preferences for domestic over foreign products.

Further breakdown of conditional effects revealed that experimental inductions had effect at the low ($b = -.80$, 95% CI -1.49 to -.11, $p = .023$) and, marginally, medium ($b = -.45$, 95% CI -.93 to -.03, $p = .069$) levels of individualism[23]. In other words, persons low (and not high) on individualism lowered their collective enhancement tendencies when faced with mortality reminders. Quite the contrary to the expectations, less individualistically oriented persons did not collectively enhance to shield themselves from the threat of mortality awareness.

To explore the effects in more detail, we also dummy coded the individualism scores and entered them in a 2 (condition: MS vs. control) x 2 (individualism: high vs. low) analysis of variance. Here, we replicated the significant main effect of condition, $F (1, 66) = 4.13$, $p = .046$, $r = .24$. The interaction term with individualism was not significant, $F (1, 66) = 2.12$, $p = .150$) (Figure 12). Since the Process breakdown of individualism scores was much more specific, this interaction was only marginally significant with a median split.

To investigate the effect in more detail, we conducted simple effect analysis in low and high individualism participants. Participants low in individualism were susceptible to experimental inductions – mortality salience decreased their tendency to collectively self-enhance, $F (1, 33) = 4.64$, $p = .039$, $r = .35$. Conversely, the induction did not have significant effects on participants high in individualism.

The sample in this experiment is not sufficiently large to establish the precise levels of individualism at which the experimental effects are present, but nevertheless, it allows

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[23] These levels were automatically defined as the mean and plus/minus one standard deviation from mean by the PROCESS software.

tracing a clear tendency that lower levels of individualism mean lowered collective enhancement after death reminders.

Figure 12

Effects of experimental condition and individualism on collective enhancement
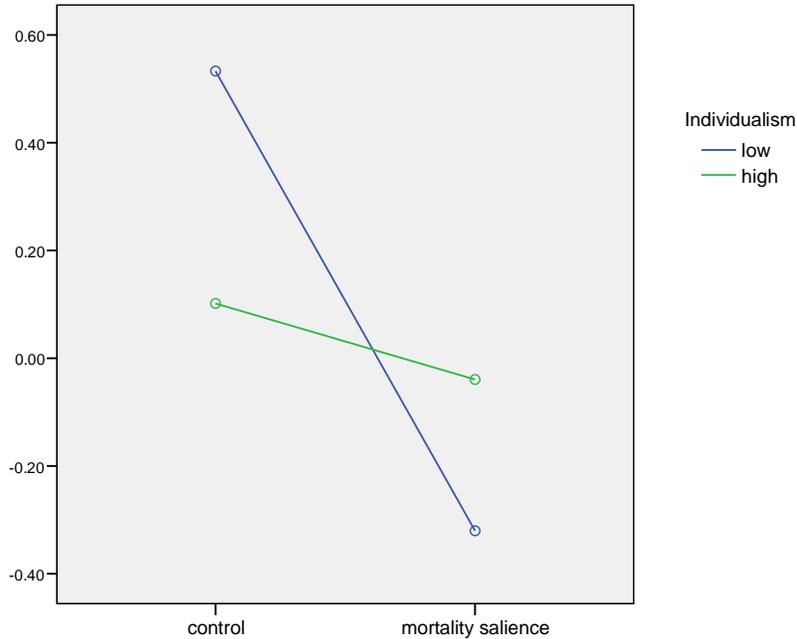
Overall, the first and the third moderation models did not prove significant, leading to the conclusion that neither collectivism nor the strength of ethnic identification were significant moderators of the reactions to mortality reminders. However, some of the contrasts proved relevant. In the case of the first model, in which collectivism was the moderator, the mortality salience induction had significant effects on collective enhancement in persons with medium levels of collectivism ($b = -.50$, 95% CI -.99 to -.00, $p = .047$). For these participants, mortality reminders lowered the tendency to collectively self-enhance, i.e. to show a preference for domestic over foreign products.

The same difference was also significant in the third model. Namely, participants with medium levels of ethnic group attachment showed most susceptible to the effects of

mortality reminders, which also lowered their collective enhancement ($b = -.49$, 95% CI -.99 to -.01, $p = .054$).

b. Individual enhancement

We tested the same moderation models with the measures of individual enhancement.

1.

2.

3.
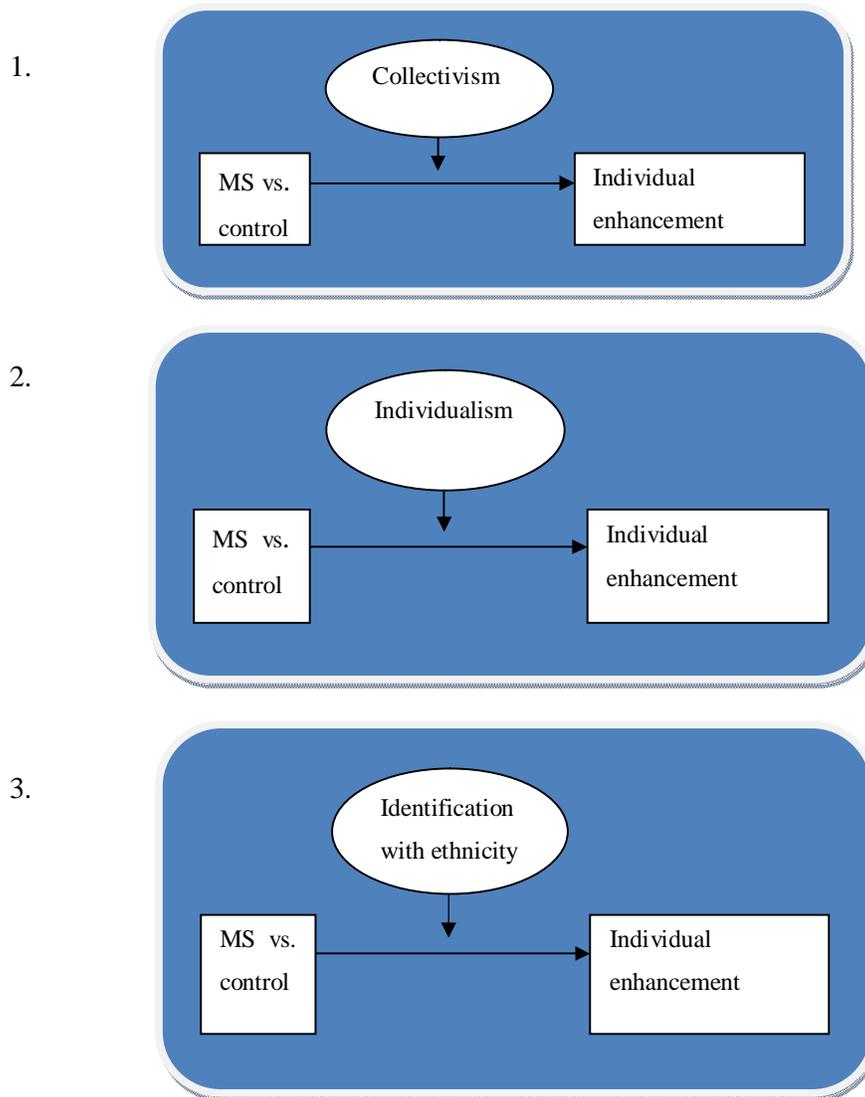
In the case of individual enhancement, only the first model proved to give significant prediction, $R = .33$, $F(3, 66) = 2.76$, $p = .049$. The main effect of condition was marginally significant ($b = 2.38$, 95% CI -.60 to 5.34, $p = .116$), such that participants in

the mortality salience condition showed a somewhat higher tendency to self-enhance individually, i.e. to prefer high- over low-status products.

The main effect of collectivism proved significant, ($b = .72$, 95% CI .07 to 1.37, $p = .03$). The higher the collectivism of the participant, the more he or she expressed the tendency to individually self-enhance, i.e. to prefer high-status over low-status products. The interaction term also approached conventional levels of significance ($b = -.33$, 95% CI -.77 to .11, $p = .135$).

To inspect the interaction more closely, we dummy coded the collectivism scores, by a median split. We entered this variable into a 2 (condition: MS vs. control) x 2 (collectivism: low vs. high) analysis of variance. The significant main effect of collectivism level ($F (1, 66) = 4.74$, $p = .033$) was qualified a highly significant interaction term of condition and collectivism, $F (1, 66) = 6.25$, $p = .015$, $r = .29$. We present the interaction in Figure 13.

To break down the interaction, we conducted simple effect analysis in participants low and high in collectivism. Interestingly, for participants low in collectivism mortality reminders heightened the preference for high-status products, $F (1, 33) = 5.07$, $p = .031$, $r = .36$. The opposite although non-significant trend was observed among collectivistic participants: reminders of mortality tended to lower their preference for high-status products.

Figure 13

Effects of experimental condition and collectivism on individual enhancement
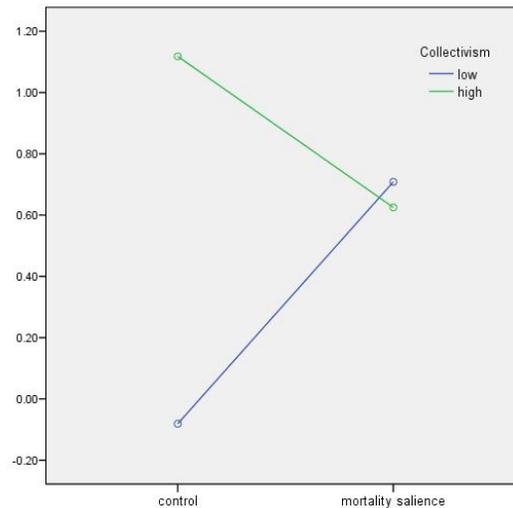
c. Individual vs. collective enhancement depending on the status of the product

The previous analyses have shown that participants with differing value orientations tend to react differently to mortality salience inductions. To understand in more detail the exact nature of these reactions, let us take a look at the data from another perspective: preferences for individual vs. collective enhancement. Participants high in individualism demonstrated a strong preference for individual compared to collective enhancement (F (1, 34) = 10.16, p = .003. r = .48), whereas low individualism participants showed no such preference.

On the other hand, high collectivism participants appeared to have used both collective and individual enhancement. On average, they also tended to be more prone to individual enhancement than collective (F (1, 33) = 3.85, p = .058, r = .32), although this preference was not as strong as in individualists. However, their use of both individual and collective enhancement strategies tended to be curtailed, rather than encouraged by mortality reminders. The pattern was quite different in the low collectivism participants,

who consistently preferred individual to collective strategies (F (1, 33) = 4.38, p = .044, r =.34), even more so in the mortality salience condition (F (1, 34) = 7.93, p = .008, r =.44).

Since the pretest revealed partly different patterns of preference for prestigious and non-prestigious products, we investigated how these patterns were affected by mortality salience in high and low collectivism participants (Table 33).

We can observe several interesting patterns in the results. Among the prestigious products (hotels), participants generally preferred the most expensive ones, which we interpreted as an individual enhancement tendency. The opposite is true of the non-prestigious products (honey) – among these participants preferred the domestic products, which suggests a collective enhancement tendency. A general pattern could thus be described as individual enhancement in preferences for prestigious and collective enhancement in preferences for non-prestigious products. For product preferences to allow enhancement of the individual self-image, it is essential that the products possess a special symbolic value (e.g. that they can be related to a certain lifestyle or a certain societal class). On the other hand, more everyday products seem to afford choices that enhance a collective image of the self.

Further, as can be seen by comparing the two tables below, collectivism and individualism appear to produce mirror-image effects in reactions to death reminders. Collectivism does seem to produce stronger effects, which is expected, having in mind that it makes a more coherent value orientation in the present context.

If we look at the preferences for the prestigious products (hotels), in low collectivism participants mortality reminders enhanced individual enhancement F (1, 33) = 7.46, p =.010, r = .43, whereas the opposite was true of high collectivists, F (1, 33) =3.20, p =.083, r =.30. What specific ratings were affected by the inductions? In low collectivists, mortality reminders tended to both heighten preferences for high-status products and lower preferences for low-status products. In high collectivists, these reminders tended to decrease the preferences for high-status products.

177

Table 33

Individual vs. collective enhancement depending on collectivism and product status

		high-status (hotels)		low-status (honey)	
		individual	collective	individual	collective
low collectivism	MS	1.43 (1.58)**	-.90 (1.24)	-.01 (1.19)	.32 (1.20)
	control	.09 (1.30)**	-.47(.91)	-.25 (1.42)	.60 (1.48)
high collectivism	MS	.95 (1.23)*	-.43 (1.14)	.29 (1.31)	.35 (1.46)*
	control	1.76 (1.42)*	-.15 (1.47)	.47 (1.19)	1.33 (1.69)*

*Note: individual enhancement scores denote differences in ratings for high- and low-status products (in favor of high-status products), while collective enhancement scores are computed as differences between domestic and foreign products (in favor of domestic products).

** p <.05, *.10 <p <.05

In both high and low collectivists, mortality salience reduced the use of collective enhancement in preferences for non-prestigious products; however, this decrease was more pronounced in high collectivists F (1, 33) =3.35, p =.076, r =.30. A parallel and somewhat more convincing effect is found in participants low in individualism (Table 34). Mortality salience lowered their collective enhancement (F (1, 33) = 4.44, p = .043, r =.34) reflected in hotel preferences, and tended to lower their collective enhancement in honey preferences. Mortality salient participants both tended to reduce the preferences for domestic products (in particular, the high-status honey and low-status hotel), and to increase preference for foreign products (especially the high-status hotel).

Table 34

Individual vs. collective enhancement depending on individualism and product status

		prestigious (hotels)		non-prestigious (honey)	
		individual	collective	individual	collective
low individualism	MS	1.00 (1.03)	-.91 (1.31)*	-.08 (1.25)	.26 (1.58)
	control	.91 (1.59)	-.12(.88)*	.16 (1.34)	1.18 (1.93)
high individualism	MS	1.37 (1.70)	-.47 (1.15)	.31 (1.24)	.39 (1.08)
	control	1.00 (1.64)	-.53 (1.48)	.08 (1.39)	.73 (1.14)

*Note: individual enhancement scores denote differences in ratings for high- and low-status products (in favor of high-status products), while collective enhancement scores are computed as differences between domestic and foreign products (in favor of domestic products).
** p <.05

d. Mediation effects

We first explored the cognitive and affective reactions to the experimental inductions. Whereas death thought accessibility was not affected by the mortality reminders, cognitive response was significantly more related to death after death reminders than in the control condition, F (1,68) = 38, $p < .001$, $r = .60$ (Table 35).

The mortality salience induction altered neither positive nor negative affect. As in Experiment I, we conducted additional analysis on PANAS items that are related to fear and anxiety. We registered marginally significant effects on the following items: *upset* (F (1, 68) = 3.76, $p = .057$) and *frightened* (F (1, 68) = 3.36, $p = .071$).

Table 35

Cognitive and affective reactions to the experimental inductions

condition	death-related thoughts	death thought accessibility	positive affect	negative affect
Mortality salience	1.91 (1.84)**	1.89 (.87)	2.75 (.87)	1.77 (.84)
Listening to music	0 (0)	1.83 (.71)	2.84 (.56)	1.57 (.44)

*Note. Numbers given are means (and standard deviations). Average number of death-related thoughts is computed from frequencies. Death thought accessibility is the number of death-related completions on the word fragment completion task. Positive and negative affect scores were given on 5-point scales.
** p <.01

Next, we explored the relations between the different measures of cognitive and affective reactions. Higher negative affect was positively related to higher death-thought accessibility ($r = .24$, $p = .024$). We also observed a marginally significant correlation between the measures of cognitive response and the general index of negative affect ($r = .18$, $p = .065$), as well as with responses to the item *upset* ($r = .26$, $p = .014$). Interestingly, the measures of cognitive response and death-thought accessibility, which we can interpret as indicators of conscious vs. non-conscious cognitive processes were not related.

Next, we inspected the relations between the mediators and the outcome variables (i.e. the aggregated measures of individual and collective enhancement). The only significant relation we observed was a negative relation between the index of positive affect and the aggregated measure of individual self-enhancement ($r = -.22$, $p = .034$). Since we could not establish relations between the three proposed elements of the meditational model, this rendered further analyzes superfluous.

Nevertheless, we wanted to test the full models of moderated mediation, with the measures of collectivism/ individualism, as moderators, and the cognitive/affective reaction measures as mediators of mortality salience effects on individual and collective enhancement. None of the models proved to give a significant prediction.

From the analyses of the cognitive and affective processes that followed the mortality salience inductions, we can conclude that the induction was reflected in conscious-level death thoughts, but not implicit cognitive (death-thought accessibility) or affective reactions. We can conclude that the established effects of individualism/ collectivism and mortality salience on individual and collective self-enhancement tendencies were not mediated by either of the processes studied here (lowered affect or cognitive reactions to the inductions).

Discussion

In the present experiment, we investigated whether mortality reminders instigate different reactions in people with differing personal value orientations. Specifically, we tested whether engaging in individual and collective self-enhancement would depend on the degree the person embraces individualism vs. collectivism. The applied product preference paradigm allowed us to explore these reactions in an ecologically valid context, through preferences for high vs. low-status products (individual enhancement), as well as domestic vs. foreign products (collective enhancement).

First of all, we found that mortality salience decreased collective enhancement, whereas it also tended to strengthen individual enhancement. However, the reactions depended on the levels of individualism or collectivism of the participant. The interactions demonstrated that in people low in collectivism, mortality reminders led to strengthened individual enhancement. Conversely, for participants low in individualism, death reminders lowered collective enhancement tendencies.

The present findings regarding individual enhancement are in line with the previously described experiments within the same methodological paradigm (Heine et al., 2002; Mandel & Heine, 1999) as well as with more general TMT findings documenting operation of self-enhancement strategies (e.g.Baldwin & Wesley, 1996; Burke et al., 2010; Dechesne et al., 2003; Greenberg et al., 2003; Mikulincer & Florian, 2002; Pyszczynski et al., 2004). We extend these findings by demonstrating how the level of

collectivism influences the terror management function of individual self-enhancement. In line with the expectations, low collectivism increased while high collectivism decreased individual enhancement after death reminders. This finding casts additional light on the previous experiments, i.e. the failure to observe mortality salience effects on several measures of individual enhancement in Experiment III. The present study suggests that we might not have found any effects since we did not control for the level of collectivism.

Our findings highlight the role of both individual differences and cultural specificities in the choice of terror management strategies. These findings fit nicely with some of the previous findings from studies from both Western (Harmon-Jones et al., 1997; Landau et al., 2004) and non-Western cultures (Heine et al., 2002). Value orientations are considered to be characteristics of the cultural context (Triandis, 1996), but different patterns of values can exist in the same context. Within the predominantly collectivistic cultural context in Serbia, different strategies for managing terror of death can still be chosen among. Although the individual enhancement strategies do not appear to be pervasive, they still can be a part of the repertoire of specific individuals.

On the other hand, the finding that mortality reminders *lowered* collective enhancement strategies, particularly in persons low in individualism, is an unexpected result having in mind previous studies (Fransen et al., 2008; Jonas et al., 2005). The effects registered here are practically reversed with regard to the hypothesis, as well as the previous findings of the present study, obtained with various measures of collective enhancement (Experiment II). It appears that there are three possible explanations for these findings.

Firstly, it should also be noted that we discovered our sample to be rather weakly attached to the ethnic group ($M = 2.11$). In their investigation of the effects of mortality reminders on preferences for national products, Jonas and associates (2005) failed to find these effects in a student sample, although they were found in an adult sample. Since our participants were not strongly attached to the national (i.e. ethnic) group, it might be the case that, when reminded of death, they would not recourse to collective enhancement. Although this explanation might seem plausible, we believe that there is a strong argument against it. Namely, in the Experiment 2, we did observe heightened collective enhancement in a sample from the same population. In that experiment, we did not take the pre-test measures of national identification, but measured it after the

182

inductions. Still, we can observe that the mean value in the control group was comparable to the one observed here ($M = 2.46$). Even if it would, without question, be a good idea to test these effects in samples with higher national /ethnic identification, we do not think that these differences would suffice to account for the present findings.

Another important issue is that the nature of collective enhancement was not precisely the same in the two experiments. Whereas in the previous experiment we investigated perceptions of the in-group and the level of identification with it, here we asked about product preferences. It makes sense that preferences for domestic product can be treated as an indicator of collective enhancement (see also Reed, 2002), though a more indirect one than explicitly rating the characteristics of the groups or expressing the personal attachment to it.

As we framed the study as a test of product preferences we might have focused the participants to the consumer perspective and have not made the ethnic identity salient. Since product preferences primarily include an assessment of the relation between quality and price, this could have rendered the domestic products inferior to the foreign ones (Marinković, Stanišić, & Kostić, 2011). This is in line with the finding that whereas participants preferred domestic products among the non-prestigious product categories (i.e. honey), they did not prefer domestic prestigious products (hotels). Moreover, some prior studies suggest that the level of consumer ethnocentrism in Serbia is lower in younger, urban and female participants, which largely fits to the description of the sample of the current study (Marinković et al., 2011).

Another issue of importance are the specificities of experimental inductions – when choosing the countries that would represent the foreign origin of products, we opted for two countries that are geographically close and relatively similar to Serbia, i.e. Slovenia and Greece. These countries are not typically perceived as adversarial by people in Serbia, quite the contrary. We did this because we wanted to avoid confounding the "pure" effects of origin with possible negative out-group attitudes, which would be the case if we chose for instance Croatia instead of Slovenia (given the recent history of inter-ethnic tension) (Babić, 2006; Petrović, 2003). With this choice, the domestic vs. foreign contrast might have seemed less striking. Participants might engage in more pronounced collective strategies when Serbia is contrasted with countries that are perceived as more distinct and adversarial (see also Dechesne et al., 2000). The findings

from Experiment II, that demonstrated more favorable view of the in-group and higher in-group identification after reminders of death, support this contention.

To summarize, one possible interpretation is that our operationalization of collective enhancement did not allow observing the effects that are otherwise present. Still, we would have to explain that the effects are not just absent but reversed, at least in the low individualism group. Moreover, an alternative summary of the findings would be that mortality salience led to decreased self-enhancement, both individual and collective, apart from a single case - namely, that it increased self-enhancement in low collectivism participants.

This finding suggests that different and even conflicting motives sometimes can be made salient as a result of mortality reminders (Du & Jonas, 2014). This explanation is rather speculative at this point, but it is in line with some of the findings from previous experiments, suggesting that mortality salience can give rise to different motivations. In Experiments III and IV, we revealed a tendency of death reminders to decrease some forms of individual self-enhancement, i.e. memory positivity bias and better-than-average effect. The same pattern is observed in the current study: in low individualism/ high collectivism participants, mortality reminders decreased collective and tended to decrease individual enhancement. Previous research has suggested that mortality reminders can even give rise to opposite reactions, depending on some situational or dispositional cues (Arndt et al., 2004; Jonas et al., 2008).

To attempt a more specific account of the current findings, in people low in individualism reminders of death could have instigated a heightened self-awareness or primed a change in perspective on the self. It appears as though thinking about death could have lead to a more global and serious perspective on life, which overshadows the (superfluous) enhancement tendencies. Although this is a rather speculative explanation, it could be related to the observed raised salience of death thoughts at the conscious level. Terror management theory presupposes that symbolic defenses operate when people are in the intuitive and not rational mode of cognitive processing (Simon et al., 1997). Perhaps some of our inductions provoked the rational, and not the intuitive mode, which lead to these reversed effects.

An alternative explanation would be that mortality reminders activated some culturally specific norms that lead to self-effacement, rather than self-enhancement, among the

low individualist participants. This account would be consistent with some previous studies that investigated the activation of humility norms. The construct of humility as a value particularly relevant to some cultural contexts, encompasses several tendencies that could be contrasted with self-enhancement (Kesebir, 2014; Tangney, 2000).). Humility is characterized by a propensity for seeing oneself in a true perspective, showing capacity to embrace one's faults and feeling less of an urge for self-serving manoeuvres, as well as perceiving one's smallness in the grand picture of the existence and feeling more connectedness with larger-than-self entities, e.g. the humanity (Kesebir, 2014, p. 611). Chancellor and Lyubomirsky (2013) similarly suggest that it entails a self-accepting attitude and freedom from distortions of self-relevant information. To put these in more illustrative terms, humility is characteristic of a more "quiet", or a less "noisy" self, that typically wants to show its worth and will use every opportunity to enhance it.

Importantly, a series of experiments showed that more humble participants, as well as those primed with humility clearly decreased the defensive self-enhancing reactions after death reminders (Kesebir, 2014). For instance, participants high in (self-reported) humility showed a reduced self-esteem striving after mortality salience inductions. Further, reminding participants of personal experiences of humility lead to a reduced death anxiety. As concerns the present findings, it is not possible to give an unambiguous explanation of the reversed effects without further study. We will revisit this issue in the context of other findings in the general discussion and attempt to delineate some more precise venues for future research.

Finally, this study investigated the operation of potential cognitive and affective mediators of the mortality salience effects. Our findings do paint a clear picture in this regard: whereas mortality reminders lead to both cognitive and affective reactions, these reactions did not mediate their effects on increasing self-enhancement strategies. We will discuss these findings further after presenting the analyses on aggregated data in the following.

Additional Analyses of Mediators

Since we measured the cognitive and affective reactions following mortality salience inductions in each of the experiments, this allowed us to make a joint database and conduct a small meta-analysis of the effects. With this larger sample, we detected significant effects of mortality salience inductions on both cognitive and affective measures. The effects were small, but reliable (the statistics are detailed in Table 36).

Table 36

Cognitive and affective reactions to experimental inductions on aggregated data

condition	death-related thoughts	DTA (fragment completion)	DTA (lexical decision)	positive affect	negative affect
MS	1.34 (1.79)	.035 (1)	630 (84.11)	2.70 (.83)	1.68 (.70)
Listening to music	.61 (1.38)	-.02 (.99)	669 (127)	2.98 (.70)	1.54 (.55)
N	358	226	133	359	359
*F***	74.88	.21	4.51	11.77	4.24
p	.000	.649	.036	.001	.040
r	.46	/	.17	.18	.11

**Welch correction was used, since the groups were of unequal sizes and the homogeneity of variance assumption was not met. DTA = death-thought accessibility, measured either by a fragment-completion or lexical decision task. *r* denotes effect size (computed as the squared root of η^2).

We can observe that death reminders led participants to express more spontaneous thoughts about death, as well as somewhat lowered positive and more negative affect, compared to the groups who previously thought about music. The effects of mortality reminders on death thought accessibility are less clear-cut. We did observe a small effect on the lexical decision task latencies – participants who previously thought about death were quicker to recognize death-related words in the task. However, in the word fragment completion task we did not detect any experimental effects. Since we used two

different versions of the task (an easier version was designed for Experiment V), we looked at these versions separately. When combining the data from experiments Ib, II and III, in which the longer version was used, we detected a small but significant difference, $M_{exp} = 2.65$ ($SD = 1.60$), $M_{con} = 2$ ($SD = 1.41$), $F (1,154) = 7.20$, $p = .008$, $r = .21$. The shorter version from experiment V did not detect any significant differences. Overall, we can conclude that mortality salience inductions were reflected in heightened death-thought accessibility (at both conscious and non-conscious levels), as well as somewhat lowered affect, compared to the control group. The other important issue is whether these reactions mediated the experimental effects of the inductions. We replicated the meditational analyzes on aggregated data, but only for those experiments where the effects of inductions were detected, i.e. experiments II and V. Neither of the reactions we measured mediated the experimental effects – while the direct effects of the inductions were significant, the indirect effects were not. Although the inductions produced these reactions, they were not related to the dependent measures[24]. These findings replicate the ones from the present experiment and corroborate its conclusions.

Discussion

Even though mortality reminders in some cases did heighten death thought accessibility in our studies, we did not find support for its role as a mediator of mortality salience effects. It should be observed that in their meta-analysis, Hayes and associates (2010) also failed to find evidence for mediation. They suggested that the pattern of relations is not straightforward, and this might be a case of interactional rather than simple mediation, i.e. that death-thought accessibility is related to outcome measures in the experimental, but not control condition. To investigate this, we looked at correlations at

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[24] We conducted separate analysis for each of the experiments, but, to provide a more robust test of the effects, we combined the data from the two experiments. Since different operationalizations of the dependent measures were used, we first standardized the measures, so that they can be comparable. Even though this procedure allowed more statistical power with regard to sample size, different measures introduced an additional source of variance, thus rendering the effects difficult to trace. The experiments were not optimized for testing the mediation effects, so this should be noted when interpreting the results. However, the effect sizes did not even approach statistical significance with either separate or combined measures.

different levels of the independent variable but did not replicate the pattern of interactional mediation.

The failure to observe mediation could be attributable to some methodological issues in experimental procedures. It should be mentioned that we did observe meaningful relations between explicit measures of death thought and the measures of individual and collective enhancement. In Experiment II, the number of mentioned death thoughts correlated negatively with the collective enhancement measure ($r = -.39$, $p = .037$). Conversely, we did not observe any significant relations in Experiment III. However, a complex pattern of results emerged from Experiment 5. These relations emerged only in the experimental (and not control) situation and differed depending upon the level of individualism. Namely, participants low in individualism who reported more thoughts about death, engaged to a *lesser* extent in individual enhancement ($r = -.54$, $p = .015$). Conversely, participants high in individualism who thought more about death also increased their individual self-enhancement, $r = .61$, $p = .003$ and also tended to increase collective enhancement, $r = .37$, $p = .060$. These results clearly mirror the effects of experimental inductions and cannot be explained entirely by the logic that less conscious thinking entails less defensiveness. This applied to some cases, but not others. It appears that persons with different value orientations could not only differ in reactions to mortality reminders, but also in the processes that mediate these reactions.

The present findings suggest that defense strategies might not be limited to or conditional on the operation of non-conscious processes. The observed activation of conscious-level cognitive processes as a result of mortality reminders calls into question the assumption that defenses against death awareness do not operate at a conscious level (see also Lambert et al., 2014). It also challenges the idea that conscious and non-conscious reactions to mortality reminders should necessarily differ (demonstrated for instance in Greenberg et al., 2000; Routledge et al., 2004). In support of this contention, we observed symbolic defenses in reaction to mortality reminders, even if conscious death thoughts were previously reported and we did not observe an increase in death thought accessibility.

We should note we did not vary the delay period between the inductions and the defensive reactions in the present study. A very exact study of the meditational processes seems warranted to clarify these issues since this was not the focus of the

present study. One of the logical steps would be openly discussing common terror management strategies with participants, and testing whether they still would be operating afterwards. We will discuss some further implications of our findings and the issue of the temporal sequencing of reactions in more detail in the general discussion.

On the other hand, we can say that we have replicated the TMT tenet that affective reactions are not what drove the anxiety-buffer, shielding from the awareness of death. The mortality salience inductions did arouse affective reactions but they were not very intense (judging from the rather small effects) and did not mediate the effects of death reminders on the use of symbolic defenses. We can hypothesize that, when death is tackled at an abstract, rather than concrete level (for instance, for the terminally ill), the affective reactions are neither very pronounced nor responsible for the strategies employed.

<div align="center">***</div>

In the general discussion section, we will take up the central findings from the described studies and consider them from the perspective of terror management theory, alternative accounts of self-esteem striving as well as the relevant characteristics of the cultural context.

General Discussion

"The thing that a human needs is not a state without tension, but an aspiration and a fight for something worth craving for and stumblingly seeking."

(Victor Frankl)

In the current study, we tested the basic tenets of terror management theory. In five experiments, we tested whether mortality reminders would lead to strengthened ties with the ethnic group (Experiment II) and a general enhancement of the individual self-image (Experiments III and IV). Further, we explored whether personal value orientations influenced preferences for collective or individual enhancement (Experiment V). Before proceeding to the findings, we will present a brief overview of the design of the experiments (Figure 14).

The first experiment we conducted was meant to test experimental procedures and materials, so it is not presented here. In Experiment II, we reminded participants of death, other types of concern (life uncertainty, exams) or a neutral topic, and measured their strategies of collective enhancement: how much they identified with the ethnic group, how entitative they perceived it to be, how much they endorsed both positive and negative stereotypes about the ethnic group, how they rated the positive and negative traits of the groups, as well as the extent to which they ascribed the traits characteristic of the group to the self (self-stereotyping). In this experiment, global trait anxiety was introduced as a potential moderator.

In Experiment III, we similarly reminded participants of death, other types of concern (life uncertainty, exams) or a neutral topic, and measured their strategies of individual enhancement: their memory biases, i.e. perceptions of positivity and continuity in autobiographic events, the extent to which they rated themselves as better than the average peer (BTA) and their unrealistic optimism about the personal future. Both self-esteem and global trait anxiety were measured as moderators.

In Experiment IV, we investigated the same set of individual enhancement strategies, but tested them in a simplified designed, contrasting mortality salience induction with a neutral control. We did this in order to replicate the results from the previous experiment and remove possible confounds.

In Experiment V, we tested the effects of mortality reminders on both individual and collective enhancement, in a product-preference methodological paradigm. Of central importance, we investigated whether personal endorsement of individualism and collectivism would moderate these effects.

Figure 14

Overview of the experiments

Experiment II

Global anxiety

Mortality salience
Uncertainty
Exams
Control

Collective enhancement
Ethnic identification
Entitativity
Stereotypes + / -
Positivity + / -
Self-stereotyping

Experiment III

Self-esteem
Global anxiety

Mortality salience
Uncertainty
Exams
Control

Individual enhancement
Memory positivity
Memory continuity
Better-than-average (BTA)
Unrealistic optimism

Experiment IV

Mortality salience
Control

Individual enhancement
Memory positivity
Memory continuity
Better-than-average (BTA)
Unrealistic optimism

Experiment V

The following table (37) summarizes the crucial findings of the experiments. In the first column, we present the tests pitting the mortality salience to other conditions, and in the following columns, we present the separate comparisons with other conditions (uncertainty salience, exam anxiety salience and neutral control – listening to music).

Table 37

Overview of the findings from the current study

	MS vs. controls	MS vs.US	MS vs. ES	MS vs. control
Experiment II				
CE aggregate	**	*	*	***
identification	**	**	ns	**
entitativity	**	ns	*	**
stereotypes (+)	ns	ns	ns	*
stereotypes (-)	ns	**	ns	ns
positivity (+)	***	ns	**	***
positivity (-)	ns	*	ns	ns
self-stereotyping	ns	ns	ns	ns
Experiment III				
IE aggregate	**ns**	**ns**	**ns**	**ns**
memory positivity	ns	ns	ns	ns
memory continuity	** REV	**REV	ns	**REV
BTA	*	*	ns	ns
unrealistic optimism	ns	*	ns	ns
Experiment IV				
memory positivity				*REV
memory continuity				ns
BTA				*REV
unrealistic optimism				ns
Experiment V	Individual enhancement	Collective enhancement		
MS	ns	** REV		
collectivism	**	ns		
individualism	ns	ns		
MS x collectivism	**	ns		
MS x individualism	ns	*REV		

*** p < .01, ** p < .05, * p < .1,REV designates findings in a reversed direction in relation to the hypothesis

Do mortality reminders lead to an enhancement of collective and individual self?

Based on an impressive amount of empirical evidence (Burke et al., 2010; Greenberg, 2012; Pyszczynski et al., 2004, 2015; Solomon et al., 2004), we hypothesized that reminding participants of death would lead to a strengthened tendency to enhance both the collective and the individual self-image. What do our experiments reveal?

Findings from the present studies offer mixed support for the previously established effects, and, consequently, the basic tenets of terror management theory. Reminders of mortality most convincingly affected collective self-enhancement tendencies (Experiment II). More specifically, participants reminded of death showed an increased identification with the ethnic group, perceived it as more unified and in more positive tones, compared to participants reminded of uncertainty, exams or a neutral topic. These effects replicate and extend previous findings from other countries (Castano, 2004; Castano et al., 2004; Dechesne et al., 2000; Greenberg et al., 1990; Harmon-Jones et al. 1996). What is more, we have observed a meaningful pattern of effects across several dependent measures. The effects observed are of weak to moderate strength (the *r* coefficient ranging from .2 to .3), thus comparable with previous studies. The average strength in Burke and associates' meta-analysis (2010) was somewhat higher (.35), but it was also found that death reminders had strongest effects on measures of attitudes towards people, and less strong with other types of measures (cognitive or behavioural).

Now turning to the individual self-enhancement, we found that mortality reminders lead to an enhanced better-than average effect, as well as more expressed optimism about finishing college (Experiment III). Looking at the overall picture, the evidence for individual self-enhancement is less convincing than the collective. Better-than average effect has been shown to be one of the most robust enhancing strategies in both Eastern and Western cultures (Sedikides, Gaertner, & Cai, 2015). Other strategies were not affected by death reminders or were even reduced by them (we will comment on these findings shortly). Another point that should be taken into account is that the remaining indicators of individual self-enhancement (memory biases and unrealistic optimism) could be specifically affected by mortality reminders, as temporally tainted.

Importantly, we have revealed that death reminders clearly boosted individual enhancement in low collectivism participants (Experiment V). This finding greatly

clarifies the overall picture. It appears that boosting of individual self-esteem could be serving a death-buffering function for some individuals, who tend to embrace values at odds with the dominant collectivist pattern. As suggested by the interpretation of the individualism / collectivism dimensions, low collectivism is related to a "burgeoning" individualism, in the sense of breaking free from the bonds of traditional groups. It makes sense that the individuals perceiving themselves as independent from these groups would be more oriented towards enhancing the individual self-image, and even base the anxiety buffer system on it.

These findings show overlap with previous TMT cross-cultural research documenting less consistent effects of mortality reminders on strengthening the personal positive self-image (Du et al., 2013; Du & Jonas, 2014; Heine et al., 2002). The dominant cultural norms within a context shape the specific nature of the anxiety buffer. Moreover, this finding is in accordance with previous research suggesting that, within the same cultural context, several individual characteristics can moderate the effects of mortality reminders on self-esteem striving (Dechesne & Kruglanski, 2004; Greenberg et al., 1992a ; Landau et al., 2004). We have shown that personal value orientation, as a characteristic of the individual, yet closely related to the socio-cultural context, is another important source of differences in alleviating death anxiety.

Overall, the role of collective and individual self-enhancement in soothing the terror of death has received a partial support, and the findings suggest that the characteristics of the socio-cultural context affect this role. The present findings corroborate that self-esteem, as a component of the anxiety buffer against fear of death, is dependent upon the worldviews that the local context prescribes. In the local context, enhancement of the collective self-image appears to be a more prevalent death-awareness buffering strategy, in accordance with the strong collectivist values (Hofstede, 2001; Inglehart, 2007; Pešić, 2006; Shwartz, 2007). The implications for further research, in particular from a cross-cultural perspective, clearly highlight the importance of taking into account these specificities. We will discuss these findings from a cross-cultural perspective shortly.

A critical view on TMT: the issue of replicability

The present study offered a complex pattern of results: while we have found support for some of the hypotheses, others were not supported or we even observed effects that were inversed with regard to the hypothesis. If we look at these findings from a perspective beyond terror management theory, the observed pattern resonates with the recent attempts to replicate some of the well-known experimental effects in psychology (Open Science Collaboration, 2015). In this large-scale study, only 39% of the effects were successfully replicated, suggesting that the effects can sometimes be difficult to trace, in particular the less robust ones (see also Klein et al., 2014). As already mentioned previously, the locally conducted social-psychological research has faced challenges in replicating some well-known and robust empirical findings from other contexts (e.g. Branković & Žeželj, 2010; Žeželj & Jokić, 2014).

The effects we sought to unravel in the present experiments can be stated to be rather subtle and presumably highly context-dependent. For instance, the meta-analysis of previous TMT studies has revealed stronger effect sizes in TMT experiments conducted in the USA than in other countries, as well as a number of other variables affecting effect sizes, e.g. the length of delay between inductions and measures of reactions, the precise nature of dependent variables, as well as sample structures (Burke et al., 2010).

Not being able to replicate some effects can have at least two interpretations: it could either be the case that the theoretical propositions are not correct or that it is difficult to observe the proposed effects due to the operation of the so-called "hidden" moderators. The most recent work on the replication study data (Van Bavel et al., 2016) suggests that the problems with reproducibility are not solely caused by insufficient statistical power or sample sizes, but also related to several contextual variables, as the timeframe and location of the study, structure of sample or dominant value orientations in the setting. Namely, the experimental setting and procedures often include at least some conditions that are left unspecified (i.e. the hidden moderators), that can affect the outcomes of the experiments. When the results are interpreted, these boundary conditions are usually disregarded, so that the findings come under the guise of greater generality than would be appropriate (Van Bavel et al., 2016).

Unfortunately, the crucial problem with the inability to replicate some finding is the fact that we cannot unequivocally resolve this dilemma. It is therefore difficult to give a

definitive judgment about the viability of terror management theory in the present context without further study. Here, we can concur with some previous critics of the theory that a lack of ability to derive more specific hypothesis from the general model is a significant drawback of the theory and allows post-hoc explanation of various outcomes (Martin & van den Bos, 2014).

However, one important point is that the findings are not incoherent and that patterns can be observed in the data suggestive of operation of systematic factors. Building on the present findings, the case could be made that contextual factors have affected the effects we investigated, primarily some culturally relevant moderators. Important moderators revealed in the present study are personal value orientations, i.e. individualism and collectivism that appear to channel the reactions to death reminders in divergent directions. Perhaps the theory could benefit from explicitly recognizing a number of relevant moderators by including them in the model, in order to provide more specific hypotheses (as also suggested by Jonas et al., 2008). In the following, we will discuss the crucial findings in more depth and suggest directions for future research that could elucidate the circumstances under which the proposed terror management processes emerge.

Is the awareness of death a unique threat?

One of the research goals was to establish whether mortality reminders pose a unique threat, with unique consequences, or are they just an instantiation of the more general category of source of anxiety or concern (e.g. van den Bos, 2001, 2009). To explore this, we contrasted mortality salience inductions with inductions of other types of concern - either similar existential ones (i.e. uncertainty reduction) or more everyday concerns (i.e. exam anxiety, as relevant to our participants). We also specified two versions of the hypotheses, a weak form, stating that the effects will only be observed in contrast to the neutral control situation (Burke et al., 2010; Solomon et al., 2004; Pyszczynski et al., 2004) and a strong form, claiming that the effects of mortality salience inductions will be observed in contrast with other sources of concern (Baldwin & Wesley, 1996; Castano et al., 2011; Landau et al., 2004; Rosenblatt et al., 1989).

First, the analysis of the scales that served as experimental inductions (Experiments II and III) indicated that all types of contents induced roughly the same level of anxiety.

This means that differences in reactions could not be explained by differences in the *intensity* of the aroused reactions, but the *contents* of the scales that served as experimental inductions. Besides, factor analyses corroborated clear and unidimensional structures of the respective scales, which was mostly confined to a single and dominant content of: a personalized fear of not being (mortality salience), unpredictability of personal life (uncertainty salience) and a fear of demonstrating lack of intelligence in front of others (exam anxiety salience). We believe that the inductions, in combination with a variety of dependant measures, allowed for disentangling the effects of various concerns.

From the findings (Table 37) we can observe that the strong version of the hypothesis was partially supported. Namely, the differential effects of mortality salience are observed on some of, but not all of the dependent measures. Still, in most cases, the most convincing contrast is that with the neutral control situation, while the other inductions sometimes produced tendencies in the same direction as death reminders. This finding contrasts one of the conclusions from Burke and associates' meta-analyses (2010), that stronger effects are typically observed in contrast with other aversive, rather than neutral inductions. However, these variations do not mean that other inductions produced systematic effects. To explore these findings more thoroughly, we also look at which of the inductions produced significant effects if we compared them with the neutral control situation. Findings are summarized in Table 38.

As can be observed from the findings, thinking about everyday concerns (i.e. exams) did not produce virtually any effects on the dependent measures, either related to collective or individual self-enhancement. Although this is clearly a salient ego-threat (related to the most central competence constructs), we suppose that merely imagining this threat was not experienced as a potent enough threat to invoke self-enhancement strategies. On the other hand, thinking about life uncertainty did produce effects – in some cases of the same, in other cases of the opposite direction compared to mortality salience inductions. It is worth noting that this difference supports the idea of distinguishing between a real, experienced anxiety and the potential for anxiety caused by envisioning a certain unfavourable scenario. The latter effect appears to be constrained to the fundamental, existential concerns.

Table 38

A comparison of the effects of the experimental inductions

	mortality salience	uncertainty salience	exam salience
identification (II)	+	-	-
entitativity (II)	+	-	-
stereotypes (+)(II)	+	+	-
stereotypes (-)(II)	+	-	-
positivity (+)(II)	+	+	-
positivity (-)(II)	+	-	-
self-stereotyping(II)	-	-	+ (warrior)
memory positivity(III)	-	-	-
memory continuity(III)	+ (reversed)	-	-
BTA(III)	+	+ (individual traits, reversed)	-
unrealistic optimism (III)	- (individual events + and reversed)	-	-

*Note: + designates a significant effect and – a lack of significant effects of the experimental inductions, when compared with the neutral control.

Uncertainty reminders in principle produced two effects: an increase in stereotypical thinking about the ethnic group (as suggested earlier, the effects on general positivity could also be explained via the increase in stereotypicality). With regards to individual

enhancement, we observed that thinking about uncertainty affected the self-ratings on *unambiguously* positive of negative traits specifically: it reduced the self-ratings on unambiguously positive and heightened self-ratings on unambiguously negative traits. Conversely, uncertainty inductions did not affect ratings of ambiguous traits that were specifically affected by mortality salience induction. This pattern of results seems to suggest that uncertainty reminders lead to somewhat less certainty in positive self-perceptions rather than a more clearly self-enhancement pattern induced by mortality reminders.

Thus, the present findings suggest that thoughts about different sources of existential or more everyday concern show different patterns of effects. First, we shall reiterate that we observed different effects while the level of induced anxiety was the same for different concerns. As can be seen from the summary above, death reminders produced stronger and more global effects, as they affected a greater number of variables (Baldwin & Wesley, 1996; Castano et al., 2011; Landau et al., 2004; Rosenblatt et al., 1989). In addition, the observed patterns suggest qualitative differences in the effects of mortality and uncertainty salience. To attempt a generalization, uncertainty salience appears to affect those aspects of self-perception that are more related to certainty (or probability), while the effects of mortality reminders go over and above to a more straightforward effects on positivity of perceptions and their contents.

In sum, the present study does support the uniqueness of a death-anxiety soothing motive, compared to other concerns, either existential or the more everyday ones. However, in extension of previous research (Hohman & Hogg, 2011; McGregor et al., 2001; van den Bos, 2009), our study also suggests that these other existential motives can produce effects similar or opposite to death reminders, depending on the precise reaction considered. These effects also appear to show some qualitative distinctions, i.e. affecting partially different outcomes, in addition to the previously revealed distinct temporal patterns (Martens et al., 2011). Further research into the exact nature of these similarities and differences is warranted, and the present framework of simultaneously investigating several inductions and several dependent measures appears promising.

How to explain the reversed effects?

In some of the experiments, mortality reminders did not lead to a strengthened but, conversely, to a weakened tendency to self-enhance. Since these findings are practically reversed in relation to the hypotheses, they deserve careful consideration. We observed two such cases. First, some indicators of individual enhancement, i.e. the better-than-average effect and memory bias were somewhat lowered after death reminders (Experiments III and IV). However, these effects were small and only approached conventional levels of significance. Second, participants high in collectivism / low in individualism showed decreased tendencies to both individual and collective enhancement after death reminders (Experiment V).

It is worth noting that the reversed effects have been replicated in three studies, which, in our opinion, renders the most apparent interpretation of the effects as statistical artefacts non-convincing. Their replicability suggests systematic and not random effects. It should be noted that this is not a completely surprising finding since the meta-analysis also revealed small, but reliable reversed effects of mortality reminders (Burke et al., 2010). Our study extends these findings by tracing the reversed effects more specifically to participants with low levels of individualism or high levels of collectivism, thus revealing an important moderator variable. The endorsement of specific value orientations could have rendered some standards or norms accessible that could have affected the reactions to death reminders. Importantly, these more atoned reactions could be better described as a slightly lessened self-enhancement rather than a complete reversal of this tendency (i.e. the mean values after experimental inductions still expressed tendencies along the lines of self-enhancement).

The first important point that should be considered in seeking the explanation for these results is the differences in experimental procedures in different experiments, since these could affect the effects measured. We have summarized the basic elements of the procedures in Table 38. The experiments differed in terms of the specific inductions used, the length of delay between the inductions and measurement of effects, as well as the framing of the tasks that measured individual and collective enhancement. Could these differences account for the fact that some of the effects were reversed? One possible explanation would be based in the length of delay between the inductions and measures – previous research has shown that mortality salience effects are stronger after

a longer delay (Burke et al., 2010). In our study, it was only Experiment IV that had a single-task delay, while all others introduced three-task delays. Since this difference was not systematically linked to whether the results observed are in accord with hypothesis or reversed, it cannot account for them. In addition, we did not precisely measure the time and did not control for it between participants.

The next possible explanation are the differences in inductions of mortality salience, namely, whether mortality thoughts were induced by responding to a scale or reading a text about personal death. The inductions could be argued to differ in their level of explicitness, the scale being a more subtle reminder than the text. However, the preliminary tests (Experiments 1a and 1b) did not reveal systematic differences in the effects of these inductions.

Table 38

Overview of the experimental inductions and conditions

	induction	conditions	delay (nr. of tasks)	framing
Experiment Ia	combined	MS (textual) vs. MS (scale) vs. control	2	/
Experiment Ib	combined	MS (textual) vs. MS (scale) vs. control	2	/
Experiment II	procedure 1 (scale)	MS vs. US vs. ES vs. control	3	self-focus (similarity to others)
Experiment III	procedure 1 (scale)	MS vs. US vs. ES vs. control	3	self-focus (distinctiveness from others)
Experiment IV	procedure 2 (textual)	MS vs. control	1	self-focus (attenuated)
Experiment V	procedure 2 (textual)	MS vs. control	3	product preference

We believe that the most convincing case could be made for the remaining difference in the procedures, namely the framing of the tasks in different experiments. The results suggest that in experiments in which the framing more explicitly raised self-awareness (i.e. Experiments II and III), the chances for observing an enhanced self-esteem striving were higher. Self-focus could be related to more defensive reactions, as suggested by

some previous research (Duval & Silvia, 2002). However, raised self-conscioiusness should also induce proximal, rather than symbolic defences. We cannot provide a straightforward answer since we did not systematicaly vary the framing of the task.

A theoretical framework that could be applied to clarify this issue is the norm-focus theory of normative conduct extension of terror management theory (Jonas et al., 2008; Frietsche, Jonas, Niesta Kayser, & Koranyi, 2009, see also Arndt et al., 2004; Greenberg et al., 1992a). Eva Jonas and associates suggest that the reason for the lack of specificity of many predictions of TMT is that the precise nature of reactions to mortality reminders depends on the norms that are salient for participants. They demonstrated that opposed reactions can be provoked by death reminders, depending on the norms that are primed prior to them (Jonas et al., 2008). For instance, mortality reminders lead to heightened pacifism in participants primed with it, whereas death reminders also lead to harsher sanctions for a prostitute after a conservatism prime, regardless of differences in political orientations. Similarly, we believe that different procedures could have introduced a self-focus salience vs. a non-self focus salience. In the previously mentioned experiment in which modesty was primed among Chinese participants (Du & Jonas, 2014), it was suggested that the modesty norm and mortality reminders lead to conflicting tendencies regarding self-enhancement. Perhaps such a motive conflict has also been induced in our participants.

If this interpretation of the findings is true, what alternative values or norms could have been primed in the non-self focused situations, in collectivist participants? We have already discussed the possibility that our participants responded to mortality reminders with espousing a more humble and self-critical stance towards themselves and their personal preferences (Kesebir, 2014). This is, naturally, impossible to ascertain without further studies, but this interpretation could be supported having in mind the context. The value of humility has been demonstrated as more characteristic of collectivist cultures (Sedikides, 2015; Shi et al., 2015). According to the Shwartz' (2007) mapping of cultures on various value dimensions, the positioning of the local context largely coincides with the positioning of the attribute of humility.

We are left with the issue of why the mortality reminders increased salience of this norm, without a particular priming induction. The issue of whether mortality reminders lead to increased humility could be settled with a further study that would also introduce

a humility prime prior to the death thought induction. Also, it would be valuable to investigate in a more targeted manner the extent to which our students embrace this norm and perceive it as important. This could imply that alternative motives can be chronically accessible, particularly for some of the participants.

Applicability of TMT in the local context

The present study adds to the existing TMT literature by widening the scope of different cultural contexts of its application. We have already argued that the region of Western Balkans and Serbia in particular, afford an interesting case-study in terror management processes, owing to the specific cultural position and the recent turbulent history. What have we learned from the current study about the cross-cultural applicability of TMT?

In line with previous studies from predominantly collectivist settings (Du et al., 2013; Du & Jonas, 2014; Heine et al., 2002; Kashima et al., 2004), we have found more convincing support for collectivist self-enhancement strategies than individual. Identification and enhancement of an important in-group, namely, the ethnic group, appears to be an important element of the cultural anxiety buffer. Further, we demonstrated that mortality reminders lowered the overall self-enhancement tendencies, in particular in participants low in individualism. Conversely, participants who embraced individualism showed opposite tendencies and enhanced their individual self-image when reminded of death. We believe this is an important extension to the findings from Kashima and associates' (2004) study, in demonstrating not only the cultural-level moderators, but also the personal level variations within the same culture.

The exact nature of the collectivist self-enhancement also deserves additional consideration. Namely, we have already emphasized that a specificity of the local context is the conceptualization of the ethnic identification as a primordial tie, inherited and deeply culturally, even biologically rooted (Milošević Đorđević, 2007; Turjačanin & Majstorović, 2013). Furthermore, the ethnic identity is highly overlapped with the religious one (Branković et al., 2015; Vasić, 2013), thus offering an overall identity structure that includes a complete worldview, with moral and transcendental foundations. This has important ramifications for the operation of the cultural anxiety buffer. We can describe this collectivist buffer as unconditional in a sense – the mere fact of being born into an ethnic group suffices to secure a meaningful position of the

individual within the group. Since access to this potential terror-management resource is not conditional upon some kind of achievement, displays of competence, or even a moral status (cf. Crocker, 2002), its anxiety-soothing potential is particularly high. It is worth noting that this understanding entails a slightly different relation between the two components of the cultural anxiety buffer compared with Western cultures. Investing in an individual positive self-image might become superfluous, since the protection offered by the ethnic identity is not conditional upon ensuring a positive self-image. We can speculate that it also might be undesirable, since individuation could also entail a risk of losing of the secure position within the group. A conflict between individuation and the tendency to merge with others have in earlier theorizing been recognized as the two basic and opposing defences from most basic anxieties (Yalom, 1980). Such a conflict would explain the finding that high collectivism participants do normally show self-enhancement, but death reminders promptly reverse these tendencies. Since collectivism reflects an embracing of the traditional groups, we believe that it is directly linked to this identity. The fact that our participants did not express a strong ethnic identity while still demonstrating the described pattern of reactions further support a very general role of the ethnic identification.

The current findings are in line with previous research on transitions of the value orientations in the local context (Golubović, 2003; Golubović et al., 2003; Kuzmanović et al., 1995; Lazić & Cvejić, 2007), in suggesting that both individualist and collectivist patterns of thinking and perception have been observed. In particular, the fact that participants who do not embrace collectivism demonstrate opposite reactions to death reminders could indicate a break with the dominant terror management systems and a search for alternative strategies. Individualist and individual self-esteem oriented responses do emerge as this alternative buffering system, perhaps due to alternative identifications (with the Western countries and values).

However, an even more interesting finding is the mentioned reversal of self-enhancement tendencies in high collectivism participants. This is suggestive of a personal-level discrepancy in values and norms. Interestingly, high collectivism participants also showed an inverse relation between collective and individual enhancement strategies: the more they used collective ones, the less they were inclined to the individual ones (and vice versa). In high individualists, these were positively

related, on the other hand – it would appear that from their point of view, the more enhancement, the better.

The cross-cultural literature on self-enhancement offers another interesting perspective on these findings. Namely, while some authors suggest that Eastern cultures are characterized by a lack of self-enhancement (Heine & Hammamura, 2007; Heine & Lehman, 1997; Heine, Lehman, Markus, & Kitayama, 1999), others suggest that these tendencies are merely expressed in other ways (Sedikides et al., 2015). In particular, humble expressions in a cultural context that values humility would essentially entail a self-image boost for the person (Sedikides et al., 2015; Sedikides, Gregg, & Hart, 2008). In conclusion, future studies should disentangle whether these inconsistencies in the effects of mortality reminders on individual enhancement strategies are a result of a lack of the basic effect or dependent on the operation of moderators.

Which processes mediate reactions to mortality reminders?

To understand more thoroughly the functioning of the proposed anxiety buffer, we investigated the cognitive and affective mediators, as well as a number of potential moderators of the reactions to death reminders. Terror management theory and its more recent refinements (Arndt et al., 2004; J. Hayes et al., 2010; Pyszczynski et al., 1999) propose that mortality reminders would not lead to affective reactions, but to a heightened accessibility of death cognition at an implicit level, which are hypothesised to induce the defensive reactions.

Taken together, the experiments suggest that death reminders produced affective reactions, which however did not mediate the effects of reminders on the defensive reactions. Generally, the pattern or results thus supports the basic propositions of the theory in this respect (Greenberg, 2013; Solomon et al., 2004).

On the other hand, the pattern of results regarding implicit and explicit cognitive mediators is less straightforward. The theory proposes that death reminders increase accessibility of death cognitions at an implicit (and not explicit) level, and that the defensive reactions are driven by this heightened accessibility. Let us summarize the evidence in favour and against the theoretical propositions. On the supportive side, we found an increased DTA as a result of experimental inductions. We also demonstrated

the operation of the proposed symbolic defenses, even in situations where participants previously reported conscious death cognitions.

Turning to the counterarguments, we failed to demonstrate the proposed mediation of the mortality salience effects by death-thought accessibility. Further, we found increased *explicit* death cognitions after mortality reminders, which were related to the defensive reactions in meaningful ways, contrary to prior research (Arndt et al., 2004; Greenberg, 2013; Rosenblatt et al., 1989).

How can this pattern of results be interpreted? First, given the previous body of work and the logic behind the model, it would be difficult to imagine that it is not the cognitive processes of some sort that mediate the mortality salience effects. We believe that we probably faced some methodological difficulty in measuring the implicit-level cognitive processes, as well as demonstrating the proposed mediation. There are several reasons for this. First is the measurement of death-thought accessibility – namely, our findings suggest that not all measures are equally reliable, and this particularly applies to the most commonly used word-fragment completion task. This measure could be susceptible to deliberative processes, that is, self-presentational concerns (J. Hayes et al., 2010) which endangers its capacity to gauge the implicit-level cognitive processes. On the other hand, a mediation is difficult to observe in this case, as suggested by inconsistent results of previous studies (Das, Bushman, Bezemer, Kerkhof, & Vermeulen, 2009; J. Hayes et al., 2010). The reason behind this is that the mere measurement of death-thought accessibility could affect the outcome variables, both in terms of priming death-though accessibility (J. Hayes et al., 2010) and possibly introducing an alternative self-image threat (as suggested by Experiment III).

Furthermore, our findings have clearly demonstrated that conscious-level cognitive processes could play a role in mortality salience effects (see also Lambert et al. 2014). Our findings do suggest three important points: a. mortality reminders increase conscious consideration of death, b. the conscious death cognitions can be systematically related to the defensive reactions, and c. there are individual variations in these processes and their relations with terror management reactions, as suggested by the differences in high/low collectivism participants. Further research is needed to clarify these processes, and these should be investigated within more complex models of moderated mediation, as suggested by our findings. Finally, the issue of which

cognitive processes mediate the reactions to death reminders could be related to the nature of these reactions. As suggested by TMT authors (Pyszczynski, 2004), but also other existential thinkers and psychologists (Freud, 1918), gaining insight into death anxiety and the need for psychological defence against it, could lead to less defensiveness and engagement in more constructive strategies. A particularly important implication of the present study is that some moderators could affect not only the reactions to death reminders, but the cognitive processes that are engaged. This is consistent with earlier studies demonstrating the role of personal need for structure for the level of defensiveness towards death reminders (Dechesne & Kruglanski, 2004; Landau et al., 2004). Our study also suggests that personal value orientations could affect these mediating processes. We could speculate that, depending on the value orientations, and possibly their respective terror-management capacities in the current socio-cultural context, people could be more or less defensive towards the topic of death, and consequently differ in their reactions. We will shortly discuss the constructive and defensive strategies of terror management.

What are the relevant moderators?

Looking at the findings as a whole, we can conclude that reactions to mortality reminders depend on socio-psychological determinants rather than more individually based ones. Value orientations affected these reactions, whereas two global and chronic individual traits, self-esteem and general anxiety, did not. This suggests two conclusions. First, functioning of the death anxiety buffer appears to be more related to the characteristics of the social context, than individual differences in personal characteristics. This finding is in accordance with the general proposition of the theory that the worldviews embraced within a socio-cultural context determine the possible trajectories of achieving a positive self-image (Greenberg et al., 1986; Pyszczynski et al., 2004). Several of the current findings speak in support of this: individualist and collectivist value orientation lead to different (even opposed) reactions to death reminders, and possibly even prompted distinct cognitive processes.

Second, within the socially constructed routes to anxiety alleviation, individuals appear to be equally susceptible to death reminders, irrespective of some general indicators of psychological wellbeing or mental health status. Despite the expectations that stable

individual differences would determine the magnitude, or even the quality of reactions, this was not supported by the present data. Interestingly, self-esteem and general anxiety were proved to be strongly related to the tendency of using personal self-enhancement strategies (Experiment III). These findings support a universal character of the reactions to death reminders that do not seem dependent on individual differences, even those that could be directly related to the coping potential (Nimeyer et al., 2004; Yalom, 1980). The findings support the basic premise of terror management theory about the universal relevance of death-anxiety alleviation (e.g. Pyszczynski et al., 1997; Solomon et al., 2004). They are also consistent with the idea that shields against death anxiety need to transcend the individual self, in order to offer effective protection (Castano et al., 2004). In other words, our inner psychological resources have to be entrenched within the larger entities in the socio-cultural context. This seems to apply particularly well to the present collectivist context.

In contrast to the previous studies (Baldwin & Wesley, 1996; Burke et al., 2010; Harmon-Jones et al, 1997; Schmeichel et al., 2009) neither high nor low levels of self-esteem affected the defensive reactions to death reminders. A smaller number of more recent studies have also reported that self-esteem did not affect reactions to death reminders (Herrera, & Sani, 2013; Taubman-Ben-Ari, Findler, & Mikulincer, 2002; Wakimoto, 2011). They suggest that the exact role of self-esteem might depend on the nature of defensive reactions investigated. However, in the current study, we would still expect these effects, since the reactions are clearly related to protection of a positive self-image, thus being matched with the moderator regarding contents.

Why have we not found these moderation effects? It should be noted that the general level of self-esteem among our participants was relatively high, i.e. we lacked a genuinely low self-esteem group that would allow a proper comparison. Further, we have not included measures of implicit self-esteem. Some recent research suggests that subtler measures of self-esteem could help reveal the precise nature of its moderating effects (Burke et al., 2010; Schmeichel et al., 2009). However, this finding is most readily interpretable in terms of cross-cultural differences. It is consistent with the more general weaker role of individual enhancement in terror management processes observed in the current context. In other words, the individual self-esteem might not be of general importance for terror management processes, whereas some other (relational

or collectivist) might. The findings demonstrating an enhanced positive perception of the in-group (Experiment 2) are consistent with this idea. However, the individual self-esteem appears to be important for some participants, e.g. those embracing more individualist worldviews (cf. Du et al., 2013). The interaction of value orientations and different types of self-esteem should be tested in future studies.

Implications of the present research

On the most general level, our findings reveal that some fundamental existential concerns can have an impact on everyday psychological functioning of young and healthy individuals. More specifically, mortality reminders can affect the way we perceive ourselves and how we shape our important social identities. These effects can be summarized under the general heading of the protection and enhancement of a positive self-image, as previously discussed, although for different individuals, these can take different forms. These findings have several important implications for a number of phenomena of interest for psychologists.

First, despite the fact that conscious consideration of death is not a pervasive element in the lives of young people, death appears to be an issue that requires some form of psychological defence. The need to invest in a specific worldview or a certain image of oneself entails some psychological consequences. Some authors have considered the costs of self-esteem striving in the context of the individual Western societies (Baumeister, Smart, & Boden, 1996; Crocker, 2002; Crocker & Knight, 2005; Crocker & Park, 2004; Leary, 2004). For instance, Jennifer Crocker (2002) sees the conditionality of self-esteem as an important determinant of its negative impacts in everyday life – a positive self-image is conditional upon displays of competence, achievement, and social approval. The quest for this positive self-image uptakes much of the individual's time and effort and sometimes precludes more constructive strivings, as the ability to capitalize on one's experiences, learn and develop, as well as the feeling of autonomy.

The previous discussion suggested that, in the present cultural context, a more prevalent conditionality of self-esteem is a group-based conditionality, i.e. a striving for a positive

collective self-image, most closely related to ethnic identity. Given the recent history of conflict, this perspective is important for understanding the inter-ethnic relations in the country and the region. Previous research has shown that a common effect of death reminders is not just in-group identification but also derogation of other groups (Dechesne et al., 2002; Greenberg et al., 1990; Kökdemir & Yeniceri, 2010; Pyszczynski et al., 2006). Further, public discourse that includes victimization of the own group could in fact sustain and exacerbate inter-ethnic divisions (Hirschberger et al., 2010; Vollhardt, 2012). When one group perceives an imminent threat from the other, the divisions are easily brought to mind and animosities strengthened, which precludes any attempts at reconciliation and contact across inter-ethnic borders (Hirschberger et al., 2010). These implications are important and should be taken into account in both further research and the applied work related to improvement of inter-ethnic relations. The fact that there currently is no visible or violent conflict does not preclude more subtle forms of non-constructive tendencies that, for instance, entail a reluctance to consider the conflictual past and to re-consider the distance towards other groups. In the following, we will sketch some of the possible future venues of research.

In addition, some of the considerations related to the individual self-esteem striving in the context of burgeoning individualism and consumerism, appear to be relevant for at least some of our participants as well. This strikes as an emerging novel terror management strategy, which could also entail some repercussions. Some authors have termed the Western societies' preoccupation with self-esteem a form of social sickness (Deci & Ryan, 2000). What if this "sickness" is now spreading among the people in the local context? The crucially important caveat in the context of present considerations is that the anxiety and stress caused by self-esteem striving, as well as emotional reactions to failure to achieve a favourable self-image could be related to deterioration of both mental and physical health (Crocker, 2002; Crocker & Knight, 2005). Some schools of psychotherapy focus on these consequences of self-esteem striving. For instance, the Rational-emotive behavior therapy sees negative self-views as the root of one of the two basic types of psychological dysfunction (Ellis, 2003; Ellis & Dryden, 1997; London, 1997; Mills, 2003). In fact, one of the crucial interventions within this therapeutic modality is aimed at disputing the conditionality of self-esteem and fostering a self-accepting attitude and abstaining from global self-evaluations. However, the present

findings suggest that self-esteem striving is founded in deep-seated existential motives, which partly account for its importance in individuals' lives. Thus, the need for self-esteem is cast in a novel light: if we assume the deeply embedded need for a positive self image that serves as a buffer against death anxiety, is it really possible to abandon this striving? The reluctance to forsake the irrational self-esteem striving and clinging to behaviors that can even undermine one's health and well-being, are given a convincing explanation within the TMT framework.

These considerations present some further dilemmas for both people experiencing self-esteem related dysfunctions, as well as for counselors and educators (Pyszczynski, & Cox, 2004). On the one hand, self-esteem striving can cause stress, anxiety and prejudice towards others, and it would be best to forsake it for other, more constructive strivings, directed along the lines of modesty and compassion towards others. On the other hand, if a positive self-image, whether individual or collective, serves some very basic psychological functions, giving up on the quest for self-esteem would be an extremely difficult endeavour. Abandoning self-esteem would lead to an upsurge of anxiety that would be difficult to control. This can fundamentally be understood as the human dilemma between security and growth (Pyszczynski, & Cox, 2004).

Is it possible to find a way to provide security that is truly self-transcending and based in respect for other people? These considerations take us back to the issue that preocuppied existential thinkers and psychotherapists, the one of the authenticity of being (e.g. Camus, 1987; Frankl, 2000; Sartre, 2009). Psychologists have considered several solutions to this puzzle, that can be summed up as aiming towards a self-determined (Deci & Ryan, 2000; Ryan & Deci, 2004) or a self-transcending (Schwartz, 1990) stance, as more constructive ways of providing a sense of psychological equanimity. From a psychological perspective, distinction can be made between a contingent, conditional self-eteem, and a "true" or authentic self-esteem (Crocker, 2002; Deci & Ryan, 2000; Schimel, Arndt, Pyszczynski, & Greenberg, 2001; Pyszczynski, & Cox, 2004). Some research has shown that a validation of more intrinsic aspects of self-esteem, as opposed to competence-based aspects, lead to less defensive reactions to threats (Arndt, Schimel, Greenberg, & Pyszczynski, 2002; Schimel et al., 2001). This means that gaining acceptance for whom one truly considers oneself to be, affords a more open and secure image of oneself, less succeptible to psychological threats.

However, we cannot help but wonder how to define a *true* or *authentic* self? This is commonly achieved in contrasting it to a self that is based in a striving to meet some external, culturally and socially defined standards (Crocker, 2002; Schimel et al., 2001). Still, we are still facing the difficulty that virtually any basis for achieving a sense of self-worth are socially constructed. It is problematic whether we can speak about an independent and self-determined individual, if the choice of the strivings to pursue are in any way determined by factors stemming from the very same social context.

At the very least, the authors with conflicting views on the possibility of abandoning self-esteem in favour of more constructive tendencies, concur that an insight into the contingencies of self-worth and obtaining a more active control over them are important first steps in developing a more authentic mode of being (Crocker, 2002; Pyszczynski, & Cox, 2004). While the pursuit for social approval and acceptance is something that is "introjected" into the self (Deci & Ryan, 2000), the authentic self comprises those strivings that are trully integrated into an individual sense of self. Further research into the impacts of differentially based self-esteem striving on psychological well-being is clearly warranted. One of the interesting issues is investigating the potentially beneficial insights from a more open conscious consideration of the basic fears and anxieties, including the fear of death. As suggested by Freud (1918), Becker (1973) and others, we might need to accept the life's final prospect, in order to truly live authentic lives.

Limitations of the current study and directions for future research

The current study has a number of limitations. Firstly, we tested the basic terror management strategies in this study. Since the findings suggest that both individual differences and situational primes can affect the choice of these strategies future studies need to employ more complex designs, to be able to fully account for these differences. Second, the samples in the reported experiments might not be sufficiently large for testing the moderated mediation models with a larger number of variables. As suggested by other researchers (J. Hayes et al., 2010), in order to delineate the precise cognitive processes included in terror management defences, a series of consecutive studies might even be the more adequate solution. Finally, the participants in our experiments were recruited from a specific population, which could have affected the findings. Although we have been able to suggest in which ways the findings have been affected, it would be

213

interesting to further test how they operate in different social groups, for instance in more extreme groups in terms of ethnic and religious identification.

The present findings offer several venues for future research. Firstly, the present findings support the idea that an investigation of the impact of existential concerns and motives on everyday psychological functioning can provide interesting insights. The research on fear of death should be complemented by an investigation of other existential motives, as freedom, the need for meaning and connectedness (Deci & Ryan, 2000; Frankl, 2000). The specifics of the local context should, in our opinion, be given greater weight, since many local determinants could be operating. One possible venue could further compare the collectively or individually based self-esteem strivings and their impacts on psychological well-being.

Our studies contribute to the rich tradition of research into social identities and inter-ethnic relations in the region (e.g. Ajduković & Biruški, 2008; Blagojević, 2013; Branković et al., 2015; Milošević-Đorđević, 2007; Petrović, 2003; Popadić, 2004; Popadić & Biro, 2002; Puhalo, 2009; Puhalo, Petrović, & Perišić, 2010; Turjačanin & Majstorović, 2013). They add an important perspective to this research, demonstrating some fundamental motivational basis of social identifications. We believe that a particularly important venue for further study should be aimed at how mortality reminders affect social identifications and inter-groups perceptions and feelings, so we will look at it at more detail.

In addition to demonstrating the effects of death reminders on the perception of the own group, future studies should more directly address how they affect perception of other groups. For instance, it would be interesting to explore which of the neighbouring ethnic groups would be affected – whether those that are traditionally considered adversarial (e.g. Croats or Bosniaks) (Turjačanin & Majstorović, 2013; Kalaba, 2013; Puhalo, 2009). It would also be important to elucidate the impact of the current political and societal tensions for terror management processes, or, put differently, how they can interact with fundamental concerns in shaping inter-ethnic relations.

Another possible venue of research is the study of how perceptions and memories of the past conflicts affect the current inter-group perceptions and feelings. The terror management perspective offers a valuable framework for understanding these links, through an investigation of the underlying fundamental motives and concerns (Kesebir,

Pyszczynski, Chatard, & Hirschberger, 2013). This programme of research could yield important implications for the processes of reconciliation that should include a reconstruction of the collective memory (Bar-Tal, 2000; Paez & Liu, 2011).

How can the understanding of terror management roles of social identifications could be used to foster improvement of inter-group relations? Reconsidering the dominant social narratives as frameworks that guide understanding of inter-group relations could indicate how to maintain their potential for terror management without fostering animosity to others. More concretely, it has been shown that priming more inclusive forms of social identification, as the common humanity, and casting the conflicts in these terms, can lead to more constructive reactions to mortality reminders (Hirschberger et al., 2010). As suggested by the current findings, an awareness of collectivist norms could be of benefit to more constructive reactions to death reminders. However, there is an important caveat regarding its potential influence. In the current context, collectivistic orientation has been shown to have strong ties with ethnic identity (Pešić, 2006). Therefore, appealing to collectivist values might also entail the risk of undermining the efforts to overcome the inter-group divides. Perhaps raising awareness of the cross-cutting memberships in different groups and the fact that people can share some, and not all, of the important characteristics with others, could bear potential for reducing the terror-management induced defensiveness (cf. Branković et al., 2015). We believe this could be an issue worthy of further investigation.

Lastly, research on factors affecting the probability that people would espouse more constructive forms of terror management, oriented towards personal growth and more openness towards others, seems to be a desirable direction of future research efforts. As terror management theory suggests, we all face the same existential prospects and are plagued by the same fundamental worries. The matter of how we cope with them can have important impacts on both personal well-being and social attitudes. In the current cultural context, the dilemma we appear to be facing is how to overcome the recent experience of conflict and to capitalize on the positive sides of collectivist values and social identities, to the benefit of both individuals and the whole society.

Concluding Remarks

"Si vis vitam, para mortem.
If you wish life, prepare for death."
(Sigmund Freud)

Existentialist thinkers have reflected on *the human condition* and how it shapes or bounds human lives. One of the fundamental aspects of the human condition is mortality, the fact that human lives are inexorably heading towards a certain ending. However, it appears that people seldom dwell on these limitations posed by their own finitude. The conspicuous absence of such thoughts and concerns in the everyday led some philosophers and psychologists to the conclusion that we are living in a death-denying civilization (e.g. Becker, 1973; Freud, 1918). Prior psychological studies have revealed that fear of death is nevertheless present, although more prominent at sub-conscious levels of the human psyche (Yalom, 1980). What is more, this fear is not only to be found in persons suffering from psychological problems or approaching death. In addition to its being more generally observable (Nimeyer et al., 2004), some studies even suggest that fear of death reaches its highest peaks in the 20s, in both men and women (Russac, Gatliff, Reece, & Spottswood, 2007). This fear does not prevail in the conscious everyday lives of the youth, to be sure, but it could still exert some tangible consequences for their psychological functioning.

The current study looked into the psychological reactions of young adults to reminders of their own mortality. Based in the framework offered by terror management theory (Greenberg, Pyszczynski, & Solomon, 1986; Pyszczynski, Greenberg, & Solomon, 1997; Solomon, Greenberg, & Pyszczynski, 2004; Pyszczynski, Solomon, & Greenberg, 2015), we sought to investigate whether mortality reminders would instigate defensive reactions aimed at preservation and strengthening of a positive self-image. A positive image of oneself, based in a culturally valued worldview, is proposed to function as a buffer against the fear of death. To feel symbolically protected from death, people need to feel that they are valued parts of a meaningful universe. We explored whether

participants will tend to self-enhance the individual and / or collective self-image, after being reminded of death.

Subtle reminders of mortality proved to give rise to systematic and observable effects in our young participants. Generally, the reactions can be described as efforts aimed at preserving and strengthening a positive image of oneself, either as an individual, or as part of a collective. In accordance with the strong collectivist norms of the local context, strengthening a positive image of the collective, as well as personal ties with this collective, appear to be an important means of managing the terror of death. It appears that seeing oneself a part of the ethnic group, a group that is characterized by clear boundaries, criteria of inclusion, as well as a temporal dimension transcending the here and now, works as the primary vehicle of transcending the mortal personal self. However, variation have also been observed: depending on the wider systems of value and norms a person is attached to, the strategies for soothing concerns about death can also be channeled more towards strengthening the personal and individual rather than the collective.

How strongly do our findings support Terror management theory and its fundamental tenets? We can conclude that the present findings offered a mixed support for the theory, since they both validated, qualified and challenged some of the tenets. Most generally, the findings are consistent with the idea that reminders of mortality lead to reactions that are interpretable in terms of strengthening the positive image of oneself. Our findings offer stronger support for the terror management role of the collective than individual self-enhancement strategies. These reactions have been shown to be specifically affected by thoughts about death, and not other sources of anxiety or a heightened negative affect.

The present findings also suggest that the operation of the proposed systems protecting from the fear of death is dependent both upon contextual and cultural moderators. More specifically, we revealed the moderating role of personal value orientations, i.e. individualism and collectivism, in channeling reactions to death reminders. Future studies should investigate other important value orientations that can be of more importance in other cultural settings.

We can conclude that the chosen theoretical model afforded a valuable perspective for understanding self-esteem strivings in our participants, in particular the motivational

underpinnings of inter-ethnic relations. Moreover, the experimental investigation of the most intimate psychological processes can provide important insights that go beyond those that could be revealed by solely relying on introspection. The theoretical model could be further improved by specification of the potential cultural, personal and situational moderators affecting the choice and operation of terror management strategies, which would allow deriving more accurate predictions from it.

We have considered the implications of the findings for both individual psychological well-being and the quality of inter-group relations. Future studies could explore these implications at greater detail, to establish the circumstances in which the proposed terror-management processes operate and become particularly strong. The insights could greatly benefit the understanding of the fundamental motivations underlying inter-group relations and these are not only of theoretical importance, as they can have tangible real-life impacts. Death-fearing people who tend to cling to their important groups can become highly uncritical towards them, as well as (possibly) derogating towards others. The local context, where the wounds left from recent conflicts are still unhealed, and further aggravated by insecurities of the present-day economic transition, makes an almost ideal ground for the flourishing of conservative and rigid defenses. If we unravel the mechanisms leading to deepening divisions and conflict, this could enable us to direct them along more constructive paths. More generally speaking, revealing the underlying motives and concerns people face or are affected by in their everyday psychological lives, could bring about more insight into human thoughts and behaviors. This, in turn, could help widen the degrees of freedom of the human in her existential situation, i.e. the capacity to make choices and decisions, both to the benefit of self and to being empathetic towards others.

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Appendices

I. Appendix I: Experimental inductions – materials[25]

A. Textual inductions

1. Tekst o smrti

Na početku ćemo Vas zamoliti da navedete nekoliko podatka o sebi. Ispitivanje je anonimno i rezultati će biti korišćeni isključivo u naučne svrhe.

Pol (upišite): _____

Studijska grupa: _____

Godine starosti: _____

Prvi zadatak ispituje reakcije na različite vrste tekstova. Ispod se nalazi jedan kratak test koji se odnosi na neka razmišljanja ili životna iskustva. Molimo Vas da ga pažljivo pročitate i da podvučete najznačajnije ideje koje su u njemu iznete.

****

Ponekad razmišljam o sopstvenoj smrti i tome šta znači umreti. Svako od nas može osetiti nagoveštaj smrti svake noći kada utone u san ili kada je bez svesti pod anestezijom.

Kako god gledali na nju, smrt je užasavajuća činjenica. Ona predstavlja završetak lične egzistencije, trajni gubitak svakog osećaja, misli i akcije, propadanje tela, nepovratan prekid veza sa onim što čovek poseduje, poznanicima, prijateljima, svima koje volimo. Smrt je takođe najsigurniji od svih ishoda. Bilo koji drugi loši događaji od kojih strahujemo – povrede, odbacivanja, poniženja, i slično – mogu se izbeći ili prevazići, ali kada je u pitanju smrt, to nije moguće.

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[25] In all appendices, original materials and instruments are given in Serbian, followed by translations to English.

Prihvatiti sopstvenu smrt znači suočiti se sa nizom teško pojmljivih istina - da si konačan, da tvoj život zaista ima kraj, da će svet ipak opstati nakon tebe, da si jedan od mnogih – ni više ni manje od toga, da svemir ne priznaje tvoju posebnost, da je tvoj čitav život u stvari pozajmljeno vreme i, najzad, da su neke nepromenljive dimenzije egzistencije van tvoje kontrole.

Kada razmišljam o tome, čini mi se da najjača osećanja potiču od shvatanja da ću umreti baš JA, a ne neko drugi. To je najteže shvatiti. Pretpostavljam da sam o smrti uvek razmišljao indirektno, kao o nečemu što bi moglo da se desi, a ne o nečemu što će se sigurno desiti.

<div align="center">**************</div>

Molimo Vas da sada svojim rečima ukratko sumirate šta je osnovna tema ovog teksta:

_____

Ocenite tekst na sledećim dimenzijama (ukoliko Vašoj proceni odgovara pridev sa leve strane, zaokružite broj 1, a ako joj odgovara pridev sa desne strane, zaokružite broj 7):

umetnički   1----2----3----4----5----6----7   neumetnički

lepo uobličen   1----2----3----4----5----6----7   slabo uobličen

upečatljiv   1----2----3----4----5----6----7   neupečatljiv

razumljiv   1----2----3----4----5----6----7   nerazumljiv

zanimljiv   1----2----3----4----5----6----7   dosadan

prijatan   1----2----3----4----5----6----7   neprijatan

Molimo Vas da navedete fomulaciju iz teksta koja Vam deluje posebno upečatljivo, koju prepoznajete kao izraz razmišljanja bliskih onima koja ste nekada sami imali:

_____

_____

_____

_____

_____

_____

_____

*

1. Mortality salience induction

First we will ask you to provide some information about yourself. The study is anonymous and the results will be used solely for scientific purposes.

Gender : _____

Study programme: _____

Age (in years): _____

The first task explores reactions to different types of texts. Below, a short textual passage will be presented, depicting some thoughts or life experiences. Please, read through the text carefully and underline the most important ideas considered in it.

****

Sometimes I think about my own death and what it means to die. Each and every one of us can get a glimpse of death each night when we are falling asleep or when being unconscious under anaesthetic.

However you look at it, death is a terrifying prospect. It represents the end of the personal existence, a permanent loss of any feeling, thought and action, bodily decay, an irreversible severing of bonds with whatever one possesses, with one's acquaintances, friends, the people we love. At the same time, death is the most certain of the outcomes.

241

Any other negative events we might fear– injuries, rejections, humiliations or the like – might be avoided or overcome, but when it comes to death, this is not possible.

To accept one's own death means to face a series of facts that are difficult to comprehend – that you are finite, that your life actually has an ending, that the world will continue to exist once you are gone, that you are one of many – not more or less, that the universe does not recognize your uniqueness, that your entire life is in fact a time borrowed and, finally, that some unchangeable dimensions of existence are outside of your control.

When I think about it, it seems that the strongest feelings stem from the realization that it is ME who is going to die, and not somebody else. That is the part most difficult to grasp. I assume that I have always thought about death indirectly, as of something that could happen and not something that is bound to happen.

<p style="text-align:center">**************</p>

Please summarize briefly and in your own words the topic of this text:

_____

Please rate the text on the following dimensions (if your rating is closer to the adjective on the left-hand side, circle number 1, and if it is closer to the adjective on the right-hand side, circle number 7):

artistic	1----2----3----4----5----6----7	non-artistic
well written	1----2----3----4----5----6----7	poorly written
striking	1----2----3----4----5----6----7	unimpressive
comprehensible	1----2----3----4----5----6----7	incomprehensible
interesting	1----2----3----4----5----6----7	dull
pleasant	1----2----3----4----5----6----7	unpleasant

Please rewrite a formulation from the text that you found most striking and most resembling your personal experience:

_____

_____

_____

_____

_____

_____

2. Tekst o muzici (kontrolna indukcija)

Na početku ćemo Vas zamoliti da navedete nekoliko podatka o sebi. Ispitivanje je anonimno i rezultati će biti korišćeni isključivo u naučne svrhe.

Pol (upišite): _____

Studijska grupa: _____

Godine starosti: _____

Prvi zadatak ispituje reakcije na različite vrste tekstova. Ispod se nalazi jedan kratak test koji se odnosi na neka razmišljanja ili životna iskustva. Molimo Vas da ga pažljivo pročitate i da podvučete najznačajnije ideje koje su u njemu iznete.

<center>**************</center>

Ponekad razmišljam o muzici i o tome šta zapravo znači slušati muziku. Nismo uvek ni svesni da svako od nas može osetiti nagoveštaj izuzetnih iskustava skoro svakog dana, kada uhvati neku melodiju u prolazu.

Iako na prvi pogled deluje sasvim svakodnevno, slušanje muzike je specifično iskustvo. Muzika otvara svest ka različitim opažajima, mislima i emocijama u isto vreme. Svaki kontakt sa muzikom pobuđuje emocije. Kada slušam muziku, najčešće me podilaze žmarci prijatnosti, posebno pri nekom upečatljivom pasažu. Ali iskustvo se ne svodi samo na to – muzika te može rastužiti, ganuti, razveseliti, razljutiti. U nekim

slučajevima, uz muziku se čak može dosegnuti izuzetno emocionalno iskustvo, koje nije svodivo ni na prijatnost ni na osnovne emocije. To mi je jasno kada se u potpunosti posvetim slušanju - tada osećam da se praktično izmeštam iz neposredne realnosti, to jest prestajem da budem svestan, a doživljaj je praćen specifičnim uzbuđenjem. Doživljaj strahopoštovanja uporediv je sa onim što osetite u susretu sa veličanstvenim predelima prirode ili najsavršenijim ljudskim materijalnim tvorevinama.

Kada razmišljam o tome, čini mi se da najjača osećanja potiču od mogućnosti koje muzika nagoveštava dok je slušam. Čini mi se da bar na trenutak nestaje čvrsti okvir realnosti, da se ukidaju prostorne i vremenske granice otvara svet koji do tada nije bio vidljiv, svet neslućenih mogućnosti i Uzvišenog.

<center>***************</center>

Molimo Vas da sada svojim rečima ukratko sumirate šta je osnovna tema ovog teksta:

_____

Ocenite tekst na sledećim dimenzijama (ukoliko Vašoj proceni odgovara pridev sa leve strane, zaokružite broj 1, a ako joj odgovara pridev sa desne strane, zaokružite broj 7):

umetnički   1----2----3----4----5----6----7   neumetnički

lepo uobličen 1----2----3----4----5----6----7   slabo uobličen

upečatljiv   1----2----3----4----5----6----7   neupečatljiv

razumljiv   1----2----3----4----5----6----7   nerazumljiv

zanimljiv   1----2----3----4----5----6----7   dosadan

prijatan   1----2----3----4----5----6----7   neprijatan

Molimo Vas da navedete fomulaciju iz teksta koja Vam deluje posebno upečatljivo, koju prepoznajete kao izraz razmišljanja bliskih onima koja ste nekada sami imali:

_____

_____

_____

_____

_____

_____

_____

_____

<div align="center">*</div>

2. Text about music (control induction)

The first task explores reactions to different types of texts. Below, a short textual passage will be presented, depicting some thoughts or life experiences. Please, read through the text carefully and underline the most important ideas considered in it.

<div align="center">**************</div>

Sometimes I think about music and what it actually means to listen to music. We are not always conscious that each of us can get a glimpse into extraordinary experiences every day, when we hear a melody in passing.

Although it might seem quite unremarkable, listening to music is quite a unique experience. Music opens up the consciousness to different perceptions, thoughts and emotions at the same time. Each contact with music evokes emotions. When I listen to music, I often get goose bumps, particularly when I hear a striking passage. But there is even more to the experience – music can make you sad, moved, happy or angry.

In certain cases, through music one can reach extraordinary emotional experience that cannot be reduced to pleasantness or basic emotions. I feel that when I am completely soaked in listening – I feel that I am being removed from the immediate reality, that I

245

am not longer aware of it, which evokes a specific arousal. This feeling of awe is similar to what you feel encountering magnificent natural landscapes or the most brilliant woks of man.

When I think about it, it seems to me that the strongest feelings stem from the emerging potentialities. It seems that the firm frames of reality dissolve for a moment, that spatial and temporal limitations disappear, and that a world emerges that was previously invisible, a world of unimagined possibilities and the sublime.

<div align="center">**************</div>

Please summarize briefly and in your own words the topic of this text:

_____

Please rate the text on the following dimensions (if your rating is closer to the adjective on the left-hand side, circle number 1, and if it is closer to the adjective on the right-hand side, circle number 7):

artistic	1----2----3----4----5----6----7	non-artistic
well written	1----2----3----4----5----6----7	poorly written
striking	1----2----3----4----5----6----7	unimpressive
comprehensible	1----2----3----4----5----6----7	incomprehensible
interesting	1----2----3----4----5----6----7	dull
pleasant	1----2----3----4----5----6----7	unpleasant

Please rewrite a formulation from the text that you found most striking and most resembling your personal experience:

_____
_____
_____
_____
_____
_____

B. Experimental induction scales

Misli o smrti

Prva skala je deo nove tehnike za procenu ličnosti. Pokazalo se da spontane misli i osećanja u vezi sa nekim aspektima života mogu da pruže značajan uvid u osobine ličnosti. Stoga Vas molimo da na naredna pitanja odgovarate iskreno i bez previše razmišljanja, na osnovu prvog, spontanog osećaja.

Na sledećoj listi navedene su u obliku tvrdnji neke misli koje ponekad ljudima mogu pasti na pamet. Molimo Vas da pažljivo pročitate svaku tvrdnju i ocenite koliko Vas lično navedene misli uznemiravaju. Koristite sledeću skalu:

1	2	3	4	5
uopšte me ne uznemirava	pomalo me uznemirava	donekle me uznemirava	dosta me uznemirava	veoma me uznemirava

Život je jako kratak.	1	2	3	4	5
Jednog dana ću jednostavno prestati da postojim.	1	2	3	4	5
Propustiću mnoge stvari, kada me više ne bude bilo.	1	2	3	4	5
Možda ću umreti mlad/a.	1	2	3	4	5
Doći će trenutak kada više neću misliti ili osećati.	1	2	3	4	5
Jednog dana ću nestati, a svet će nastaviti da postoji.	1	2	3	4	5
Neću biti tu da gledam kako moja deca i unuci žive i šta rade.	1	2	3	4	5
Čovek se u jednom trenutku mora predati smrti.	1	2	3	4	5
Ne znam da li ću uspeti hrabro da podnesem svest o umiranju.	1	2	3	4	5
Umreti znači prestati da postojiš kao osoba.	1	2	3	4	5
Čovek se suočava sa smrću potpuno sam.	1	2	3	4	5
U jednom trenutku nestaje sve ono što sam ja – moje misli, osećanja, snovi.	1	2	3	4	5
Smrt je proces koji nema povratka.	1	2	3	4	5

Misli o neizvesnosti

1	2	3	4	5			
uopšte me ne uznemirava	pomalo me uznemirava	donekle me uznemirava	dosta me uznemirava	veoma me uznemirava			

Već sutradan moj život može u potpunosti da se izmeni.	1	2	3	4	5
Većina važnih događaja u životu zapravo je posledica slučajnosti.	1	2	3	4	5
Možda ću pogrešiti u donošenju važnih životnih odluka.	1	2	3	4	5
Na mnoge stvari u životu jednostavno ne možemo da utičemo.	1	2	3	4	5
Ne postoje garancije da ću živeti srećno.	1	2	3	4	5
Ne postoje garancije da će ljudi koje volim živeti srećno.	1	2	3	4	5
Život je jako neizvestan.	1	2	3	4	5
Svakog dana može se desiti nešto potpuno neočekivano.	1	2	3	4	5
Većina situacija u životu može da se završi drugačije nego što sam planirao/la.	1	2	3	4	5
Nikad ne znam kako će me život iznenaditi.	1	2	3	4	5
Osećaj izvesnosti u životu je samo iluzija.	1	2	3	4	5
Nijedan ishod u životu nije potpuno u mojim rukama.	1	2	3	4	5
Za mnoge probleme u životu ne postoje sigurna rešenja.	1	2	3	4	5

Misli o ispitima

1	2	3	4	5			
uopšte me ne uznemirava	pomalo me uznemirava	donekle me uznemirava	dosta me uznemirava	veoma me uznemirava			

Moram da položim još dobar broj ispita do kraja studija.	1	2	3	4	5
Svaki ispit je novi test za moju inteligenciju.	1	2	3	4	5
Ako ne polažem ispite prema planu, produžiću studiranje.	1	2	3	4	5
Na ispitu se može desiti da zaboravim stvari koje sam naučio/la.	1	2	3	4	5

Sigurno ću razmišljati o ispitu danima.	1 2 3 4 5
Shvatiću da su drugi pametniji od mene.	1 2 3 4 5
Profesori mogu pomisliti da sam glup/a.	1 2 3 4 5
Drugi će primetiti ako počnem da zamuckujem.	1 2 3 4 5
Možda neki ispit jednostavno neću moći da položim.	1 2 3 4 5
Ukoliko ne budem imao/la dobre ocene, neću se baviti onim što želim.	1 2 3 4 5
Pred svaki ispit osećaću se loše bar nekoliko dana.	1 2 3 4 5
Trema može negativno da se odrazi na ocenu na ispitu.	1 2 3 4 5
Osramotiću se pred kolegama svojim neznanjem.	1 2 3 4 5

Kontrolna indukcija: iskustvo slušanja muzike

1	2	3	4	5			
uopšte nije karakteristično za mene	pomalo karakteristično za mene	donekle karakteristično za mene	dosta karakteristično za mene	veoma karakteristično za mene			
Muzika ima značajnu ulogu u mom životu.				1	2	3	4 5
Muzika čini svakodnevni život podnošljivijim.				1	2	3	4 5
Slušanje muzike za mene je posebno iskustvo, ne samo razbibriga.				1	2	3	4 5
Svaki kontakt sa muzikom mi probudi emocije.				1	2	3	4 5
Kada slušam muziku, često me podilaze žmarci prijatnosti.				1	2	3	4 5
Uz muziku se može dosegnuti izuzetno emocionalno iskustvo, ne samo prijatnost.				1	2	3	4 5
Muzika mi dozvoljava da se izmestim iz neposredne realnosti.				1	2	3	4 5
Muzika je za mene samo pratilac svakodnevnih aktivnosti.				1	2	3	4 5
Muzika otvara svest ka različitim opažajima, mislima i emocijama u isto vreme.				1	2	3	4 5
Slušanje muzike kod mene nije praćeno posebnim emocijama.				1	2	3	4 5
Muzika otvara novi nivo postojanja.				1	2	3	4 5
Muzika izaziva strahopoštovanje, poput veličanstvenih prirodnih predela.				1	2	3	4 5
Slušanje muzike može biti blagotvorno u suočavanju sa stresom.				1	2	3	4 5

Mortality salience

The first scale is a part of a new personality assessment technique. It has been shown that spontaneous thoughts and feelings about some aspects of life can provide significant insight into personality traits. Therefore we would like to ask you to answer to the following questions sincerely and without much thought, based on your first, spontaneous feeling.

In the following we listed some thoughts that can occur to people. Please read each of the statements and rate the extent to which the thoughts described in it concern you personally. Use the following scale:

1	2	3	4	5				
does not concern me at all	concerns me slightly	concerns me somewhat	concerns me fairly	concerns me a lot				
Life is very short.				1	2	3	4	5
One day I will simply cease to exist.				1	2	3	4	5
I will miss out on many things, once I am gone.				1	2	3	4	5
Perhaps I will die young.				1	2	3	4	5
There will come a moment when all my thoughts and feelings will be gone.				1	2	3	4	5
One day I will disappear, and the world will continue to exist.				1	2	3	4	5
I will not be able to see how my children and grandchildren live and what they do.				1	2	3	4	5
At one point, one has to give in to death.				1	2	3	4	5
I do not know whether I will be able to face death with dignity.				1	2	3	4	5
To die means ceasing to exist as a person.				1	2	3	4	5
One faces death all by himself.				1	2	3	4	5
In an instant everything that defines me disappears – my thoughts, feelings, dreams.				1	2	3	4	5
Death is a process without return.				1	2	3	4	5

Uncertainty salience

1	2	3	4	5
does not concern me at all	concerns me slightly	concerns me somewhat	concerns me fairly	concerns me a lot

Your life can turn upside down within a day.	1	2	3	4	5
Most important events in one's life are actually a result of chance.	1	2	3	4	5
I might go wrong in making important life decisions.	1	2	3	4	5
We simply cannot control many things in our lives.	1	2	3	4	5
There are no guarantees that I will live a happy life.	1	2	3	4	5
There are no guarantees that people I love will live happily.	1	2	3	4	5
Life is extremely uncertain.	1	2	3	4	5
Something unexpected can happen every day.	1	2	3	4	5
Most situations in life can end up differently than planned.	1	2	3	4	5
One never knows when life will surprise him.	1	2	3	4	5
The sense of certainty in life is just an illusion.	1	2	3	4	5
None of the outcomes in my life is completely in my own hands.	1	2	3	4	5
There are no foolproof solutions for many problems in life.	1	2	3	4	5

Exam anxiety salience

1	2	3	4	5
does not concern me at all	concerns me slightly	concerns me somewhat	concerns me fairly	concerns me a lot

I have to pass quite a few exams until I finish my studies.	1	2	3	4	5
Each exam is a new test for my intelligence.	1	2	3	4	5
If I do not pass my exams according to plans, I will prolong my studies.	1	2	3	4	5
During the exam, I could forget the things that I had learnt.	1	2	3	4	5
Surely I will be thinking about the future exam for days.	1	2	3	4	5
I will realize that others are smarter than me.	1	2	3	4	5

Professors might think that I am stupid.	1 2 3 4 5
Others will notice if I start stuttering.	1 2 3 4 5
It might happen that I will simply not be able to pass some exams.	1 2 3 4 5
If my grades are not good, I will not be able to find a job that I like.	1 2 3 4 5
I will be feeling anxious at least several days before each exam.	1 2 3 4 5
Anxiety can impair my grades in the exams.	1 2 3 4 5
I will embarrass myself in front of my colleagues.	1 2 3 4 5

Control induction: listening to music

1	2	3	4	5
does not concern me at all	concerns me slightly	concerns me somewhat	concerns me fairly	concerns me a lot
Music plays an important role in my life.				1 2 3 4 5
Music makes the everyday life more bearable.				1 2 3 4 5
Listening to music is for me more than fun – it is a particular experience.				1 2 3 4 5
Each contact with music evokes my emotions.				1 2 3 4 5
I often get goose bumps when listening to music.				1 2 3 4 5
Through music you can reach extraordinary emotional experience.				1 2 3 4 5
Music allows me to move away from the immediate reality.				1 2 3 4 5
To me, music serves as an accompaniment to everyday activities.				1 2 3 4 5
Music opens up your consciousness to different perceptions, thoughts and emotions at the same time.				1 2 3 4 5
Listening to music does not arouse particular emotions in me.				1 2 3 4 5
Music opens the door to another plane of existence.				1 2 3 4 5
Music induces awe, much similar to magnificent natural landscapes.				1 2 3 4 5
Listening to music can relieve stress.				1 2 3 4 5

1. Skala pozitivnog i negativnog afekta/ Positive and negative affect schedule, PANAS

Naredna skala sastoji se od niza reči koje opisuju različita osećanja i emocije.

Pročitajte svaku reč i označite ispred nje u kojoj meri se **u ovom trenutku** tako osećate.

Ocenite reči na sledećoj skali:

1 – veoma malo ili uopšte ne 2- pomalo 3- umereno 4 – prilično 5 – veoma

__ zainteresovano	__ razdražljivo
__ zabrinuto	__ oprezno
__ uzbuđeno	__ posramljeno
__ uznemireno	__ inspirisano
__ snažno	__ nervozno
__ krivo	__ odlučno
__ uplašeno	__ pažljivo
__ neprijateljski nastrojeno	__ nemirno
__ oduševljeno	__ aktivno
__ ponosno	__ zastrašeno

*

This scale consists of a number of words describing different feelings and emotions.

Please read each word and indicate the extent to which you feel this way **at the present moment**. Write down your rating in the space provided before each word.

Use the following scale:

1 – very slightly or not at all 2- a little 3- moderately 4 – quite a bit 5 – extremely

__interested	__irritable
__distressed	__alert
__excited	__ashamed
__upset	__inspired
__strong	__nervous
__guilty	__determined
__scared	__attentive
__hostile	__jittery
__enthusiastic	__active
__proud	__afraid

2. Listing misli/ Thought listing technique

Molimo Vas da na linije ispod upišete misli koje Vam trenutno prolaze kroz glavu. Na svaku od linija upišite po jednu misao, i to što preciznije i sažetije (prostom rečenicom).

*

We would like you to write thoughts that are currently going through your head on the lines below. Write one thought per line, as precise as possible (in a single clause).

_____

_____

_____

_____

_____

3. Inventar opšte anksioznosti/ State / trait anxiety inventory

Ispod su navedene neke tvrdnje koje su ljudi koristili da opišu sebe. Pročitajte svaku tvrdnju i zaokružite odgovarajući broj desno, koji najbolje izražava **kako se generalno osećate**. Nema tačnih i pogrešnih odgovora. Nemojte trošiti previše vremena na razmišljanje o svakoj tvrdnji, već zaokružite odgovor za koji Vam se čini da najbolje izražava kako se generalno osećate.

1	2	3	4		
gotovo nikada	ponekad	često	gotovo uvek		
Osećam se prijatno.			1 2 3 4		
Osećam se nervozno i nemirno.			1 2 3 4		
Osećam se zadovoljno sobom.			1 2 3 4		
Voleo/la bih da sam srećan/na koliko mi drugi deluju srećno.			1 2 3 4		
Osećam se kao gubitnik.			1 2 3 4		
Osećam se odmorno.			1 2 3 4		
Ja sam osoba „čeličnih živaca".			1 2 3 4		
Osećam da se teškoće gomilaju toliko da ne mogu da ih prevaziđem.			1 2 3 4		
Previše brinem i o stvarima koje nisu tako važne.			1 2 3 4		
Srećan/na sam.			1 2 3 4		
Imam uznemirujuće misli.			1 2 3 4		
Nedostaje mi samopoštovanje.			1 2 3 4		
Osećam se sigurno.			1 2 3 4		
Sa lakoćom donosim odluke.			1 2 3 4		
Osećam se neadekvatno.			1 2 3 4		
Zadovoljan/na sam.			1 2 3 4		
Nevažne misli mi prolaze kroz glavu i dosađuju mi.			1 2 3 4		
Osećam se tako razočarano da to ne mogu da smetnem s uma.			1 2 3 4		
Ja sam stabilna osoba.			1 2 3 4		
Zapadam u stanje tenzije kada mislim na svoje aktuelne brige i interese.			1 2 3 4		

A number of statements that people have used to describe themselves are given below. Read each statement and circle the appropriate number to the right to indicate **how you generally feel**. There are no right or wrong answers. Do not spend much time considering any one statement, but circle the answer that you think best describes how you generally feel.

1 almost never	2 sometimes	3 often	4 almost always		
I feel pleasant.			1	2	3	4
I feel nervous and restless.			1	2	3	4
I feel satisfied with myself.			1	2	3	4
I wish I could be as happy as others seem to be.			1	2	3	4
I feel like a failure.			1	2	3	4
I feel rested.			1	2	3	4
I am "calm, cool, and collected".			1	2	3	4
I feel that difficulties are piling up so that I cannot overcome them.			1	2	3	4
I worry too much over something that really doesn't matter.			1	2	3	4
I am happy.			1	2	3	4
I have disturbing thoughts.			1	2	3	4
I lack self-confidence.			1	2	3	4
I feel secure.			1	2	3	4
I make decisions easily.			1	2	3	4
I feel inadequate.			1	2	3	4
I am content.			1	2	3	4
Some unimportant thought runs through my mind and bothers me.			1	2	3	4
I take disappointments so keenly that I can't put them out of my mind.			1	2	3	4
I am a steady person.			1	2	3	4
I get in a state of tension or turmoil as I think over my recent concerns and interests.			1	2	3	4

4. Skala globalnog samopoštovanja/ Self-esteem scale

Pred Vama je upitnik koji ispituje samopoštovanje i zadovoljstvo sobom. U ovom upitniku nema tačnih ni pogrešnih odgovora, interesuje nas Vaše mišljenje, tako da Vas molimo da odgovarate iskreno.

Ocenite stavke na skali od 1 do 5, pri čemu ocene znače:

> **(1)** ako je tvrdnja **potpuno netačna** ili se sa njom nimalo ne slažete.
>
> **(2)** ako je tvrdnja **uglavnom netačna** ili se sa njom uglavnom ne slažete.
>
> **(3)** ako je tvrdnja otprilike **podjednako i tačna i netačna** , ili ako ste **neutralni** u vezi sa tom tvrdnjom.
>
> **(4)** ako je tvrdnja **uglavnom tačna** ili se sa njom uglavnom slažete.
>
> **(5)** ako je tvrdnja **potpuno tačna** ili se sa njom potpuno slažete.

1. Često ne vrednujem sebe dovoljno.	1	2	3	4	5
2. Vrlo sam efikasan/a u poslovima koje obavljam.	1	2	3	4	5
3.Osećam se dobro «u svojoj koži».	1	2	3	4	5
4.Skoro uvek postignem ono za šta se zalažem.	1	2	3	4	5
5. Siguran/a sam u to koliko vredim.	1	2	3	4	5
6. Ponekad mi je neprijatno da razmišljam o sebi.	1	2	3	4	5
7. Imam negativan stav prema sebi.	1	2	3	4	5
8. Ponekad mi je teško da ostvarim stvari koje su mi bitne.	1	2	3	4	5
9. Kada mislim o sebi, osećam se odlično.	1	2	3	4	5
10. Ponekad se loše nosim sa izazovima.	1	2	3	4	5
11. Nikada ne sumnjam u sopstvenu vrednost.	1	2	3	4	5

12.U mnogim stvarima sam dobar/a.	1	2	3	4	5
13. Ponekad ne uspevam da ostvarim svoje ciljeve.	1	2	3	4	5
14.Veoma sam talentovan/a.	1	2	3	4	5
15. Nemam dovoljno poštovanja za sebe.	1	2	3	4	5
16. Voleo/la bih da sam veštiji/a u svojim aktivnostima.	1	2	3	4	5

*

This is a questionnaire that explores self-esteem and self-satisfaction. In this questionnaire there are no right and wrong answers, we are interested in your personal opinion, so we would ask you to give sincere answers.

Please rate each item on a scale from 1 to 5, meaning

> **(1)** if the item is **completely untrue** of you or you strongly disagree with it.
>
> **(2)** if the item is **mostly untrue** of you or you mostly disagree with it.
>
> **(3)** if the item is **neither true nor not true**, or if you are neutral to it.
>
> **(4)** if the item is **mostly true** of you, or you mostly agree with it.
>
> **(5)** if the item is completely true of you, or you strongly agree with it.

I tend to devalue myself.	1	2	3	4	5
I am highly effective at the things I do.	1	2	3	4	5
I am very comfortable with myself.	1	2	3	4	5
I am almost always able to accomplish what I try for.	1	2	3	4	5
I am secure in my sense of self-worth.	1	2	3	4	5
It is sometimes unpleasant for me to think about myself.	1	2	3	4	5
I have a negative attitude toward myself.	1	2	3	4	5

At times, I find it difficult to achieve the things that are important to me.	1	2	3	4	5
I feel great about who I am.	1	2	3	4	5
I sometimes deal poorly with challenges.	1	2	3	4	5
I never doubt my personal worth.	1	2	3	4	5
I perform very well at many things.	1	2	3	4	5
I sometimes fail to fulfill my goals.	1	2	3	4	5
I am very talented.	1	2	3	4	5
I do not have enough respect for myself.	1	2	3	4	5
I wish I were more skillful in my activities.	1	2	3	4	5

6. **Zadatak dopunjavanja reči / Word fragment completion task**

Vaš zadatak je da dopunite reči dopisivanjem slova koja nedostaju na crticama. Molimo Vas da dopunite rečju koja Vam prva padne na pamet. Na svaku crticu treba upisati po jedno slovo. Reči mogu biti imenice, pridevi i glagoli.

*

Your task is to complete the fragments by inserting missing letters (indicated by dashes). Please use the word that first comes to mind. Each dash corresponds with one missing letter. Words can be nouns, adjectives or verbs.

1. Z E L _ _

2. S E V _ _

3. S M _ _

4. U T _ _ M I C A

5. G R O _ _ E

6. C R T _ _

7. P A P _ _

8. S T _ _ _ C A

9. _ _ H R A N A

10. K V A D _ _ T

11. _ _ U Š K A

12. K O S T _ _

13. P _ _ N I N A

14. M A G _ _ I N

15. U _ _ R A T I

16. _ A V A T I

17. G _ O _

18. K O _ _ Č

19. _ _ B U K A

20. J E _ _ I

21. K A N _ _ _ N A C

22. _ _ T A V

23. _ E T _ A

24. S L A _ _ K

25. _ _ R I S A T I

26. S _ E Ć A

27. _ U G A

28. _ _ O L I C A

29. _ _ E K O

30. P A R _ _

7. Distraktorski zadatak – pretraga matrice brojeva/ Digit search distractor

Sledeći zadatak se tiče pretrage matrice brojeva. Molimo Vas da odgovorite prema uputstvu ispod matrice.

```
3  1  2  3  4  8  9  6  4  8  6  8  9  1  4
7  2  1  3  2  5  8  2  7  4  8  8  6  3  8
0  4  8  9  6  6  7  6  2  8  6  7  5  1  7
2  1  2  8  3  7  6  0  8  5  0  3  3  3  8
0  7  4  3  9  8  7  6  5  3  6  0  6  5  1
2  2  5  5  4  2  3  4  8  7  3  4  4  1  4
0  8  3  2  5  4  5  9  0  0  1  6  8  0  1
9  0  3  4  2  6  7  7  6  6  9  2  9  0  9
5  6  4  4  3  5  2  1  0  3  4  0  9  7  8
7  4  4  0  6  4  6  9  7  6  5  4  5  7  6
```

U sledećoj tabeli treba da pronađete određene brojeve:

a. zaokružite sve četvorke (4)

b. prekrižite sve šestice (6)

c. precrtajte zajedničkom linijom sve slučajeve gde se dve iste cifre ponavljaju jedna pored druge (npr. 1 1) u bilo kom smeru

d. zaokružite sve kombinacije dve cifre koje počinju nulom (npr. 0 1), ali samo ako su u istom redu

*

The following task is to perform search in a number matrix. Please respond according to the instructions provided below the matrix.

```
3  |  2  3  4  8  9  6  4  8  6  8  9  |  4
7  2  |  3  2  5  8  2  7  4  8  8  6  3  8
0  4  8  9  6  6  7  6  2  8  6  7  5  |  7
2  |  2  8  3  7  6  0  8  5  0  3  3  3  8
0  7  4  3  9  8  7  6  5  3  6  0  6  5  |
2  2  5  5  4  2  3  4  8  7  3  4  4  |  4
0  8  3  2  5  4  5  9  0  0  |  6  8  0  |
9  0  3  4  2  6  7  7  6  6  9  2  9  0  9
5  6  4  4  3  5  2  |  0  3  4  0  9  7  8
7  4  4  0  6  4  6  9  7  6  5  4  5  7  6
```

In the matrix above, please mark the following:

a. circle all instances of digit four (4)

b. cross all instances of digit six (6)

c. cross with one line all the instances in which two identical digits repeat beside each other (e.g. 1 1) in any direction

d. circle all two-digit combinations starting with a zero (e.g. 0 1), but only when in the same line

8. Zadatak dopunjavanja reči (jednostavna verzija, korišćen u Eksperimentu V) / Word fragment completion task (easy version, used in Experiment V) –

Vaš zadatak je da dopunite reči dopisivanjem slova koja nedostaju na crticama. Molimo Vas da dopunite rečju koja Vam prva padne na pamet. Na svaku crticu treba upisati po jedno slovo. Reči mogu biti imenice, pridevi i glagoli.

*

Your task is to complete the fragments by inserting missing letters (indicated by dashes). Please use the word that first comes to mind. Each dash corresponds with one missing letter. Words can be nouns, adjectives or verbs.

1.   Z E L _ N
2.   S E V _ _
3.   S M _ _
4.   U T _ _ M I C A
5.   G R O _ _ E
6.   P A P _ R
7.   S T O _ _ C A
8.   _ _ B U K A
9.   K V A D _ _ T
10. P _ _ N I N A
11. U _ R E T I
12. M A G _ _ I N

III. Appendix III: Lexical decision taks stimuli lists

death related (vezane za smrt)	negative (negativne)	neutral (neutralne)	pseudowords (pseudoreči)
SMRT	KRV	ZVEZDA	SIGA
MRTAV	BOL	GLAVA	KLJUP
TUGA	PASTI	KIŠA	STOVA
UMRETI	STRAH	MUZIKA	POMAS
GROBLJE	SAMOĆA	PRIČA	STELEN
SVEĆA	GROM	ZUB	JEMIK
MRTVAC	GROZNICA	IDEJA	RALUN
SAHRANA	STREPNJA	STRANAC	ALBUK
ŽALOST	GREŠKA	PISAC	DINAV
KRST	LUDILO	ISHRANA	VATKA
GUBITAK	UZNEMIREN	JEDNOSTAVAN	KRUL
SANDUK	NEUSPEH	POJAM	PRUMA
CRNINA	NEZGODA	METLA	SISTEK
GROBNICA	PRLJAVŠTINA	OPAZITI	CREKO
SAMOUBICA	PIŠTOLJ	KVADRAT	MEVA
MRTVAČNICA	NESIGURNOST	PATKA	OBLIR
SKELET	INFEKCIJA	IRONIJA	VENAL
SAUČEŠĆE	SMETNJA	STATUS	DOKTON
TESTAMENT	VIRUS	PODMORNICA	USLOR
INFARKT	OTPAD	MOLEKUL	MATIFA
			LIRT
			MAVA
			STAK
			PESAR
			STRUM
			PISAB
			POKAO
			VEMA
			VISIDA
			GOTOR
			CENTANJ
			MREFA
			PLOMA
			SKON
			KORED
			VRAF
			RADLA
			FIGUCA
			KOLAP
			ZAKOF
			PISRO

			ZNAB
			LABAC
			STRUDA
			POTEF
			REKRO
			OBRUD
			MONEL
			DVOJTA
			SLOP
			POKREM
			OBLART
			PRAKAC
			OSNORA
			CIKLUR
			MOMAL
			KLJUR
			BLOR
			GRAVA
			SIGA
			KLJUP
			ZGLOT

IV. Appendix IV: Questionnaire used in Experiment II

Upitnik o kolektivnim strategijama samooznaživanja (Ogled II)

Upišite svoju šifru: _____

Naredni deo istraživanja ispituje neke Vaše stavove i poglede na nacionalnu pripadnost. Zamolićemo Vas da razmislite o nacionalnoj grupi kojoj pripadate i o tome šta Vas čini sličnim drugim pripadnicima nacionalne grupe (Srbima/pripadnicima neke druge grupe). Molimo Vas da pažljivo čitate instrukcije i da odgovorite na svako pitanje. Ne morate previše razmišljati – značajne su nam prve, spontane reakcije.

Molimo Vas da navedete svoju nacionalnu pripadnost: _____

Na donjoj listi navedene su različite osobine. Vaš zadatak je da za svaku od osobina navedete sledeće procene u navedenom redosledu (najpre ocenite svaku osobinu prema kriterijumu 1, i dalje):

1. ocenite na skali od 1 do 5 u kojoj meri smatrate da je svaka od navedenih osobina karakteristična za Vas lično

(1 – nimalo karakteristična, 2 – ne baš karakteristična, 3 – nisam siguran/na, 4 – donekle karakteristična, 5 – veoma karakteristična)

2. procenat Srba za koji smatrate da poseduje navedenu osobinu *(od 0 do 100%).*

3. da li smatrate da je pozitivna, negativna ili neutralna *(zaokružite odgovarajući znak +, -, 0).*

osobina	1. karakteristično za mene (1-5)	2. karakteristično za Srbe (0 – 100%)	3. pozitivna/negativna /neutralna (+/-/0)
dosadan	1 2 3 4 5	____%	+ / **0** / -
kulturan	1 2 3 4 5	____%	+ / **0** / -
pedantan	1 2 3 4 5	____%	+ / **0** / -
nemoralan	1 2 3 4 5	____%	+ / **0** / -
lenj	1 2 3 4 5	____%	+ / **0** / -
primitivan	1 2 3 4 5	____%	+ / **0** / -
nadmen	1 2 3 4 5	____%	+ / **0** / -
ponosan	1 2 3 4 5	____%	+ / **0** / -
agresivan	1 2 3 4 5	____%	+ / **0** / -
škrt	1 2 3 4 5	____%	+ / **0** / -
topao	1 2 3 4 5	____%	+ / **0** / -
blag	1 2 3 4 5	____%	+ / **0** / -
hrabar	1 2 3 4 5	____%	+ / **0** / -
promišljen	1 2 3 4 5	____%	+ / **0** / -
ratoboran	1 2 3 4 5	____%	+ / **0** / -
gostoljubiv	1 2 3 4 5	____%	+ / **0** / -

Sada ćemo Vas zamoliti da pažljvo pročitate svaku od tvrdnji i na opisanoj skali od 1 do 5 naznačite u kojoj meri se sa njom slažete.

1 uopšte se ne slažem	2 uglavnom se ne slažem	3 neodlučan/na sam	4 uglavnom se slažem	5 u potpunosti se slažem				
1. Sebe vidim pre svega kao Srbina/Srpkinju.				1	2	3	4	5
2. To što sam Srbin/Srpkinja nije značajno za to kako doživljavam sebe.				1	2	3	4	5
3. Ponosim se time što sam Srbin/Srpkinja.				1	2	3	4	5
4. Osećam da me dobro opisuje to što sam Srbin/Srpkinja.				1	2	3	4	5
5. Čini mi se da se dobro uklapam među druge Srbe.				1	2	3	4	5
6. Svest o tome da sam Srbin/Srpkinja čini da se dobro osećam.				1	2	3	4	5
7. Osećam da sam sličan/na prosečnom Srbinu/Srpkinji.				1	2	3	4	5
8. Zadovoljan/na sam time što sam Srbin/Srpkinja.				1	2	3	4	5
1. Srbi dele mnoge zajedničke osobine.				1	2	3	4	5
2. Srpska nacija je samo jedna apstrakcija.				1	2	3	4	5
3. Među Srbima ne postoje granice, gde god da oni žive.				1	2	3	4	5
4. Osećam da su svi Srbi povezani jakim vezama.				1	2	3	4	5
5. Srbi povezuje zajednička prošlost.				1	2	3	4	5
6. Srbi imaju karakterističnu prirodu.				1	2	3	4	5
7. Srbi ne čine nekakvu jedinstvenu grupu.				1	2	3	4	5
8. Srbi dele zajedničku sudbinu.				1	2	3	4	5

HVALA NA SARADNJI!

*

The following part of the questionnaire explores some of your views on national identity. We would like you to think about the national group you belong to and how you are similar to other members of the national group (Serbs/members of another group). Please read the instructions carefully and answer each question. Do not think too long – it is the first, spontaneous reactions that are of interest.

Please state your nationality: _____

We will present you with a list of traits. Your task is to rate each of the traits on several dimensions (please give your ratings in the following order):

1. the extent to which the trait is characteristic for you personally, on a scale from 1 (not at all characteristic) to 5 (very characteristic)

2. the percentage of Serbs that you would say possess the trait (from 0 to 100%)

3. do you consider the trait to be positive, negative, or neutral (circle the appropriate sign +, -, 0).

trait	1. characteristic for me (1-5)	2. characteristic for Serbs (0 – 100%)	3. positive/negative/neutral (+/-/0)
dull	1 2 3 4 5	____%	+ / 0 / -
cultured	1 2 3 4 5	____%	+ / 0 / -
meticulous	1 2 3 4 5	____%	+ / 0 / -
immoral	1 2 3 4 5	____%	+ / 0 / -
lazy	1 2 3 4 5	____%	+ / 0 / -
primitive	1 2 3 4 5	____%	+ / 0 / -
snobbish	1 2 3 4 5	____%	+ / 0 / -
proud	1 2 3 4 5	____%	+ / 0 / -
agressive	1 2 3 4 5	____%	+ / 0 / -
stingy	1 2 3 4 5	____%	+ / 0 / -
warm	1 2 3 4 5	____%	+ / 0 / -

mild	1 2 3 4 5	____%	+ / **0** / -
brave	1 2 3 4 5	____%	+ / **0** / -
thoughtful	1 2 3 4 5	____%	+ / **0** / -
belligerent	1 2 3 4 5	____%	+ / **0** / -
hospitable	1 2 3 4 5	____%	+ / **0** / -

Now please read each of the statements carefully and indicate how much you would endorse the statement on a scale from 1(not at all) to 5 (very much).

1	2	3	4	5
strongly disagree	**mostly disagree**	**neither agree nor disagree**	**mostly agree**	**strongly agree**

1. I see myself primarily as a Serb.	**1 2 3 4 5**
2. The fact that I am a Serb is not imporant for how I see myself.	**1 2 3 4 5**
3. I am proud of being a Serb.	**1 2 3 4 5**
4. I feel that being a Serb describes me well.	**1 2 3 4 5**
5. I think that I fit well together among other Serbs.	**1 2 3 4 5**
6. Knowing that I am a Serb makes me feel good.	**1 2 3 4 5**
7. I feel that I am similar to an average Serb.	**1 2 3 4 5**
8. I am content to be a Serb.	**1 2 3 4 5**
9. Serbs share many common traits.	**1 2 3 4 5**
10. Serbian nation is merely an abstraction.	**1 2 3 4 5**
11. There are no borders among Serbs, wherever they might live.	**1 2 3 4 5**
12. I feel that all Serbs are connected through strong ties.	**1 2 3 4 5**
13. Serbs are unified through a common past.	**1 2 3 4 5**
14. Serbs possess a characteristic nature.	**1 2 3 4 5**
15. Serbs do not make a unified group.	**1 2 3 4 5**
16. Serbs share a common destiny.	**1 2 3 4 5**

Upitnik o individualnim strategijama samooznaživanja (Ogled III)

Upišite svoju šifru: _____

U narednom delu istraživanja želeli bismo da se fokusirate na sebe. Zamolićemo Vas na početku da razmislite o tome šta Vas čini različitim i izdvaja od drugih osoba koje znate.

Molimo Vas da pažljivo čitate instrukcije i da odgovorite na svako pitanje. Ne morate previše razmišljati – značajne su nam prve, spontane reakcije.

Molimo vas da navedete pet događaja iz VAŠE LIČNE PROŠLOSTI (autobiografskih događaja) koji Vam PRVO PADNU NA PAMET. Nemojte mnogo razmišljati, navedite događaje kojih se prvo setite u ovom trenutku, bez selekcije. Navedite ih u formi teza, ne duže od jedne rečenice:

Kratak opis događaja:	ocena pozitivnosti	ocena značaja
1.	1 2 3 4 5	1 2 3 4 5
2.	1 2 3 4 5	1 2 3 4 5
3.	1 2 3 4 5	1 2 3 4 5
4.	1 2 3 4 5	1 2 3 4 5
5.	1 2 3 4 5	1 2 3 4 5

Sada Vas molimo da se vratite na događaje koje ste opisai i da svaki događaj ocenite:

1. **u kojoj meri je pozitivan ili negativan** (u kojoj meri uz njega vezujete pozitivna ili negativna osećanja), na skali od 1 (izrazito negativan) do 5 (izrazito pozitivan).

2. **koliko je ovaj događaj značajan za osobu kakva ste Vi sada**. Ocenite svaki događaj ocenom od 1 (nimalo značajan) do 5 (izrazito značajan).

272

Sada ćemo Vam prikazati niz osobina, koje ljudi mogu koristiti da opišu sebe. Molimo Vas da ocenite **u kojoj meri smatrate da posedujete navedenu osobinu u poređenju sa drugim studentima,** na skali od **1 (mnogo manje nego drugi)** do **5 (mnogo više nego drugi).**

	koliko je posedujete u poređenju sa drugim studentima						
UREDAN/A	*mnogo manje*	1	2	3	4	5	*mnogo više*
NAČITAN/A	*mnogo manje*	1	2	3	4	5	*mnogo više*
NESIGURAN/NA	*mnogo manje*	1	2	3	4	5	*mnogo više*
TOLERANTAN/NA	*mnogo manje*	1	2	3	4	5	*mnogo više*
NEPRAKTIČAN/NA	*mnogo manje*	1	2	3	4	5	*mnogo više*
RAZUMAN/NA	*mnogo manje*	1	2	3	4	5	*mnogo više*
PAMETAN/NA	*mnogo manje*	1	2	3	4	5	*mnogo više*
SARKASTIČAN/NA	*mnogo manje*	1	2	3	4	5	*mnogo više*
NEUROTIČAN/NA	*mnogo manje*	1	2	3	4	5	*mnogo više*
TAČAN/NA	*mnogo manje*	1	2	3	4	5	*mnogo više*
NEDOSLEDAN/NA	*mnogo manje*	1	2	3	4	5	*mnogo više*
ODGOVORAN/NA	*mnogo manje*	1	2	3	4	5	*mnogo više*
NESPRETAN/NA	*mnogo manje*	1	2	3	4	5	*mnogo više*
HVALISAV/A	*mnogo manje*	1	2	3	4	5	*mnogo više*
KREATIVAN/NA	*mnogo manje*	1	2	3	4	5	*mnogo više*
LAKOVERAN	*mnogo manje*	1	2	3	4	5	*mnogo više*

Molimo Vas da ocenite za svaku osobinu: **1.** u kojoj meri smatrate da je navedenu **osobinu značajno posedovati u životu** na skali od 1(nimalo značajna) do 5 (veoma značajna) i **2.** u kojoj meri smatrate da je osobina **pozitivna** na skali od 1 (izrazito negativna) do 5 (izrazito pozitivna).

	procena značaja osobine					pozitivnost osobine				
UREDAN	1	2	3	4	5	1	2	3	4	5
NAČITAN	1	2	3	4	5	1	2	3	4	5
NESIGURAN	1	2	3	4	5	1	2	3	4	5
TOLERANTAN	1	2	3	4	5	1	2	3	4	5
NEPRAKTIČAN	1	2	3	4	5	1	2	3	4	5
RAZUMAN	1	2	3	4	5	1	2	3	4	5
PAMETAN	1	2	3	4	5	1	2	3	4	5
SARKASTIČAN	1	2	3	4	5	1	2	3	4	5
NEUROTIČAN	1	2	3	4	5	1	2	3	4	5
TAČAN	1	2	3	4	5	1	2	3	4	5
NEDOSLEDAN	1	2	3	4	5	1	2	3	4	5
ODGOVORAN	1	2	3	4	5	1	2	3	4	5
NESPRETAN	1	2	3	4	5	1	2	3	4	5
HVALISAV	1	2	3	4	5	1	2	3	4	5
KREATIVAN	1	2	3	4	5	1	2	3	4	5
LAKOVERAN	1	2	3	4	5	1	2	3	4	5

Na sledećoj listi su navedeni neki pozitivni i negativni događaji, koji se ljudima mogu desiti u nekom trenutku u životu. Vaš zadatak je da za svaki događaj **ocenite koliko smatrate da će se ovaj događaj dogoditi Vama lično**, tako što ćete zaokružiti jedan od ponuđenih odgovora (verovatnoća od 5, 35, 50, 65, 80, 95%).

događaj	verovatnoća da se dogodi meni						
Baviću se poslom koji zaista i volim.	5 %	15 %	35 %	50 %	65 %	80 %	95 %
Nekada u budućnosti imaću problema sa alkoholom.	5 %	15 %	35 %	50 %	65 %	80 %	95 %
Napustiću fakultet pre nego što diplomiram.	5 %	15 %	35 %	50 %	65 %	80 %	95 %
U šezdesetoj godini biću dobrog zdravlja.	5 %	15 %	35 %	50 %	65 %	80 %	95 %

274

Nekada u budućnosti promeniću posao, jer će mi biti ponuđen bolji.	5 %	15 %	35 %	50 %	65 %	80 %	95 %
Doživeću infarkt pre nego što napunim 50 godina.	5 %	15 %	35 %	50 %	65 %	80 %	95 %
Nekada u budućnosti kupiću sebi stan.	5 %	15 %	35 %	50 %	65 %	80 %	95 %
Razvešću se nakon nekoliko godina braka.	5 %	15 %	35 %	50 %	65 %	80 %	95 %
Nekada u budućnosti zaraziću se seksualno prenosivom bolešću.	5 %	15 %	35 %	50 %	65 %	80 %	95 %
Pronaći ću posao u roku od godinu dana od diplomiranja.	5 %	15 %	35 %	50 %	65 %	80 %	95 %

A sada zamislite koliko je verovatno da se **dogodi drugim studentima istog pola sa Vašeg univerziteta**, tako što ćete zaokružiti jedan od ponuđenih odgovora (verovatnoća od 5, 35, 50, 65, 80, 95%).

događaj	verovatnoća da se dogodi drugim studentima						
Nekada u budućnosti kupiće sebi stan.	5%	15 %	35 %	50 %	65 %	80 %	95 %
Nekada u budućnosti imaće problema sa alkoholom.	5%	15 %	35 %	50 %	65 %	80 %	95 %
Napustiće fakultet pre nego što diplomira.	5%	15 %	35 %	50 %	65 %	80 %	95 %
Nekada u budućnosti promeniće posao, jer će mu/joj biti ponuđen bolji.	5%	15 %	35 %	50 %	65 %	80 %	95 %
Nekada u budućnosti zaraziće se seksualno prenosivom bolešću.	5%	15 %	35 %	50 %	65 %	80 %	95 %
Baviće se poslom koji zaista i voli.	5%	15 %	35 %	50 %	65 %	80 %	95 %
U šezdesetoj godini biće dobrog zdravlja.	5%	15 %	35 %	50 %	65 %	80 %	95 %
Razvešće se nakon nekoliko godina braka.	5%	15 %	35 %	50 %	65 %	80 %	95 %
Pronaći će posao u roku od godinu dana od diplomiranja.	5%	15 %	35 %	50 %	65 %	80 %	95 %
Doživeće infarkt pre nego što napuni 50 godina.	5%	15 %	35 %	50 %	65 %	80 %	95 %

*

Individual enhancement questionnaire

In the following part of the study we would like you to focus on yourselves. To begin, please think about what it is that makes you different from other people you know.

Please read the instructions carefully and answer each question. Do not think too long – it is the first, spontaneous reactions that are of interest.

Please write down five events from YOUR PERSONAL PAST (autobiographic events) that FIRST CAME TO MIND. Do not spend too much time thinking just write down the events that first come to mind, without any selection. Describe them succinctly, in no more than a sentence.

Short description of the event:	positivity of the event	importance of the event
1.	1 2 3 4 5	1 2 3 4 5
2.	1 2 3 4 5	1 2 3 4 5
3.	1 2 3 4 5	1 2 3 4 5
4.	1 2 3 4 5	1 2 3 4 5
5.	1 2 3 4 5	1 2 3 4 5

Now, please look at the events one more time and rate for each one of them:

1. **the extent to which it is positive or negative** (the extent to which you associate positive or negative feelings with this event) on a scale from 1(quite negative) to 5 (quite positive)

2. **the extent to which this event is important for the person you are today**. Rate each event on a scale from 1 (not at all important) to 5 (very important).

We will now present you with some traits that people can use to describe themselves. Please rate to which **degree you think that each of the traits characterizes you in comparison to other students,** on a scale from **1 (much less than others)** to **5 (much more than others).**

	how well does the trait charactarise you, in comparison to other students						
TIDY	much less	1	2	3	4	5	much more
WELL-READ	much less	1	2	3	4	5	much more
INSECURE	much less	1	2	3	4	5	much more
TOLERANT	much less	1	2	3	4	5	much more
IMPRACTICAL	much less	1	2	3	4	5	much more
REASONABLE	much less	1	2	3	4	5	much more
SMART	much less	1	2	3	4	5	much more
SARCASTIC	much less	1	2	3	4	5	much more
NEUROTIC	much less	1	2	3	4	5	much more
PUNCTUAL	much less	1	2	3	4	5	much more
INCONSISTENT	much less	1	2	3	4	5	much more
CONSCIENTIOUS	much less	1	2	3	4	5	much more
CLUMSY	much less	1	2	3	4	5	much more
BOASTFUL	much less	1	2	3	4	5	much more
CREATIVE	much less	1	2	3	4	5	much more
GULLIBLE	much less	1	2	3	4	5	much more

Now rate for each of the traits 1. the degree to which you consider **the trait to be important,** on a scale from 1 (not at all important) to 5 (very important), 2. the extent to which you consider the trait to be **positive**, on a scale from 1(extremely negative) to 5 (extremely positive):

	importance of the trait					positivity of the trait				
TIDY	1	2	3	4	5	1	2	3	4	5
WELL-READ	1	2	3	4	5	1	2	3	4	5
INSECURE	1	2	3	4	5	1	2	3	4	5
TOLERANT	1	2	3	4	5	1	2	3	4	5
IMPRACTICAL	1	2	3	4	5	1	2	3	4	5
REASONABLE	1	2	3	4	5	1	2	3	4	5

SMART	1	2	3	4	5	1	2	3	4	5
SARCASTIC	1	2	3	4	5	1	2	3	4	5
NEUROTIC	1	2	3	4	5	1	2	3	4	5
PUNCTUAL	1	2	3	4	5	1	2	3	4	5
INCONSISTENT	1	2	3	4	5	1	2	3	4	5
CONSCIENTIOUS	1	2	3	4	5	1	2	3	4	5
CLUMSY	1	2	3	4	5	1	2	3	4	5
BOASTFUL	1	2	3	4	5	1	2	3	4	5
CREATIVE	1	2	3	4	5	1	2	3	4	5
GULLIBLE	1	2	3	4	5	1	2	3	4	5

Na sledećoj listi su navedeni neki pozitivni i negativni događaji, koji se ljudima mogu desiti u nekom trenutku u životu. Vaš zadatak je da za svaki događaj **ocenite koliko smatrate da će se ovaj događaj dogoditi Vama lično**, tako što ćete zaokružiti jedan od ponuđenih odgovora (verovatnoća od 5, 35, 50, 65, 80, 95%).

In the following, we listed some positive and negative events, that might happent to people in certain points of their life. Your task is **to rate how likely you consider each of the events is to happen to you personally**, be circling one of the answers (probability of 5, 35, 50, 65, 80, 95 %).

event	probability that this will happen to me					
I will have a job I really like.	5%	15 %	35 %	50 %	65 %	80 %	95 %
Some time in future, I will have drinking problems.	5%	15 %	35 %	50 %	65 %	80 %	95 %
I will drop out of college.	5%	15 %	35 %	50 %	65 %	80 %	95 %
I will enjoy good health at the age of 60.	5%	15 %	35 %	50 %	65 %	80 %	95 %
Some time in future, I will change my job for a better one.	5%	15 %	35 %	50 %	65 %	80 %	95 %
I will suffer a heart attack before the age of 50.	5%	15 %	35 %	50 %	65 %	80 %	95 %
Some time in future, I will own my own apartment.	5%	15 %	35 %	50 %	65 %	80 %	95 %
I will divorce after a few years of marriage.	5%	15 %	35 %	50 %	65 %	80 %	95 %

Some time in future, I will contract a sexually transmitted disease.	5%	15 %	35 %	50 %	65 %	80 %	95 %
I will find a job within a year from graduation.	5%	15 %	35 %	50 %	65 %	80 %	95 %

And now imagine how likely the events are to happen to **other students of the same sex from your university**, by circling one of the answers (probability of 5, 35, 50, 65, 80, 95 %).

event	*probability of happening to other students*						
Some time in future, they will own their own apartment.	5%	15 %	35 %	50 %	65 %	80 %	95 %
Some time in future, they will have drinking problems.	5%	15 %	35 %	50 %	65 %	80 %	95 %
They will drop out of college.	5%	15 %	35 %	50 %	65 %	80 %	95 %
Some time in future, they will change their job for a better one.	5%	15 %	35 %	50 %	65 %	80 %	95 %
Some time in future, they will contract a sexually transmitted disease.	5%	15 %	35 %	50 %	65 %	80 %	95 %
They will have a job they really like.	5%	15 %	35 %	50 %	65 %	80 %	95 %
They will enojoy good health at the age of 60.	5%	15 %	35 %	50 %	65 %	80 %	95 %
They will divorce after a few years of marriage.	5%	15 %	35 %	50 %	65 %	80 %	95 %
They will find a job within a year from graduation.	5%	15 %	35 %	50 %	65 %	80 %	95 %
They will suffer a heart attack before the age of 50.	5%	15 %	35 %	50 %	65 %	80 %	95 %

VI. Appendix VI: Triandis individualism – collectivism scale

Triandisova skala individualizma i kolektivizma

Sada ćemo Vam prikazati niz tvrdnji o nekim opštim životnim pitanjima. Molimo Vas da na svaku odgovorite označavanjem broja koji nabolje izražava Vaše mišljenje, na skali od 1 (nikada ili definitivno ne) do 9 (uvek ili definitivno da).

*Prema preporuci autora, tvrdnje su prikazivane u randomiziranom redosledu.

Horizontalni individualizam

1. Radije se oslanjam na sebe nego na druge ljude.
2. Većinom se uzdam u sebe, a retko u druge.
3. Često se bavim stvarima koje su meni najvažnije.
4. Jako mi je važan moj lični identitet, nezavisan od drugih.

Vertikalni individualizam

1. Važno mi je da sam u svom poslu bolji od drugih.
2. Najvažnije je pobediti.
3. Takmičenje je zakon prirode.
4. Kada neko drugi nešto bolje uradi, postanem napet/a i uznemiren/a.

Horizontalni kolektivizam

1. Kada moj kolega dobije nagradu, i ja sam ponosan/a.
2. Važno mi je da se ljudi sa kojima radim dobro osećaju.
3. Za mene zadovoljstvo znači biti sa drugim ljudima.
4. Prija mi kada nešto radim zajedno sa drugim ljudima.

Vertikalni kolektivizam

1. Roditelji i deca treba da ostanu zajedno koliko je god to moguće.
2. Moja je dužnost da brinem o porodici, čak i kada moram da žrtvujem ono što ja želim.

3. Porodice treba da se drže zajedno, kakva god žrtva da je potrebna.

4. Važno mi je da poštujem odluke koje su donele grupe kojima pripadam.

<p style="text-align:center">*</p>

We will now present you with a series of statements on some general issues in life. Please rate each statement by choosing a number that best describes your attitude, on a scale from 1 (never or definitely no) to 9 (always or definitely yes).

*The items were presented in randomized order, as suggested by the authors. All items are answered on a 9-point scale, ranging from 1= never or definitely no and 9 = always or definitely yes.

Horizontal individualism items:

1. I'd rather depend on myself than others.

2. I rely on myself most of the time; I rarely rely on others.

3. I often do "my own thing."

4. My personal identity, independent of others, is very important to me.

Vertical individualism items:

1. It is important that I do my job better than others.

2. Winning is everything.

3. Competition is the law of nature.

4. When another person does better than I do, I get tense and aroused.

Horizontal collectivism items:

1. If a coworker gets a prize, I would feel proud.

2. The well-being of my coworkers is important to me.

3. To me, pleasure is spending time with others.

4. I feel good when I cooperate with others.

Vertical collectivism items:

1. Parents and children must stay together as much as possible.

2. It is my duty to take care of my family, even when 1 have to sacrifice what I want.

3. Family members should stick together, no matter what sacrifices are required.

4. It is important to me that I respect the decisions made by my groups.

Appendix VII: Complete materials used in Experiment V

Aparthotel Rožice (Slovenija)

Aparthotel Rožice vam želi dobrodošlicu u Sloveniju. Savremeni hotel i wellness centar skrojeni su za maksimum Vašeg užitka. Kod nas možete uživati u prirodi i osloboditi se svakog stresa, doseći potpuno fizičko i mentalno spokojstvo. Osećaćete se bolje nakon duge šetnje u šumi i ukusnog obroka, ili opuštajućeg boravka u našem wellness centru, koji se snabdeva iz prirodnog termalnog izvora.

Hotel nudi 52 prostrane sobe, za jednu, dve osobe ili porodice. Elegantne i moderno opremljene, priuštiće vam opuštajuće momente i užitak punog komfora. Svaka soba ima TV, besplatni Internet, sef za odlaganje dragocenosti, kupatilo sa peškirima, bade-mantilima i fenom. Sve sobe imaju i prostran, natkriven balkon, koji vas povezuje direktno sa prirodom. Gostima hotela na raspolaganju je bogata paleta wellness usluga vrhunskog kvaliteta.

Sadržaji

- ✓ Otvoreni i zatvoreni bazeni
- ✓ Finska sauna
- ✓ Parno kupatilo
- ✓ Slana soba
- ✓ Teretana sa spravama
- ✓ Tereni za skvoš i tenis
- ✓ Solarijum

Cene: od 81 eura za noćenje

Aparthotel Rožice is a newly established family-run hotel in Slovenia. Here you can enjoy the nature and relieve yourselves from stress, reaching both physical and mental relaxation. You'll feel better after enjoying a long walk in the woods and having a nice traditional meal at our restaurant, or a relaxing swim in the wellness centre.

Rooms

The hotel offers 52 spacious single, double rooms as well as large family suites. Each room is equipped with TV, free wi-fi, deposit box, bathroom with a shower, towels, and hair-dryer.

Facilities

- ✓ Indoor and outdoor pools
- ✓ Finnish sauna
- ✓ Turkish sauna
- ✓ Salty sauna
- ✓ Gym
- ✓ Squash and tennis courts
- ✓ Solarium

Prices: from 69 euros per night

Photo gallery:

Dream Wellness (Srbija)

Posetite nas i iskusite kako žive filmske zvezde! Dream Wellness je novootvoreni hotel i spa centar, kojim želimo da postavimo nove standarde banjskog odmora u Srbiji. Svaka karakteristika hotela je brižljivo promišljena i superiorna u odnosu na sve prethodnike. Prefinjeni dizajn enterijera stapa se neprimetno sa prelepim prirodnim ambijentom. Naš hotel će postati nezaobilazna destinacija za goste koji teže luksuznom i nesvakidašnjem iskustvu!

Hotel nudi 59 premium jednokrevetnih, dvokrevetnih soba i apartmana, sa pogledom na bazenski kompleks. Enterijer je rezultst rada inovativnih dizajnera, koji su koristili prirodne materijale i savremene elemente, stvarajući prostor svež kao sam planinski vazduh. Svaka soba opremljena je klima uređajem, flat screen televizorom sa satelitskim kanalima, sefom, kupatilom sa kadom za masažu, besplatnom kozmetikom, bade-mantilima, mini-barom i potpunom zvučnom izolacijom. Besplatan wi-fi internet je dostupan u svim sobama.

Sadržaji

- ✓ Otvoreni i zatvoreni bazeni
- ✓ Hidromasažne kade
- ✓ Finska i infracrvena sauna
- ✓ Tursko kupatilo
- ✓ Parno kupatilo
- ✓ Relaksaciona masaža celog tela
- ✓ Masaža čokoladom
- ✓ Thai masaža
- ✓ Solarijum
- ✓ Kozmetički tretmani
- ✓ Frizer
- ✓ Teretana
- ✓ Tereni za golf
- ✓ Besplatni parking
- ✓ Usluge prevoza

Cena: od 183 po noćenju

Dream Wellness is a brand new wellness and spa centre, aiming to set new standards for spa experience in Serbia. Its premium wellness centre is available for hotel guests free of charge, including a variety of massages. Our centre features an innovative approach in wellness with the light therapy that has beneficial effects on the nervous system. Visit us and experience the life of a movie star for a few days!

Rooms

The hotel offers 59 premium single, double rooms and suites with a view of the pools. Each room is equipped with air-conditioner, flat screen TV, satellite channels, deposit box, bathroom with a massage bathtub, free toiletries, bathrobes, mini-bar, as well as soundproofing. Free wi-fi is available in each room.

Facilities

- ✓ Indoor and outdoor pools
- ✓ Hot tubs
- ✓ Finnish sauna
- ✓ Turkish bath
- ✓ Steambath
- ✓ Relaxation massage
- ✓ Chocolate massage
- ✓ Thai massage
- ✓ Solarium
- ✓ Beauty treatments
- ✓ Hair stylist
- ✓ Gym
- ✓ Golf court
- ✓ Free parking
- ✓ Shuttle services

Prices: from 183 euros per night

Photo gallery:

Wellness Zdravljak (Srbija)

Dobrodošli u novootvoreni wellness centar Zdravljak! Naš centar je smešten u srcu Srbije, u prelepom prirodnom okruženju. Hotel Zdravljak će svojim naročitim šarmom oduševiti svakog gosta koji želi da provede prijatan odmor u prirodi. Priuštite sebi beg od svakodnevnih stresova i iskustvo opuštajuće prirode i spa tretmana po povoljnim cenama. U našem hotelu pronaći ćete oazu mira i tišine. Geografski položaj i mikroklimatski uslovi pružaju idealnu poziciju za wellness i relaksaciju.

Hotel nudi 55 prostanih i svetlih soba, jednokrevetnih, dvokrevetnih i apartmana. Standard kvaliteta soba može zadovoljiti goste sa najistančanijim ukusom. Svaka soba je opremljena TV-om, sefom, telefonom, kupatilom sa tušem, peškirima, fenom za kosu i balkonom.

Sadržaji

- ✓ Otvoreni i zatvoreni bazeni
- ✓ Finska sauna
- ✓ Tursko kupatilo
- ✓ Teretana
- ✓ Teniski tereni
- ✓ Stoni tenis
- ✓ Besplatni parking

Cene: od 79 EU za noćenje

The hotel is located in the heart of Serbia, with a beautiful natural surroundings. Hotel Zdravljak and its specific charm will delight any guest who whishes a pleasant holiday in the nature. Treat yourself with a flight from the stresses of the everyday and experience a relaxing nature and spa experience at affordable prices. In our hotel you will find an oasis of peace and quiet. The geographical location with its microclimate makes an ideal position for wellness and relaxation.

Rooms

The hotel offers 55 spacious and light single, double rooms and suites. Each room is equipped with TV, deposit box, telephone, bathroom with a shower, towels, hair-dryer and a balcony.

Facilities

- ✓ Indoor and outdoor pools
- ✓ Finnish sauna
- ✓ Turkish sauna
- ✓ Gym
- ✓ Tennis courts
- ✓ Table tennis
- ✓ Parking

Prices: from 75 euros per night

Photo gallery

Thermal hotel Julija (Slovenia)

Termalni hotel Julija je toliko više od običnog wellness hotela, to je svet u malom. Ovaj novi slovenački resort pruža neograničene mogućnosti za odmor koji izaberete: aktivan i energičan ili razmažen i opušten. Odlučili smo da pomerimo granice tradicionalnog dizajna i ostvarimo viziju budućnosti estetike, komfora i ekološki svesnog luksuza. Spakujte svoje kofere i osetite novu inspiraciju za izabrane.

Hotel sadrži 50 premium soba i apartmana. Naše sobe su prostrane i elegantne, sa toplim osvetljenjem koje se stapa sa nebeskim plavetnilom i bogatim zelenilom okruženja. Svaka soba ima balkon, besplatan wi-fi internet, satelitske kanale, kupatilo sa masažnom kadom, kozmetikom, bade-mantil i papuče, bogato opremljeni mini-bar i hipoalergijske pokrivače. Doživite romantično veče sa svojim partnerom ili partnerkom u privatnom Spa apartmanu, sa personalnom saunom i vodenim krevetom.

Sadržaji

- ✓ Otvoreni i zatvoreni bazeni
- ✓ Masažni bazeni
- ✓ Finska sauna
- ✓ Parno kupatilo (Rimska sauna)
- ✓ Tursko kupatilo
- ✓ Sanarium (aromatična sauna)
- ✓ Slana sauna
- ✓ Personalni spa
- ✓ Massaže
- ✓ Tretmani lepote (sa Babor expertima)
- ✓ Teretana
- ✓ Tereni za tenis i squash
- ✓ Sunčana terasa
- ✓ Solarijum

Cene: od 179 eura za noćenje

Thermal hotel Julija is so much more than a wellness hotel, it is a world of its own. Located in Slovenia, this brand new resort offers unlimited possibilities both for an active holiday and for pampering all your senses in its exceptional spa centre. Let us

welcome you with a glass of sparkling champagne and offer you an unforgettable experience. Once you have experienced a stay in Julija's hotel, we promise you will never want to stay anywhere else.

Rooms

The hotel offers 60 premium single, double rooms and suites. Spacious and elegantly designed, each rooms is equipped with balcony , free wi-fi, satellite channels, deposit box, bathroom with a massage bathtub, free toiletries, bathrobes, mini-bar and hypoallergenic bed towels. Experience a romantic evening with your partner in the private Spa Suite with a personal steam room and water bed.

Facilities

- ✓ Indoor and outdoor pools
- ✓ Hot thubs
- ✓ Finnish sauna
- ✓ Steambath (Roman sauna)
- ✓ Turkish sauna
- ✓ Sanarium (Aromatic sauna)
- ✓ Salty sauna
- ✓ Personal spa
- ✓ Massages
- ✓ Beauty treatments (with Babor experts)
- ✓ Gym
- ✓ Squash and tennis courts
- ✓ Sun terrace
- ✓ Solarium

Prices: from 179 euros per night

Photo gallery:

Bakin med (Grandma's honey)

Opis proizvoda

Poslušajte Bakin savet i zasladite dan medom.

Najslađe što život daje – teglice tečnog zlata, koje kao da je usisalo same zrake sunca. Iz duge porodične pčelarske tradicije stiže nam *Bakin med*, novi proizvod vrhunskog kvaliteta. Proizvodnja prati tradicionalnu Bakinu recepturu u kombinaciji sa savremenom tehnologijom, i doseže najviše standarde kvaliteta.

Prva serija našeg meda dobila je priznanje za novi proizvod na *28. Internacionalnom Sajmu meda i okupljanju pčelara* u Budimpešti, Mađarskoj.

Zemlja porekla: Srbija

Cena: 500 RSD (za 100g)

Description

Follow Grandma's advice and taste your day sweeter with honey.

The life's sweetest - jars of liquid gold capturing the reys of sunlight. Following the long tradition of a honey-making family, Bakin med is a novel product of top quality. Processing follows the traditional recepies of our grandma incorprorating contemporary knowledge, to attain the highest standards of quality.

The first series has been akcnowleged by a new-comer reward at the *28th International Honey Fair and Bee-Keepers Meeting* in Budapest, Hungary.

Country of origin: Serbia

Price: 500 RSD (per 100 g jar)

Melissa honey

Opis proizvoda

Melissa je grčka reč za medonosnu pčelu. Mi prikupljamo dragocene pčelinje kapi i pružamo ih vama u svoj njihovoj čistoći. Želimo da podelimo sa vama iskustvo užitka u kvalitetnom grčkom medu.

Naši proizvodi su rezultat procesa pažljive kombinacije dobrih tradicija i modern tehnologije, tako da od svega iskoristimo ono najbolje. Rezultat – ukusni i osnažujći med pune biljne arome. Grčka leta neograničenog sunca i bogato rastinje Mediterana garantuju visok kvalitet i vaše zadovoljstvo.

Zemlja porekla: Grčka

Cena: 169 RSD (za 100g)

Description

Melissa is the Greek word for honey bee. We collect the precious amber drops and give them to you in all their purity. We want to share the experience of enjoying quality honey from Greece.

Our products are a result of a process of careful combination of good traditions and modern technologies, put to their best. Results – tasteful and invigorating honey of full herbal aroma. The Greek summers with unlimited sun and the rich Mediterranean flora guarantee high quality and your enjoyment.

Country of origin: Greece

Price: 169 RSD (per 100g jar)

Nektar honey

Opis proizvoda

Dragocene kapljice ćilibara stižu iz srca srpske prirode. Mi ih dajemo vama, u njihovom izvornom i prirodnom stanju. Naš med ne zovemo organskim, jednostavno prirodnim.

Procese proizvodnje održavamo što jednostavnijim, da očuvamo izvorni kvalitet meda. Košnice se nalaze u strogo prirodnom okruženju, gde malo ljudi živi i gde nema izvora zagađenja. Ovo nam garantuje med izuzetne čistote, zlaćane boje i bogate cvetne arome.

Zemlja porekla: Srbija

Cena: 165 RSD (za 100g)

Description

Precious drops of amber come from the heart of Serbian nature. We give them to you, making sure they are in their original and natural state. We do not call them organic, simply natural.

We keep the production process as simple as possible, to preserve the original quality of the honey. The beehives are kept in strictly natural surroundings, where few people live, and free from all toxins. This ensures our honey's clarity, golden colour and a rich flowery aroma.

Country of origin: Serbia

Price: 165 RSD (per 100g jar)

Thimari Premium honey

Opis proizvoda

Ugodite sebi hranom starih grčkih bogova. Donosimo vam *ambrosiju* naglašene čistoće i voćnog ukusa sa pašnjaka sunčanog Krita. Procesi obrade su u skladu sa najvišim međunarodnim standardima, dajući proizvode koji su 100% prirodni.

Med od majčine dušice je najpoznatiji od grčkih pčelarskih proizvoda i favorit svih poznavalaca. Naši proizvodi su prepoznati na *Kraljevskom poljoprivrednom sajmu* u Torontu, Kanadi, gde su nagrađeni zlatnom plaketom za vrhunski kvalitet u 2014. godini.

Zemlja porekla: Grčka

Cena: 489 RSD (za 100g)

Description

Endulge yourself with the food of ancient Greek gods. We bring you ambrosia with distinct clarity and a fruity flavour from the pastures of sunny Crete. The processing of honey is in accordance with the highest international standards, rendering a 100% natural products.

Thyme honey is the most famous of all the Greek honeys and the favorurite of all connoisseurs. Our products have been recognized at The Royal Agricutlural Fair in Arles, France and received a golden ribbon for premium quality in 2014.

Country of origin: Greece

Price: 489 RSD (per 100g jar)

VIII. Appendix VIII: Factor analyses of the scales

1. State-trait anxiety inventory for adults

Table 8.1: Total variance explained

Total Variance Explained						
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1.00	7.82	39.12	39.12	7.82	39.12	39.12
2.00	1.54	7.72	46.84	1.54	7.72	46.84
3.00	1.31	6.53	53.37	1.31	6.53	53.37
4.00	1.18	5.88	59.25	1.18	5.88	59.25
5.00	0.98	4.91	64.16			
6.00	0.86	4.30	68.46			
7.00	0.78	3.90	72.37			
8.00	0.69	3.44	75.80			
9.00	0.64	3.20	79.01			
10.00	0.57	2.85	81.85			
11.00	0.51	2.54	84.39			
12.00	0.49	2.47	86.86			
13.00	0.47	2.33	89.19			
14.00	0.45	2.25	91.44			
15.00	0.42	2.08	93.52			
16.00	0.36	1.80	95.33			
17.00	0.30	1.49	96.81			
18.00	0.26	1.31	98.12			
19.00	0.20	0.98	99.09			
20.00	0.18	0.91	100.00			

Extraction Method: Principal component analysis.

Table 8.2: Component matrix

	Component			
	1.00	2.00	3.00	4.00
I feel pleasant.			0.35	0.76
I feel nervous and restless.	0.67	0.31		
I feel satisfied with myself.	0.68	-0.33		
I wish I could be as happy as others seem to be.	0.58			
I feel like a failure.	0.61	-0.38		0.37
I feel rested.	0.52			
I am "calm, cool, and collected".	0.33	0.48	0.54	
I feel that difficulties are piling up so that I cannot overcome them.	0.64			
I worry too much over something that really doesn't matter.	0.51	0.55		
I am happy.	0.79			
I have disturbing thoughts.	0.57			
I lack self-confidence.	0.66			
I feel secure.	0.74			
I make decisions easily.	0.51		0.31	
I feel inadequate.	0.69			
I am content.	0.82			
Some unimportant thought runs through my mind and bothers me.	0.57	0.51		
I take disappointments so keenly that I can't put them out of my mind.	0.77			
I am a steady person.	0.59		0.44	
I get in a state of tension or turmoil as I think over my recent concerns and interests.	0.71		-0.32	

2. Self-esteem scale

Table 8.3: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1.00	5.47	34.20	34.20	5.47	34.20	34.20
2.00	1.91	11.96	46.16	1.91	11.96	46.16
3.00	1.52	9.48	55.64	1.52	9.48	55.64
4.00	1.09	6.79	62.43	1.09	6.79	62.43
5.00	1.02	6.40	68.84	1.02	6.40	68.84
6.00	0.91	5.67	74.50			
7.00	0.78	4.85	79.36			
8.00	0.69	4.31	83.67			
9.00	0.55	3.44	87.11			
10.00	0.39	2.46	89.57			
11.00	0.37	2.28	91.85			
12.00	0.34	2.10	93.95			
13.00	0.31	1.94	95.89			
14.00	0.26	1.64	97.53			
15.00	0.21	1.29	98.83			
16.00	0.19	1.17	100.00			

Extraction Method: Principal Component Analysis.

Table 8.4: Component matrix

	Component				
	1.00	2.00	3.00	4.00	5.00
I tend to devalue myself.	0.79				
I am highly effective at the things I do.	0.39			-0.61	-0.33
I am very comfortable with myself.	0.70				
I am almost always able to accomplish what I try for.		0.51			
I am secure in my sense of self-worth.	0.78				0.36
It is sometimes unpleasant for me to think about myself.	0.46		-0.39		
I have a negative attitude toward myself.	0.73		-0.31		
At times, I find it difficult to achieve the things that are important to me.	0.43	0.70			
I feel great about who I am.	0.80				-0.33
I sometimes deal poorly with challenges.		0.40		0.50	0.32
I never doubt my personal worth.	0.77				0.41
I perform very well at many things.	0.52		0.63		
I sometimes fail to fulfill my goals.		0.81			
I am very talented.	0.36		0.76		
I do not have enough respect for myself.	0.80				
I wish I were more skillful in my activities.	0.58			-0.47	0.42

Extraction Method: Principal Component Analysis.

3. Positive and Negative Affect Schedule

Table 8.5: Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1.00	5.14	25.68	25.68	5.14	25.68	25.68
2.00	3.74	18.70	44.38	3.74	18.70	44.38
3.00	1.80	8.98	53.36	1.80	8.98	53.36
4.00	1.23	6.14	59.49	1.23	6.14	59.49
5.00	1.10	5.49	64.98	1.10	5.49	64.98
6.00	0.88	4.39	69.37			
7.00	0.77	3.83	73.20			
8.00	0.70	3.49	76.69			
9.00	0.60	2.99	79.68			
10.00	0.57	2.85	82.54			
11.00	0.55	2.77	85.30			
12.00	0.51	2.57	87.88			
13.00	0.45	2.26	90.14			
14.00	0.40	1.99	92.13			
15.00	0.37	1.83	93.96			
16.00	0.32	1.62	95.59			
17.00	0.26	1.30	96.89			
18.00	0.25	1.25	98.14			
19.00	0.20	1.01	99.15			
20.00	0.17	0.85	100.00			

Extraction Method: Principal Component Analysis.

Table 8.6: Component matrix

| | Component | | | | |
	1.00	2.00	3.00	4.00	5.00
interested	-0.37	0.53	0.40		
distressed	0.79				
excited		0.66			-0.48
upset	0.76	0.35			
strong	-0.37	0.43	-0.40	-0.36	0.31
guilty	0.50			-0.48	
scared	0.65	0.40	0.38		
hostile	0.41		-0.40		0.37
enthusiastic	-0.32	0.65			
proud	-0.32	0.65	-0.47		
irritable	0.48		-0.54		
alert	-0.59			0.33	
ashamed	0.38	0.30	0.57		
inspired	-0.41	0.69			
nervous	0.67	0.40			
determined	-0.52	0.42			
attentive	-0.44	0.38			
jittery	0.67			0.36	
active	-0.31	0.49		0.55	
afraid	0.50	0.30			0.47

4. Individualism – collectivism scale

Table 8.7: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1.00	3.51	21.92	21.92	3.51	21.92	21.92
2.00	2.79	17.41	39.33	2.79	17.41	39.33
3.00	1.69	10.54	49.87	1.69	10.54	49.87
4.00	1.31	8.17	58.04	1.31	8.17	58.04
5.00	1.23	7.67	65.71	1.23	7.67	65.71
6.00	1.06	6.60	72.31	1.06	6.60	72.31
7.00	0.86	5.38	77.68			
8.00	0.67	4.16	81.84			
9.00	0.63	3.94	85.79			
10.00	0.55	3.45	89.24			
11.00	0.47	2.94	92.18			
12.00	0.35	2.20	94.38			
13.00	0.28	1.76	96.13			
14.00	0.26	1.64	97.77			
15.00	0.21	1.31	99.09			
16.00	0.15	0.91	100.00			

Extraction Method: Principal Component Analysis.

Table 8.8: Component matrix

	Component					
	1.00	2.00	3.00	4.00	5.00	6.00
I'd rather depend on myself than others.		0.68				-0.51
I rely on myself most of the time; I rarely rely on others.		0.75		0.34		-0.31
I often do "my own thing."			-0.41	0.49	-0.50	
My personal identity, independent of others, is very important to me		0.40		-0.62		
It is important that I do my job better than others.	0.46	0.61		-0.32		
Winning is everything.		0.65				
Competition is the law of nature.		0.70				
When another person does better than I do, I get tense and aroused.		0.35	0.51		0.50	
If a coworker gets a prize, I would feel proud.	0.74					
The well-being of my coworkers is important to me.	0.56		-0.39		0.48	
To me, pleasure is spending time with others.	0.61					0.31
I feel good when I cooperate with others.	0.78					
Parents and children must stay together as much as possible.	0.61		0.40		-0.35	
It is my duty to take care of my family, even when 1 have to sacrifice what I want.	0.60		0.38			-0.37
Family members should stick together, no matter what sacrifices are required.	0.65		0.37	-0.37		
It is important to me that I respect the decisions made by my groups.	0.45		0.44	0.45		

Biography of the candidate

Marija Branković graduated at the Faculty of Philosophy in Belgrade. She received an award for the best graduation thesis in the field of psychology in Serbia (2009) from Katarina Marić Fund. Since 2011 she is working as a Teaching Assistant at the Faculty of Media and Communications, Singidunum University, teaching courses in Social psychology and academic skills. She is also a graduate philologist of Scandinavian languages and literature (Faculty of Philology in Belgrade) and has an advanced certificate in Rational-emotive and cognitive-behavior therapy. She has been awarded a Borislav Lorenc Foundation grant as well as a grant from the European Association of Social Psychology for research visits to university centra in the Netherlands and Germany. She also attended the prestigious summer school of the European Association of Social psychology in 2016. As a researcher, she participated in projects "From inclusive identities to inclusive societies" and "Building regional excellence in social identity research" funded by the Regional Research Promotion Programme (RRPP). With the project "Argumentation in the educational context", she took part in Development programme for social science researchers of the Ministry of Education and Science of Republic of Serbia. She also took part in the project "Women and leadership" (sponsored by USAID and IREX) and "Research project on human values and belief in just world" (in cooperation with Federal University of Paraíba, Brasil). She authored a number of articles and conference talks at regional and international conferences. Her research interests focus on terror management strategies, self and social identifications, persuasion and argumentation. She is a member of the International Society of Political Psychology and European Association of Social Psychology.

Изјава о ауторству

Име и презиме аутора Марија Бранковић

Број индекса   4П10/3

Изјављујем

да је докторска дисертација под насловом

Стратегије психолошке одбране од страха од смрти

- резултат сопственог истраживачког рада;
- да дисертација у целини ни у деловима није била предложена за стицање друге дипломе према студијским програмима других високошколских установа;
- да су резултати коректно наведени и
- да нисам кршио/ла ауторска права и користио/ла интелектуалну својину других лица.

Потпис аутора

У Београду, 25. VIII 2016.

_____

Марија Бранковић

Изјава о истоветности штампане и електронске верзије докторског рада

Име и презиме аутора: Марија М. Бранковић

Број индекса: 4П10/3

Студијски програм: психологија

Наслов рада: Стратегије психолошке одбране од страха од смрти

Ментор: доц. др Ирис Жежељ

Изјављујем да је штампана верзија мог докторског рада истоветна електронској верзији коју сам предао/ла ради похрањена у **Дигиталном репозиторијуму Универзитета у Београду.**

Дозвољавам да се објаве моји лични подаци везани за добијање академског назива доктора наука, као што су име и презиме, година и место рођења и датум одбране рада.

Ови лични подаци могу се објавити на мрежним страницама дигиталне библиотеке, у електронском каталогу и у публикацијама Универзитета у Београду.

Потпис аутора

У Београду, 25. VIII 2016.

_____

Марија Бранковић

Изјава о коришћењу

Овлашћујем Универзитетску библиотеку „Светозар Марковић" да у Дигитални репозиторијум Универзитета у Београду унесе моју докторску дисертацију под насловом:

Стратегије психолошке одбране од страха од смрти

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која је моје ауторско дело.

Дисертацију са свим прилозима предао/ла сам у електронском формату погодном за трајно архивирање.

Моју докторску дисертацију похрањену у Дигиталном репозиторијуму Универзитета у Београду и доступну у отвореном приступу могу да користе сви који поштују одредбе садржане у одабраном типу лиценце Креативне заједнице (Creative Commons) за коју сам се одлучио/ла.

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Потпис аутора

У Београду, 25. VIII 2016.

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Марија Бранковић