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Radicalization and Mass Violence from a Beckerian Perspective: Conceptual and Empirical Considerations

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Abstract

This paper considers the conceptual and empirical merits of Ernest Becker's analysis of radicalization and mass violence. Starting with several cases showing a clear link between exposure to traumatic events and violence, Ernest Becker's idea that mass violence should be understood as an attempt to overcome the fear of death is examined in the light of recent experimental social psychological research, field research on the attitudinal effects of threatening situations, clinical modeling of the relation between fear and anger, and insights from neuroscience. Becker's ideas, in conjunction with empirical research, may contribute to an understanding of how humans can behave under extreme circumstances.

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Introduction

> "The logic of killing others to affirm our own life unlocks much that puzzles us in history, much that with our modern mind we seem unable to comprehend..."
>
> Ernest Becker (1975), *Escape from Evil, p.110*

In the night of 10-11 March 2012, US sergeant Robert Bales left his compound in Kandahar province of Afghanistan to walk to nearby villages, to enter unannounced in three houses, and to kill 16 innocent civilians inside and leave several others severely wounded. Many of the victims were murdered by a single shot in the head. Bales had also attempted to burn his victims to cover the evidence. It should be stressed that the villagers were not involved in the war. In fact, 9 of the victims were children including 4 girls under six.

As the incident fueled outrage across Afghanistan, the US government was quick to put Bales on trial. Inevitably, the conditions under which Bales had committed his horrendous act played a major part in the discussion (see e.g. Johnson, 2012). John Browne, Bales' lawyer, denied that a marital conflict had caused the stressful state in which Bales carried out his deeds. But importantly, there seemed to be consensus that an incident the day before the shooting, in which a fellow soldier lost a leg, played a major part. Many analysts also emphasized that this stressful event came after multiple, some unwanted, tours in Iraq and Afghanistan, in which Bales was exposed to considerable violence, anxiety, and injury. This background, together with the severe injury of his follow soldier the day before the incident, and a not-yet mentioned use of alcohol just before the shootings, is generally thought to have contributed to the mass killing.

Excessive violence following exposure to traumatic events as observed in the Bales case is not uncommon. In fact, records of many war crimes cases reveal a similar temporal structure, beginning with exposure to an extremely frightening or traumatic event and

involving an almost mystical transformation in which seemingly ordinary people become either brutal killers or condoning bystanders (Lifton, 2011). The Abu Graib abuses are a case in point. According to witnesses, one of the ring leaders, Charles Graner, showed significant personality changes and a shift towards violence following traumatic experiences as a prison guard during the first Gulf war, changes and a shift that would culminate in the well reported-sadism of the Abu Graib abuses (Lieberman & Morain, 2004). There is also the My Lay massacre of 1968 whereby hundreds of innocent Vietnamese civilians were brutally murdered by American marines. In reflecting on these and other incidents, a former commander of the South Vietnamese army shares with the readers of *Newsweek* (2000):

> You could say that we killed innocent people. But they also killed us. For our survival, we had to shoot. It's a very delicate matter, who is VC, who isn't. Take Lieutenant [William] Calley at My Lai. [Calley was court-martialed by the U.S. Army for instigating a massacre at My Lai in March 1968 in which 504 unarmed Vietnamese were killed.] I can understand [how] that happened. Calley tried to get revenge for the deaths of his troops.

And clearly, war crimes nor the link between traumatic events and excessive violence are constrained to American military cases or to individuals and small groups. In virtually every war, there are cases where the military gets involved in the apparent indiscriminate killing of civilians following repeated exposure to traumatic violence. The most recent act of genocide in Europe, the killing of several thousand Bosnians in Srebrenica provides a telling example. Moreover, individual trauma experiences may be so broadly shared that such experiences help shape political movements that seek to change society by violent means, with the WW I veterans that formed that National Socialist movement in

Germany as a key example. Finally, politicians often make use of real or imagined trauma to mobilize support for aggressive action against politically dissimilar others. This can, for instance, be easily observed in two of the most recent cases of genocide, in Rwanda, and in former Yugoslavia just after the break-up.

Few scholars have contributed to a comprehensive theoretical understanding of the link between trauma and violence as Ernest Becker (1971, 1973, 1975). One can find insightful passages in his *Birth and Death of Meaning* and *The Denial of Death*. But it is *Escape from Evil* that contributes most to our understanding of why slaughtering in general occurs, why mass violence occurs, and to our understanding of the ways in which phenomena such as trauma, grief, and death anxiety, are related to mass slaughter and mass violence. The present article considers the conceptual and empirical implications of Becker's thinking on mass violence for our understanding of incidents and episodes such as those described above. What does Becker say about e.g. sergeant Bales' behavior? And does Becker's work still hold now that empirical developments, instigated by terror management theory, but also by recent clinical and neuropsychological efforts, have enabled a more fine grained understanding of the psychological and neurological mechanisms involved in the link between trauma and violence?

Escape from Evil: Becker's Perspective on Mass Violence

My focus is specifically on Becker's explanation for the occurrence of mass violence. Despite this focus on mass violence, and its relation to death anxiety, the basic assumption in Becker's analysis is actually much less gloomy. This basic assumption is that humans want to live, and to live a good life and to seek prosperity. Indeed, as we will see below, there is great irony in the fact that, to paraphrase a quote from the documentary *Flight from Death*

(http://www.flightfromdeath.com/), in an effort to live a good life, and to escape from evil, humans are actually creating the greatest evil.

Thus, Becker assumes that humans, like all other animals, are endowed with an instinctive desire to live, culminating in our efforts to seek joy, prosperity, and self-actualization. But as there is death, and humans are the only animals that have a sufficiently developed sense of self and the world to know that it is an inevitable fate for all, an all-encompassing obstacle blocks our ways. The primitive already sought to overcome this obstacle by means of rituals. Rituals are conceived by Becker as instruments to transfer the power of life and to renew nature, yielding a sense that man is in control of nature and destiny. Reality may dictate otherwise, but through these rituals and the associated feelings of being in control, a sense of mastery over one's life, and importantly, over one's death, is obtained.

Critically for our understanding of mass violence, Becker has posited that the rituals revolve around antagonisms: antagonisms between humans and nature, and antagonisms between (kin) groups. This dualism helps to differentiate between the special and the sacred, and the ordinary and the profane. In essence, then, ritual acts help to differentiate between what is special and sacred, and what is ordinary and profane, and through sacrifice to the sacred, the sacrificer and the community he or she serves transcend to become part of the sacred.

What is the relevance of this for mass violence? According to Becker, a direct way to obtain a sense of significance, to be part of the sacred, is to outperform others. This may be done in play, in competition, but all too often, according to Becker, it is done in a more zero-sum type of interpersonal interaction. i.e. aggression against others shows one's superiority and control. Despite the expansion of the communities in which we live and the technologies we use, the dynamics of violence have remained the same. We need to show

that our way of life is superior over others', as it critically helps to fuel our sense of significance, i.e. our sense that our life is more than our finite physical presence on earth. Violence, according to Becker, then, is a ritualistic attempt to overcome our fears of death by establishing a sense of self-worth through the slaughtering of others.

From a Beckerian perspective, incidents such as the killings by sergeant Bales, the abuses of Abu Graib, the May Lai killings, and the genocides of Srebrenica, Rwanda, and of course World War II, should thus be understood as attempts by the perpetrator(s) to reestablish feelings of equanimity and control through aggressing against often innocent others. Intuitively, I think this makes sense. In all the cases mentioned, there was considerable fear prior to the acts and there was a clear attempt to dominate through humiliation, and ultimately, the pretense of power. But intuition and science do not always coincide. In order to get a better insight in the scientific merits of Becker's analysis, a consideration of available research is required. Terror management theory is, of course, *the* first step.

A Terror Management Theory of Violence

Terror Management Theory (TMT; Greenberg, Pyszczynski & Solomon, 1986; Solomon, Greenberg, & Pyszczynski, 1991; Greenberg, Solomon, & Pyszczysnki, 1997) has gone beyond the analysis of Becker regarding aggression and violence, not so much by adding to the core of Becker's theory, but rather by translating the ideas in the language of experimental social psychology. The result is not only a theory that is, inevitably, as encompassing at Becker's, but also a theory that has come with a research paradigm that lives up to the high standards of rigor that the experimentation requires.

There is little need to elaborate on the conceptual underpinnings of this research paradigm because much of the ideas are directly derived from Becker's analysis reviewed

earlier, and there are also several excellent reviews provided elsewhere (Burke, Martens, & Faucher, 2010; Greenberg, 2012; Greenberg, Koole, & Pyszczynski, 2004). Suffice to state that like Becker, TMT argues that the dual nature of human being -being an animal that instinctively strives for survival yet also a spiritual being with a mind and a sense of self- creates the potential for paralyzing existential terror if not managed or regulated through a sense of being part of something larger, more meaningful, and more enduring than mere physical existence.

The experimental paradigm to test the ideas, the so-called mortality salience paradigm (Burke et al., 2010), is the key TMT innovation to Becker's theorizing. Participants are invited to participate in experiments whereby the experimental group is subtly reminded of death, and participants' changes in social perceptions and behaviors as a result of this reminder constitute the main issue of interest. The reminder of mortality is often induced by having participants write a couple of sentences that come to mind when thinking about death (relative to a neutral or a pain-provoking, but non-lethal event such as dental pain), but it has also been induced by subliminal priming of the word "dead" or "death" (Arndt, Greenberg, Pyszczynski, & Solomon, 1997), or having participants walk past a funeral parlor (Pyszczynski et al., 1996).

Many of the earliest studies on TMT focused on the effects of death reminders on the evaluation of similar and dissimilar others, and showed that mortality salience increased liking for similar others, but disliking for dissimilar others (Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989; Greenberg, et al., 1990). But if one applies a definition of aggression as "the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment, or deprivation," dislike *per se* is not an act of aggression. Only the first published TMT studies

by Rosenblatt, et al. (1989), whereby professionally trained judges and university students adopting the role of court judges were more likely to set higher bonds for an alleged prostitute following a death reminder, can be counted as direct evidence that mortality salience increases aggression.

Later studies have more explicitly focused on the effects of death reminders on aggression towards different minded others. Foremost, McGregor, et al. (1998) inventively created a new type of Milgram-Obedience study by registering the amount of hot sauce allegedly allocated to someone who criticized the in-group (in this case, the political ideology) of the participants, whereby participants were explicitly instructed that the critic had a strong distaste for spicy food. Of greatest interest, across several experiments, the amount of hot sauce allocated in the mortality salience condition was significantly greater than in the control condition, corroborating the idea that mortality salience can induce aggression towards ideologically dissimilar others. In more recent studies, this conclusion has been confirmed with more attitudinal rather than behavioral measures. (Pyszczynski et al., 2006)), for example, showed that mortality salience led participants in the US to accept extreme and even nuclear military tactics in the conflict with Iran, while it also led among Iranian students to greater acceptance of martyrdom missions against US targets. (Hirschberger, Pyszczynski, & Ein-Dor, 2010)) showed that mortality salience led Israeli participants to increase their support for a preemptively strike Iran with a nuclear arsenal. More studies showing similar results have been recently reviewed by (Jonas & Fritsche, 2013).

As a body, the studies corroborate the basic assumptions of TMT, and thereby corroborate the basic tenets of Becker's analysis: fear of death leads individuals to embrace their cultural worldviews and leads them to attempt to strengthen their position within their cultural groups. Ideologically dissimilar others thereby become an increased threat under

mortality salience conditions, and these conditions thus spark a tendency to aggress against those who threaten the validity of the cultural worldview or the position of the individual within that worldview.

Nonetheless, if the purpose of the analysis is not so much to find support for the basic propositions of the Beckerian tradition, but rather, to understand the relation between trauma and violence, the research leaves a number of questions unanswered. Foremost, it seems quite remarkable that a very intense, comprehensive and emotional case such as a war veteran who changes in personality and decides to kill innocent civilians, can be simulated using non-traumatized college students in a (mostly) safe environment of a psychological laboratory of a university. Are the underlying processes of the aggressive behavior by students in a mortality salience experiment the same as aggressive behavior by a traumatized war veteran? In other words, why do subtle death reminders and exposure to trauma lead to violence?

Mortality Salience and Aggression in Real Life

For many studying TMT, the terrorist attacks on New York and Washington DC of September 2001 turned out to be a pivotal moment. It led to the realization that the insights of Becker and of Terror Management Theory were of an unsuspected practicality (see especially Pyszczynski, Solomon & Greenberg, 2003). Many of the effects that were observed after the attacks, including increased prejudice, in-group pride, out-group derogation, had already been reported to occur in the labs where mortality salience studies were conducted. To the extent that there is indeed an overlap between the laboratory findings and people's response to terrorist attacks, the literature on the mortality salience effect should be considered an enormously valuable resource for counterterrorism policy makers. In particular, the research may contribute to an understanding of the many,

oftentimes unsuspected consequences of terrorist attacks, as well as to an understanding of the factors that make individuals and communities more or less vulnerable to terrorist attacks, thereby usefully informing efforts to design counterterrorism programs that focus on the strengths of the targets of terrorist attacks rather than the weaknesses of the perpetrators. This has been my impetus for using TMT as a framework for studying the psychological consequences of exposure to terrorist attacks, in military and civilian contexts. The military environment is characterized by frequent exposure to threatening events. In the current mission to fight global terrorism, the asymmetric nature of the conflict makes non-traditional warfare and psychological warfare in particular, an appealing tactic to be used by the smaller party against the larger party. Indeed, despite their dramatic loss using conventional military strategy during the first months of the US military campaign in Afghanistan, the Taliban have managed to reestablish themselves and pose a considerable menace, for more than a decade, as an insurgency movement using psychological terror as their main weapon (Bergen, 2013).

Effects of mortality salience documented in the laboratory should thus be comparable to the anxiety provoking terrorist attacks initiated by the Taliban. At this point, I am inclined to say that this can be observed. Following up on an early laboratory finding showing that fear of death leads Dutch participants to be more optimistic about the performance of their national football team against the traditional rival Germany, I, together with researchers from the Dutch military academy, were particularly interested in the way in which the threatening circumstances in Afghanistan would affect the institutionalized military collaboration between Dutch and German soldiers (Dechesne, Van den Berg, & Soeters, 2006).

A couple of years prior to the research, economic and political considerations had led to the plan to merge elements of the Dutch army into a joint force termed the 1GNC (the

first German Netherlands Corps). Up until the mission in Afghanistan, the 1GNC had performed quite well. But during the mission in Afghanistan, significant ruptures appeared in the military alliance. If one takes into account the finding that mortality salience increases optimism about the outcome of the matchup between Netherlands and Germany, this may not be particularly surprising. Specifically, fear may have led the Dutch military to strengthen belief in their cultural worldview (of which anti-German attitudes remain an integral part) thus undermining the performance of the alliance. We tested this idea by registering questionnaires asking about fear of death and willingness to collaborate among 1GNC military personnel who were either based in Kabul (the threatening circumstances) and Muenster, Germany (non-threatening circumstances), and we have found that: 1) fear levels were higher in Kabul; 2) willingness to collaborate internationally was lower in Kabul; and critically and consistent with TMT, 3) there was a negative relation between fear and willingness to collaborate in international context.

Another study conducted in a military context also provided evidence that in real life there is a relation between existential fear and more negative attitudes towards different minded others (Van den Berg, Dechesne, Soeters, & Duel, 2010). Apart from attitudes towards the German counterparts of the 1GNC, we also asked Dutch soldiers in a separate study about the attitudes towards the local population in Afghanistan. We asked these questions just prior to the mission and during the mission. We found that fear levels increased during the mission, while during the mission we also observed a more negative attitude towards the local population. Critically, we found that the changes in fear were a significant predictor of changes in attitudes towards the Afghan population, with greater increases in fear associated with greater negativity towards the local population. This is a critical finding if one takes into consideration that "winning hearts and minds" of the local population is a key part of the mission in Afghanistan. Yet, the finding shows that terrorist

attacks may have a negative impact on the willingness to attend to this crucial aspect of the mission.

The effects of terror exposure on attitudes are not restricted to the military. The London transit bombing provided the opportunity to assess the effects of a terrorist attack on civilians' attitudes, in particular attitudes towards UK security measures, politics, and society (as reported in Dechesne and Van Leeuwen, 2010). The days after the attacks of 7/7 2005, questionnaires were administered in the vicinity of the blast sites, asking participants questions about their level of shock (i.e. their level of peri-traumatic dissociation), and their attitudes towards UK counterterrorism measures, support for the current government, and British multicultural society. For the analysis, we differentiated between those who were shocked by the attacks from those who were not. Greater shock was associated with more positive attitudes towards harsh counterterrorism measures, echoing earlier laboratory findings. But also, and intriguingly, we found that among those who reported being shocked by the terrorist attacks, the representation of the attitudes differed from those not affected by the attacks. In particular, among those who were shocked by the attacks, we found significant correlations between support for harsh counterterrorism, support for the British government and then Prime Minister Tony Blair, and more negative attitudes towards multicultural Britain. For those not shocked by the attacks, attitudes towards counterterrorism and attitudes towards the multicultural society were found to be unrelated. Apparently, for those in a state of shock, the tendency to fiercely strike back after an attack is something closely tied to national identity issues. I believe this corroborates the ideas of Becker and TMT that existential threat leads one to embrace the identity and values associated with one's in-group and to fiercely counteract on those that threaten one's identity and values.

Combat related PTSD and the trauma-violence link

To be sure, the fact that laboratory findings regarding the mortality salience effect can be used to guide real life research on the effects of exposure to threatening situations on attitude change and social perception provides only circumstantial evidence that mortality salience and trauma effects are related. One needs a more detailed conceptual framework that outlines the relevant psychological operating mechanisms in order to obtain a better sense of the closeness of the two processes.

To that effect, work by Claude Chemtob and colleagues on anger regulation among veterans with post traumatic stress (Chemtob, Novaco, Hamada, Gross, & Smith, 1997) should be particularly informative. Starting from the observation that anger regulation constitutes a particularly salient challenge for war veterans, Chemtob et al. have develop a model that helps to better understand the relation between fear and anger, and the factors that are involved in anger management following fearful experiences. The model has three main assumptions, i.e. that 1) anger has three interrelated components: a cognitive component, an affective component, and a behavior component; 2) these components are activated as part of a "survival mode" of functioning; and 3) problems with anger regulation in PTSD are the consequence of "trauma-influenced regulatory deficits" in either the cognitive, affective, or behavioral components of anger, or a combination of these components (see Chemtob, et al., p. 18).

The "survival mode" of functioning referred to in the second assumption is described as the "hyperactivation of cognitive structures" in response to consciously or unconsciously perceived threatening situations (p.22). Reflecting the primary importance of survival, these cognitive structures are argued to be pre-emptive of other cognitive processing, and to be characterized by the primacy of pattern matching, a tendency to react quickly rather than to meticulously consider all available pieces of evidence before judging and acting, and a

threat-confirmation bias and threat vigilance that facilitates the recognition of the threat. The survival mode is further argued to put a considerable burden on arousal regulation capacities and to potentially undermine the effective functioning of these capacities; to be suppressed by normal cognitive functioning in the absence of a threat, but once activated, to entail a loss of self-monitoring and thereby a potential lack of introspective insight in the psychological operations of the survival mode.

At the heart of these psychological operations of the survival modes are linkages between fear structures and anger structures. A threatening situation is thought to consciously or unconsciously induce fear, which in turn activates the cognitive, affective, and behavioral components of anger. Chemtob et al. (1997, p. 31) have provided a schematic depiction of the relevant elements and their interconnections, which is provided here as Figure 1. Note that in the Figure, the relations between fear and anger components are bidirectional. Not only does fear lead to the activation of anger, but anger will also lead to the activation of fear.

The processes described in Figure 1 have considerable neurobiological plausibility. Firstly, the processes seem to fit well with Panksepp's distinctions among "brain systems" (Panksepp, 1998). Most notably, Panksepp has identified a "rage system", a pathway that connects the peri-aqueductal grey with the hypothalamus, the amygdala, and the cerebral cortex. This rage system is responsible for the generation of violence, whereby the separate components each play their unique role. In his seminal analysis of violence, the *better angels of our nature*, Steven Pinker (2011) describes these roles. The peri-aqueductal grey connects input from brain regions that regulate bodily sensations (pain, hunger, etc.) to motor programs associated with aggressive responses. The hypothalamus, serving to regulate emotional, motivational, and psychological states, partly controls this area. The hypothalamus, in turn, is modulated by the amygdala that plays a central role in the

signaling of fear and more generally connects brain systems for memory and motivation. Finally, the amygdala connects with the cerebral cortex, particularly the orbital cortex which integrates emotional experiences and memories into decisions on how to behave.

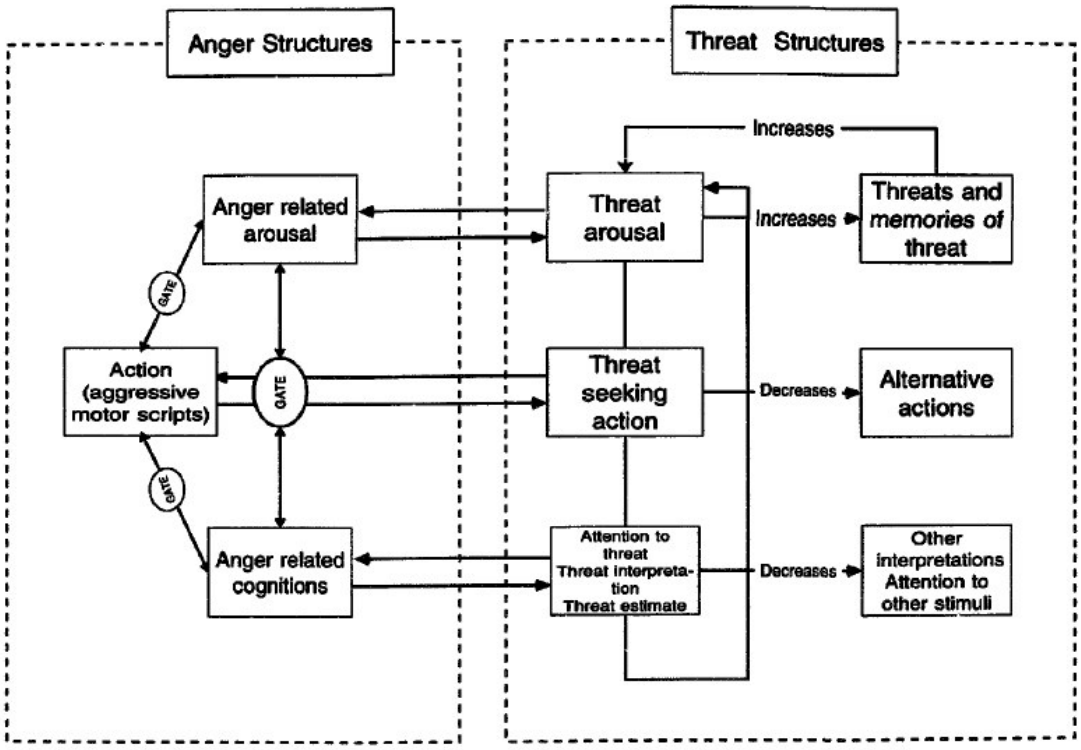

Figure 1. A regulatory model of posttraumatic anger.

Printed with permission of Claude Chemtob, personal communication, 1 Nov. 2013

The "rage system" is, in all its components, in close proximity to what Panksepp identifies as the "fear system". The fear system is also located in the peri-aqueductal grey, the hypothalamus, the amygdala, and the cerebral cortex. Panksepp stresses that the fear system and rage system are distinct, but also argues that their close proximity in the brain suggests that they interact, very much as suggested by Chemtob and colleagues. The proximity of the fear and rage system makes sense in the light of the natural inclination to

either fight or flee in response to a threatening situation (see Panksepp, 1998), whereby activation of the rage system primarily pertains to the fight tendency.

The close connection between the fear and the rage systems further strengthens the schematic depiction of the link between fear and violence provided by Chemtob and colleagues. Even the different components of anger, i.e. the cognitive, affective, and behavioral components, as depicted in the model, can be traced to the respective brain regions of the cerebral cortex, the amygdala and hypothalamus, and the peri-aqueductal grey. And one could argue then, that among those traumatically exposed to threatening situations, the amygdala is chronically signaling a threatening situation, which in combination with hypothalamic activity leads to the perception of fear, which in turn activates aggressive motor scripts, at least in the absence of activity in the cerebral cortex that could inhibit or reinterpret the threatening situation or generate an alternative response than aggression. In this light, the tragic case of US sergeant Robert Bales makes sense. Recent as well as repeated exposure to the threatening situation in Iraq and Afghanistan were involved. Deprived of the cognitive resources to fully make sense of the situation through the excessive use of alcohol, the fear and rage systems are likely to have been jointly activated, and to have culminated in aggressive behavior in an environment where it was highly inappropriate.

"Survival Mode" in a Terror Management Theory Context

The model thus helps us to understand why traumatic combat exposure often causes aggression regulation problems. But does it also help us to understand the effects of mortality salience in the typical college student?

There are remarkable parallels between Chemtob's process description and mortality salience effects. First, consistent with Chemtob's notions, there is evidence that

mortality salience leads to the hyper-activation of cognitive structures, i.e. what Arndt, Greenberg, and Cook (2002) have termed "accessibility of worldview-relevant constructs". Moreover, responses following mortality salience show structural similarities to those associated with Chemtob's survival mode. Specifically, the tendency to engage in pattern matching seems to converge with TMT's findings that mortality salience increases stereotypical thinking and preferences (Schimel, et al., 1999), and that mortality salience seems to generally induce a motivation to find patterns (Dechesne & Kruglanski, 2004). Furthermore, Chemtob's suggestion that trauma increases the tendency to quickly react rather than to engage in elaborate processing converges with research showing that mortality salience increases the likelihood of so-called primacy effects (Landau, et al., 2004), whereby early information disproportionally affects judgment. In addition, mortality salience induces accessibility of death related constructs (Arndt, et al., 2002) making the individual hyper-vigilant towards death-related stimuli, very similarly to the heightened vigilance described by Chemtob. Also, consistent with Chemtob's suggestion that the survival mode is suppressed by normal cognition functioning, there is evidence that this heightened accessibility of death related thought is only observed when consciousness is depleted of resources necessary to operate, or when mortality salience is induced by subliminal priming and hence is induced 'under the radar' of self-monitoring capacities (Arndt, et al., 1997). In the light of these striking parallels, the consistently observed absence of increased consciously experienced affective arousal following a mortality salience induction seems to be the only divergence with Chemtob's model.

Recent investigations have turned to the neuropsychological processes involved in mortality salience effects. Let us consider parallels in findings between this research and the neuropsychology of the fear-rage link. There is a study by (Quirin et al., 2012) that reports greater activity in the right amygdala, left rostral anterior cingulate cortex, and right caudate

nucleus, following exposure to death related as opposed to negative but death unrelated questionnaire items. Of interest, these findings closely resemble earlier ideas regarding the brain functioning of obsessive compulsives (Doidge, 2007). In particular, Doidge (2007) has proposed that obsessive compulsive disorder is characterized by an inability to stop the activation of the orbitofrontal cortex (which in this case is considered responsible for a "mistake feeling"), the cingulate gyris (which is assumed to activate anxiety feelings), and the caudate nucleus (which is assumed to stop the sense of having made a mistake). But also of interest, the identified brain regions appear to connect to the same brain regions as those involved in the trauma-violence link. That is, the cingulate gyris transmits to the orbitofrontal cortex, the amygdala and the hypothalamus. The caudate nucleus transmits to the orbitofrontal cortex and the hypothalamus. It should be stressed here that the field of social cognitive and affective neuroscience is still in its very early stages of development, and that I am not a particular expert on neuroscience. Hence, any interpretation should be made with caution here. Nonetheless, the experimental fMRI findings do seem to be close to those about the brain processes involved in the link between fear and anger. At the same time, and as a further note of caution, there have been several publications that report on the effects of exposure to death or panic related words and images on the brain, and the results are quite inconsistent, with different parts of the brain activated and some brain activation being attributed to the specific nature of the experimental set-up rather than to substantive psychological processes. For instance, (Han, Qin, & Ma, 2010) reported on brain activity following exposure to death related words relative to negative and neutral words. They found, among other findings, increased posterior cingulate activations following death-related words, but also less activation of the anterior cingulate cortex following death related words relative to negative words, thus undermining the findings by Quirin, et al. (2010). An

fMRI study (Gündel, O'Connor, Littrell, Fort, & Lane, 2003) on grief also reveals a plethora of activated brain regions, leading to the (rather uninformative) conclusion that grief:

> "is a distributed network of neural structures that subserve affective processes, mentalizing, retrieval of emotion-laden episodic memories, processing of familiar faces, visual imagery, automatic motor responses, autonomic regulation, and modulation/coordination of functions" (p.1951)

At present, then, it appears that neuropsychology has insufficiently advanced to be able to map well-defined psychological constructs onto a clearly demarcated map of the brain, to identify very specific brain regions associated with fear, death-anxiety, and its relation to violence.

Does Violence Help?

Beyond the specific neurocognitive mechanism involved in the relation between fear and violence, there is also the question of the effects of violence on fear. Does aggressive behavior reduce fear? The suggestion has been raised, for example by Chemtob et al, as they argue that angry displays can serve to create a sense of mastery in the face of death by suppressing feelings of helplessness. There is also fascinating research by Tom Pyszczynski and colleagues showing that overt expression of tension reduces subsequent biases (Pyszczynski, Greenberg, Solomon, Sideris, & Stubing, 1993) thus suggesting that motor responses (angry expressions) may help to de-activate cognitive-emotional conflicts. And, of course, on a theoretical level, Becker proposes that providing the opportunity to engage in "heroic" behavior, e.g. through aggression, helps to alleviate existential concerns.

In the mortality salience literature, there is a quite remarkable absence of attention to the actual effects of worldview defense. One early study by Greenberg et al. (1993) has shown that elevated levels of self-esteem avert the individual from experiencing anxiety in the anticipation of a painful shock. In addition, Harmon-Jones et al, (1997) have shown that heightened self-esteem is associated with attenuated levels of worldview defense after a reminder of death, suggesting that self-esteem indeed buffers against death related thought. But these findings do not shed light on the effects of aggression on fear. The closest finding within the mortality salience literature shows that participants in laboratory experiments, after having engaged in worldview defense following a reminder of death, exhibit less cognitive accessibility of death related construct relative to participants who are also reminded about death but who have been deprived of the opportunity to engage in worldview defense (Arndt, et al., 1997). In short, this finding suggests that worldview defense helps to reduce implicit concerns about death.

Yet, this finding pertains to an operationalization of worldview defense whereby there is no opportunity for participants to actually aggress. In Arndt et al.'s (1997) setup, participants are provided merely with the opportunity to express dislike. But that is something different from being provided with the opportunity to impose harm on someone else. At present, there is simply no research that shows that engaging in aggression helps to reduce fear, or fear of death in particular. There is pioneering research by Andy Martens and colleagues (Martens, Kosloff, Greenberg, Landau, & Schmader, 2007) on the psychological effects of engaging in violence in a "bug killing paradigm" whereby participants are encouraged to put bugs in a grinder. A recent study (Martens et al., 2007) has shown that those who expressed the least psychological distance between themselves and the bugs reported the highest degree of peri-traumatic dissociation, i.e. a reduction in self-monitoring capacities presumably in response to the inability to cope with

overwhelming information (similar to Chemtob et al.'s 'survival mode'). At a bare minimum, then, one could say engaging in killing brings about alternations in consciousness that involves an escape from the self. But clearly, there seems to be quite a field awaiting fruitful study regarding the inner psychological effects of engaging in aggression. This may also provide insights in the impetuses that may help to stop violence.

General Consideration Regarding Becker's Work

Further research is needed to obtain full insight into the anxiety buffering function of aggressive behavior and the inability of cognitive and affective neuroscience to clearly delineate the brain mechanisms involved in the link between fear and aggression. There is the risk of ending this article on a disappointing note. I started off by describing several tragic incidents of mass violence, i.e. incidents that seem to be an integral part of warfare, both in its execution and its build-up. Clearly the work of Ernest Becker (his work *Escape from Evil* in particular) seems highly suitable for an analysis of why these incidents occur. Further, Terror Management Theory has been a tremendous step ahead when it comes to the empirical investigation of Becker's ideas. But do we now know how violence, such as executed by sergeant Bales in Afghanistan, the troops involved in the My Lai massacre, or the largest massacre in Europe since WWII (in Srebrenica) erupts and how it can be stopped?

The quite extensive body of research that is available on the relation between fear and violence does provide us with important clues. First, empirical research on the mortality salience effects seems to suggest that subtle reminders of death lead to increased aggression against ideologically dissimilar targets. Second, research in Afghanistan and following the 7/7 London Transit Bombings of 2005 further affirm the applicability of variables derived from TMT and related research for the understanding of what happens when people are

confronted with threatening situations. Third, the convergence of experimental and real life findings makes it worthwhile to compare models of how fear and aggression relate in real life to mortality salience findings, with a model provided by Claude Chemtob and colleagues as a particularly useful framework for understanding this relation. Fourth, using this model, one can make inferences about the neuropsychological mechanisms involved in both the relation between fear and aggression in real life as well in the mortality salience paradigm. However, although neuroscience studies are now being conducted, there has yet to emerge a clear picture regarding these mechanisms.

Is it only a matter of time, then, before neuroscience will have developed the measurement techniques to uncover the validity of Becker's propositions regarding mass violence? Because the frameworks of Becker, TMT, but also less likely candidates, including Chemtob's fear-anger model, and insights into the proximity of "fear" and "rage" systems in the brain, seem to converge on several important dimensions, one might be inclined to give an affirmative answer. However, I believe that joint consideration of the frameworks also uncovers several dissonant features of Becker's (and TMT's) assumptions, exactly because of the similarities. Specifically, Becker's aim was to develop no less than an overarching depiction of humankind. He did so by putting the human striving for the heroic at the core of his analysis. The striving for heroism is assumed to be fuelled by the uniquely human existential conflict between the instinctive striving for self-preservation and the awareness of the inevitability of death.

Indeed, research on mortality salience effects suggests that subtle reminders of death have a significant impact on social behavior. But, frankly, that is quite far removed from showing that the idea of death is the mainspring of all human activity. And of greater importance, to the extent that the behaviors that are observed in social psychological laboratory resemble behaviors typically documented in crisis situations such as during or

after combat or after a terrorist attack, one may wonder whether showing that reminders of death influence social behavior implies that social behavior in general originates from the fear of death. Rather, mortality salience effects may bring to the front behavior that is typical for crisis situations rather than for everyday human life. In other words, mortality salience may induce a "survival mode" of processing and behaving, that is actually quite atypical (and maladaptive as indicated by the problems of combat veterans) for everyday life. The idea of death, then, may disturb everyday functioning rather than serving as the mainspring of human activity.

If mortality salience effects do not portray everyday life, and if everyday life is about meaning and heroism, what then is the relation between death and the search for meaning and heroism? One may even suspect that, following the logic of the previous sentence, death would lead to a loss of interest in the striving for meaning and heroism. Clearly, the studies of mortality salience show the opposite. Reminders of death increase the willingness to defend one's cultural worldview and to aggress against worldview threats. But Chemtob's work on the link between fear and violence, and the neurological insights in the proximity of the "fear system" and the "rage system", may hint towards a different interpretation of this effect. From these perspectives, the rage following fear of death may not be the result of threats to one's worldview, but rather, worldview defense may provide a socially acceptable way to channel one's rage that in turn is automatically instigated by fear.

Hence, the causal chain of the mortality salience effect may be different than the one proposed by Becker and TMT. Rather than mortality salience causing worldview allegiance causing aggression against dissimilar others, it may well be that mortality salience activates rage which is then channeled into aggression against worldview violators. In other words, threats to one's worldview may not be the cause of rage, but rather rage might be the cause of worldview defense. If one follows this latter interpretation, the context in which

worldview defense should be given far greater attention than it has received so far in the literature. One could hypothesize that only if it is considered a legitimate "excuse" to channel one's rage, worldview defense is likely to occur. Indeed, research shows that politically liberal participants do not engage in increased worldview defense following a death reminder, and salience of liberal political ideology reduces worldview defense under mortality salience. Further studies could lend further credence to the "channeling of rage" interpretation of worldview defense.

A second implication of the suggestion that the effects described by Becker and reported from TMT laboratories reflect atypical responses of people in crisis situations rather than reflect normal social functioning, is that theory and research on the mortality salience would be well informed by the vast literature on psychological responses to crises. Particularly since 9/11 and Katrina, there is a sizable body of research on this topic. One particularly important observation coming out of that body is that a fairly small amount of those exposed to traumatic events exhibit panic or psychological defense. (Bonanno & Diminich, 2013) have suggested that the vast majority are resilient and hence less likely to display any observable effects of exposure to threatening events. When applying this notion to the experimental effects of mortality salience, it may well turn out that only a limited portion of the participants in the mortality salience condition is responsible for the observed differences between experimental and control groups, whereas the vast majority in the mortality salience condition is actually unresponsive, or resilient, to the death reminders. The use of mixed model designs that combine both within-subject changes as well as between-subject manipulations of mortality salience may be useful to determine who responds to the exposure to the death reminder and who doesn't. This is also very important for fMRI studies on mortality salience effects. Without a priori selection of participants who

are "vulnerable" to the death reminders, there is likely to be considerable noise to obscure any significant observations.

A priori selection is not only of importance for fMRI studies, it is also of great importance for a better understanding of the effects of mortality salience. There are many responses to fearful stimuli (Bonanno & Mancini, 2012). Although rage may be a response to fear, "fighting" is only half, next to "fleeing", of what has traditionally been considered the behavioral repertoire in response to stressful events. And recent insights have further filled the repertoire. There is, of course, the "freezing" response. Taylor (2012) has also noted that women in particular are more inclined to response to stress by means of tending and befriending. Hence, research on people's responses to terror may not only be enriched by individual difference variables that help to predict whether one responds to a death reminder, but also to predict how one responds.

Conclusion

We may have come to a perhaps disappointing ending of this article. What has been suggested by Becker as a general depiction of the human condition may turn out to be a very good description of behavior in a rather specific situation, i.e. a situation where people are confronted with death. Clearly, as Becker said, we all have to deal with death. But that doesn't mean that the fear of death is necessarily an adequate explanation for all our behavior. The fact that a Beckerian analysis is particularly applicable to a rare case may disappoint fervent supporters of the Beckerian view of human life.

But at the same time, applying the insights of Becker to empirical scrutiny could still be of great value. Becker's ideas, together with the experimental findings of TMT, research on trauma, and neuroscience may ultimate bring us further to a fine-grained analysis of the factors and processes involved in mass killings. I believe that in the process of doing so, a

triangular research approach has emerged in which the validity of Becker's theorizing is not only assessed through experimentation but also through a consideration of cases in reality to which the theory applies. In this sense, the present contribution may not have supported Becker's hope for an all-encompassing framework for the social sciences and humanities, but by applying the triangular consideration of theory, experimental study, and case analysis, the present article may have contributed to the realization of an integration of the social sciences and humanities after all. An integration that, in all its modesty, may turn out to be best equipped to deal with some of the most pressing issues of our time, including the issue of the killing of innocent civilians in the service of dominance and fear of insignificance.

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