

## Cultural differences in the perception of psychological threat and compensation

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There are various kinds of psychologically threatening situations in our everyday lives. We feel threat from disruption of our modus operandi, belief or positive self-image. Therefore, psychological threat evokes psychological self-defense mechanisms with/without our awareness. Researchers have assumed that strong motivations exist behind managing psychological threat, and some of them have presumed that only one single core motive leads people to such behavior under psychological threat. Some theorists have claimed such motivations have evolved through evolutionary history of cognitive capacity of human being, e.g., Terror Management Theory (TMT; Solomon, Greenberg, & Pyszczynski, 1991).

Psychological threat prompts direct coping or compensation, e.g. increased effort after failing an exam. Likewise, if we are uncertain about something, we usually seek further information in order to understand our situation. When we agitate somebody, we will try to reconcile with him/her. However, we often cannot immediately deal with psychological threat in such direct ways, which are referred to as direct coping or compensation, and motives and feelings arising from psychological threat abide at the implicit level. Psychological threat consequently instigates indirect coping or compensation, that are sometimes referred to as fluid compensation (e.g., Steele, 1988; McGregor, Zanna, Holmes, & Spencer, 2001; Heine, Proulx, & Vohs, 2006). Such compensation, however, may not actually be subservient to solving the problem constituting the threat. Therefore, psychological threat penetrates almost every realm of our social lives, more than we expect. Theories regarding psychological threat and compensation have generated much research,

and have elaborated on the effects of psychological threat and the social environment in which it arises from, on our behaviors aimed at reducing it. In recent social contexts, psychological threat such as uncertainty threat and indirect coping toward it, have been the focus of much attention because psychological self-defense arising from it may be the cause for the sudden tide of global-wide racism, right wing extremism, and terrorism. For example, minorities who respond to uncertainty with instability and anxiety, may feel superiority over majority, and may condone violence toward the majority by their own peers (Doosje, Loseman & Van den Bos, 2013). In a laboratory experiment, participants primed with uncertainty threat showed a stronger preference for an essay bolstering transcendence of their ingroup, relative to one which depicts belittles them than the control group (Van den Bos, Poortvliet, Maas, Miedema, & Van den Ham, 2005). In a real-life social movement, recently in France, regions that have recently become less committed to religious virtues engage in active anti-immigrant campaigns, more so than regions that had diluted religious convictions from the start (Todd, 2016). Religion serves as a buffer for uncertainty perception because it institutes a solid world order for the believer, and hence it can keep him/her away from confusion. Therefore, Todd's analysis is consistent with psychological research focused on the association between uncertainty and extremism at the individual level (e.g., Doosje et al., 2013). As will be elaborated on later, similar results were obtained in other domains of psychological threat.

However, it is questionable whether these theories can validly apply to all of the world because most research have been conducted on Western individualistic samples by Western researchers, hence carry with it a heavy bias. Researchers need to investigate the cross-cultural validity of such theories on non-Western or collectivistic

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samples. In light of this problem, the goal of this article is to specify cultural differences in psychological threat perception across different types of psychological threat. For the above reasons, this review will discuss several major theories regarding psychological threat and compensation, and scrutinize them from the non-Western perspective.

The quantity and quality of specific types of social events vary with culture, implying that even if we encounter the same incident, our experience and feelings may differ in accordance to the culture in question, and such diversity has been considered to arise from life habits, lay theories, and societal institutions. In order to fit into a specific culture, people need to strictly observe cultural rules and customs to avoid negative social consequences, such as rejection, and these constraints lead them to perceive particular information to be psychologically threatening.

Furthermore, this paper will discuss whether each theory regarding psychological threat and compensation can explain cultural differences in psychological threat perception, although these theories were not formulated under the assumption that threat responses would vary with culture. This article mainly focuses on Individualism-Collectivism (IND-COL), and holistic versus analytical thinking as the explanatory frameworks. It will be assumed that European and North American people are individualistic, and Asians as collectivistic. IND-COL research have evolved over the last few decades, generating research into matters such as self-construal, perception and social behavior (e.g., Markus & Kitayama, 1991; see Oyserman & Lee, 2008, for a review). For example, Japanese are more sensitive toward social rejection than Americans (Hashimoto & Yamagishi, 2013), and hence, Japanese might perceive information indicating potential rejection as psychological threat more so than Americans. Furthermore, according to Nisbett, Peng, Choi and Norenzayan (2001), the cognition and thinking of East Asians are characterized by holistic and dialectic style, and those of Westerners by analytic. This cultural dimension also influences the ways in which one may perceive specific information. For example, East Asians are more tolerant toward contradiction, and hence they are more likely to accept an ambivalent self-image, whereas Westerners prefer a more consistent one (Spencer-Rodgers, Boucher, Mori, Wang, & Peng, 2009). Therefore, Western-

ers may experience a more intense aversion toward conscious awareness of behavioral inconsistency than East Asians. As stated above, IND-COL and holistic vs analytical thinking have been important frameworks for cross-cultural research of psychological threat, and it fittingly plays an important role in this review article.

## Ego threat and self-enhancement

The term “self-esteem” usually represents one’s positive or negative attitude toward the self as a whole. People have a need for self-esteem, and enhance it through various domains such as their own achievements or relationships with others (e.g., Heatherton & Polivy, 1991; Mahadevan, Gregg, Sedikides, & de Waal-Andrews, 2016). For example, Americans are sensitive toward their own accomplishments more so than Japanese and, at the collectivistic level, this self-enhancement tendency comprises everyday social interaction. Whereas Japanese readily accept negative feedback regarding their competence, the same never influences Americans’ own self-evaluation, at least as seen through explicit self-report (Heine, Kitayama, & Lehman, 2001; see Heine, Lehman, Markus, & Kitayama, 1999, for a review). Americans consequently experience situations which increase their self-esteem more frequently than Japanese (Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997). On the contrary, Japanese social contexts are collectively and historically constructed to promote reflection based on self-criticism. Therefore, Japanese are responsive toward their own failures more than Americans. In their studies, both Japanese and American participants judged an American’s success attainment would raise his/her self-esteem, more so than if the situation described were based on success of in a Japanese context. From the above, American social reality keeps their self-esteem high, and creates the upward spiral of self-esteem, but that of Japanese does not. Furthermore, the results of situations which decreases self-esteem are exceedingly important to understand cultural difference in psychological threat and compensation. Failure becomes more influential on self-esteem when the cultural context matches the subject’s cultural background. In other words, situations which suppress our self-esteem can be seen as the source of psychological threat, i.e., ego threat, whether a specific situation will be construed as ego threat differs by cul-

ture.

When people faced with ego threat pertaining to one specific domain of their self-concept, they compensate for it through self-enhancement in other unrelated domains. Brown and Smart (1991) indicated that self-evaluation regarding social attribution such as sincerity and kindness were emphasized among participants who received negative feedback on their intellectual equipment. A similar pattern was observed in a study involving a Japanese sample (Tabata & Ikegami, 2011). Furthermore, as Social Identity Theory implies (Tajfel & Turner, 1979), people can recover self-esteem not only through their own efforts, but also through confirming a subjective link between a valued group or category, and the self. Cialdini, Borden, Thorne, Walker, Freeman and Sloan (1976) demonstrated that undergraduates showed a stronger social identification with their victorious football team after they failed a test. According to Social Identity Theory's tenet regarding self-esteem, people who identify strongly with their ingroup can elevate self-esteem through outgroup derogation, and dispositional high self-esteem attenuates this type of self-enhancement, although not all research findings support this hypothesis (see Rubin & Hewstone, 1998, for a review). While much literature has presumed that people with high self-esteem have solid egos, and hence they do not show defensive reactions toward psychologically threatening events, dispositional high self-esteem prompts people to attack others who threaten their self-image (Baumeister, Smart, & Boden, 1996). In order to resolve these conflicting results, researchers advocate subcategorization of high self-esteem; fragile high self-esteem vs secure (e.g., Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003; Kerns & Paradise, 2002). Self-enhancement and self-defense are strong drives for social behaviors notwithstanding ambiguity of the function of dispositional self-esteem.

### Cultural differences in self-enhancement

A large body of literature has pointed out there are cultural differences in self-enhancement tendency. According to meta-analysis of Heine and Hamamura (2007), East Asians consistently showed weaker self-enhancement tendency than Westerners across procedures. From the view of Europeans and North Americans, those of collectivistic cultures are weak in self-enhancement tendencies. However, the cause of this is not the lack of

self-enhancement, but that culture restricts ways in self-enhancement, although self-enhancement is pancultural (Sedikides & Strube, 1997; Kurman, 2003; Sedikides, Gaertner, & Toguchi, 2003). While Japanese cultural norms coerce members to be modest, when in a situation in which they remain anonymous, they have been seen to make self-serving attributions in order to enhance and protect self-esteem (Kudo & Numazaki, 2003). People recognize socially acceptable self-enhancement strategies through cultural norms, which influence coping toward ego threat. Likewise, The Self-Concept Enhancing Tactician model (the SCENT model; Sedikides & Strube, 1997) assumed that people have multiple ways in self-enhancement, such as self-improvement and self-assessment for future positive self-image, or self-serving informational processing for immediate self-regard. Moreover, they usually choose the most appropriate strategy in accordance to the social context. People predict the effect of candid self-enhancement on their reputation, and hence they adjust their means to satisfy their need for self-esteem. The SCENT model also posits that people are most likely to enhance their self-image on personally important dimensions, and culture influences the importance of each dimension. Sedikides and Gregg (2008) used a metaphor that self-esteem is food for thought, and how to satisfy need for self-esteem differs by culture as do what people eat with culture. As the model predicts, whereas self-enhancement on independence dimensions are likely to be implemented in an individualistic culture, those related to loyalty are likely to be emphasized in collectivistic cultures (Hornsey & Jetten, 2005). Chinese enhance their self-esteem through the expression of modesty, but modesty does not drive self-enhancement among Americans (Cai, Sedikides, Gaertner, Wang, Carvallo, Xu, O'mara, & Jackson, 2011). This result indicates that adherence to cultural norms easily boosts self-esteem even if it induces overt self-effacement, and people simultaneously can avoid receiving a favorable evaluation as far as they engage in such socially acceptable self-enhancement.

### Cultural differences in compensatory self-enhancement

As for cultural differences in coping with ego threat, Japanese might tend to use direct strategies more than Americans. According to Heine, Kitayama, Lehman,

Takata, Ide, Leung and Matsumoto (2001), after confronting failure in a task, Japanese make more effort toward it than after success. This self-improvement motivation of Japanese can be interpreted as Japanese preference for direct coping toward ego threat, but this pattern was reverse with Americans, as failure in a task attenuated their motivation. From this, American reject negative self-relevant information to maintain a global positive self-image, and this self-defense steers them away directly compensating for ego threat. As a result, ego threat forces indirect coping among American. Likewise, East Asian traditional philosophy promotes the acceptance of contradictory information regarding self-evaluation, e.g., Chinese have ambivalent and dialectical self-esteem (Spencer-Rodgers, Peng, Wang, & Hou, 2004; Boucher, Peng, Shi, & Wang, 2009). They are less concerned about the consistency of positivity of their self-image, unlike Euro-Americans. This cultural difference in thinking might influence ways in coping toward negative self-evaluation.

Ego threat can cause changes in perception and behavior that are irrelevant to self-esteem. For example, Ego threat can evoke indirect compensation such as polarized fairness judgement, according to Miedemam, Van den Bos and Vermunt (2006). Their dependent variables are not directly associated with compensatory self-enhancement and self-improvement, relative to other studies previously described. If researchers gear their experiment toward eliciting more indirect coping toward ego threat rather than self-enhancement after failure, they may be able to attain results offering new insight toward cultural effects, ego threat, and compensation. Additionally, based on East Asian notions of socially directed self-enhancement (Hornsey & Jetten, 2005), people with collectivistic cultural orientation might exhibit more intense compensation under ego threat relevant to their sociality than individualists. Further research should address cross-cultural differences in an effect size of various types of ego threat on indirect coping. Like these studies, self-enhancement and compensation after ego threat are considered to be a pancultural psychological process. However, there are cultural differences in what is construed as ego threat, and how to recover self-esteem.

## Existential threat and Terror Management Theory

TMT is one of the most innovative and popular theories pertaining to psychological threat and compensation, and it sheds light on the psychological processes regarding death and death anxiety. According to the basic assumption of TMT, human beings acquired complex cognitive capacities during evolution, and these enabled them to think about their mortality, something which all the living organisms will eventually confront, but cannot predict without a high order intelligence (cf. Solomon et al., 1991; Landau, Greenberg, & Kosloff, 2010). However, this elaborated thought regarding our own mortality conflicts with our self-preservation instinct as an animal, and hence, death anxiety arises from it. We usually avoid thinking about our own mortality, and for this reason we keep our distance from death anxiety. However, when we are reminded about our mortality, it can then pose a psychological threat, i.e., existential threat, and evokes potential death anxiety. We engage in a variety of social behaviors aimed at obtaining symbolic or literal immortality through our cultural worldviews, or mask potential death with self-esteem, thereby we need to manage death anxiety. Cultural worldviews encompass implicit/explicit rules, standards, norms, traditions and values, and they are internalized into members of that culture. If people believe in their cultural worldviews, they will attain a feeling of immortality. More precisely, faith in one's culture brings about subjective order and meaningfulness into their lives. For example, Christianity offers the believer concepts related to life after death, such as heaven, and hence someone living in accordance with the Christian worldview is able to manage their death anxiety through this literal immortality, i.e. life after death. Furthermore, even if people do not believe in religious or supernatural concepts, their cultural worldview can also offer symbolic immortality. For instance, when identifying oneself with one's cultural group, s/he can symbolically survive in this world as part of a steadfast group, which will be carried on by their descendants even if they themselves cease to exist. In short, cultural worldview provides a meaningful place for everything in our lives, and the place for death is separate from the ultimate end. People, then, who hold faith in religious worldview are not likely to engage in defensive reactions after existential threat manipulation, because eminent

death will not pose psychological threat (Jonas & Fischer, 2006).

Cultural worldviews are shared reality created by humans, and hence people need information regarding the validity of their worldviews in order to mask their fragility, especially when people have a need to manage death anxiety. A large body of TMT research indicated that, after mortality salience induction, such as instructing participants to elaborate on their own death, they bolster and defend their cultural worldviews, and they subsequently may attack outgroup members because they do not share their cultural worldviews, threatening the verifiability of them. A typical index of how defensive one is toward their cultural worldview is to ask him/her to rate a pro-/counter-national opinion (Greenberg, Pyszczynski, Solomon, Rosenblatt, Veeder, Kirkland, & Lyon, 1990). If we accept negative opinions toward our nation, the reliability of cultural worldview of our nation is discounted, and then we become less able to reduce death anxiety. Contrary to this, positive opinions fortifies our cultural worldview, and mask our own mortality. Greenberg et al. (1990) primed American undergraduates to think about their death, and asked them to rate interviews in which the interviewee voices a positive, negative or ambivalent message regarding the USA. As a result, they displayed a more acute preference for pro-national opinions over counter-national. TMT researchers consider such cultural worldview defense as psychological coping toward existential threat. Besides reading about counter-national opinions, other events implying that the world is absurd, meaningless, or disorderly can threaten our cultural worldviews. For example, Van den Bos and Miedama (2000) showed existential threat intensified participants' negative reaction toward unfairness treatment that is contradictory to their belief in just world (BJW; Learner, 1980), i.e., cultural worldview.

### Self-esteem and death anxiety

In addition, TMT posits that self-esteem is an indicator of observance of cultural rules and standards, and it buffers death anxiety. Need for self-esteem and self-enhancement, therefore, arises from our innate fear of death. Thus, when one's self-esteem is dispositionally high or temporally boosted, information implying about one's own mortality does not bring about death anxiety, i.e., it does not pose an existential threat (e.g., Green-

berg, Solomon, Pyszczynski, Rosenblatt, Burling, Lyon, Simon, & Pinel, 1992; Greenberg, Pyszczynski, Solomon, Pinel, Simon, & Jordan, 1993; Harmon-Jones, Simon, Greenberg, Pyszczynski, Solomon, & McGregor, 1997). Furthermore, existential threat induces self-serving attributions to maintain self-esteem, and such an opportunity undermines the effect of threat manipulation (Mikulincer & Florian, 2002). This study supports the TMT assumption that existential threat enhances efforts to attain self-esteem (see Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004, for a review), although the research reviewed by Pyszczynski et al. (2004) did not focus on direct self-enhancement such as measuring changes in accomplishment in a task, or biased self-evaluation, as do ego threat research. However, some research offers evidence which does not support this anxiety buffer hypothesis. Dispositional high self-esteem cannot attenuate the effect of threat manipulation, but on the contrary, it can accentuate defensive reactions (e.g., Baldwin & Wesley, 1996; McGregor, Gailliot, Vasquez, & Nash, 2007). Du, Jonas, Klackl, Agroskin, Hui and Ma (2013) found that when a threatened cultural worldview is highly relevant to a measured specific type of self-esteem, such as relational self-esteem, self-esteem is associated with more acute cultural worldview defense, although it consistently attenuates dispositional death anxiety. Results such as these, which disagree with the TMT doctrine may imply that subjective self-serving belief of existing in a meaningful universe will not reduce all types of defensive reactions, although it might mask eminent death, unless faced with immediate death. Rather, intuition that s/he lives in orderly world, and his/her life is meaningful, might assuage general defensiveness. Schmeichel, Gailliot, Filardo, McGregor, Gitter and Baumeister (2009) showed that, implicit self-esteem, one's intuitive and unconscious global self-evaluation, serves as an anxiety buffer, while most studies measure explicit self-esteem. Such self-reported, conscious self-esteem may fall short of having a buffering effect, suggesting that implicit feeling of self-worth is more important in managing death anxiety through cultural worldview defense than what s/he consciously believes. From this point of view, a combination of explicit/implicit self-esteem may be crucial because high-explicit/low-implicit self-esteem increases general defensiveness (Jordan et al., 2003). Otherwise, simply stated, self-esteem moderates the path between

death anxiety and specific defensive reactions.

### **Negative affect and death thought accessibility**

Research has largely indicated that the effect of existential threat is independent of self-report negative affect arising from manipulation, although death anxiety is construed as a central factor of TMT. TMT researchers have claimed that mortality salience induction caused cultural worldview defenses but did not change participants' affective states (see Simon, Greenberg, Harmon-Jones, Solomon, Pyszczynski, Arndt, & Abend, 1997, for a review). This affect-free claim does not constitute a basic theoretical assumption of TMT despite widespread acceptance of it. Early conceptions of TMT encompassed affective mediation (Arndt, Greenberg, Solomon, Pyszczynski, & Simon, 1997). However, more recent research have demonstrated that the effect of existential threat on psychological defense mechanisms is partially mediated by fear/terror-related affect (Lambert, Eadeh, Peak, Scherer, Schott, & Slochower, 2014) and anxiety (Echebarria-Echabe, 2013). Accordingly, people faced with existential threat engage in indirect coping to reduce negative feelings, although this affect related process is not the solitary cause of psychological self-defense mechanisms. Despite this, much literature have adopted PANAS (Watson, Clark, & Tellegen, 1988) to confirm that participants' affective states do not differ by existential threat manipulation, as this scale does not include items for measurement of fear/terror-related affect or anxiety.

Apart from affect, TMT research also sheds light on cognitive factors for the process of managing existential threat, and they have mainly focused on death-thought accessibility (see Hayes, Schimel, Arndt, & Faucher, 2010, for a review). Greenberg and his colleagues examined that participants in existential threat condition increases accessibility of death related thoughts after distraction, and these thoughts give rise to defensive reactions (Greenberg, Pyszczynski, Solomon, Simon, & Breus, 1994). They also demonstrated that participants primed in the death thought suppression condition responded with death related words in word-fragment completion task, more so than the control group. Further research indicated that high cognitive load heightens the effect of existential threat on compensation without distraction (Arndt, Greenberg, Solomon, Pyszczynski, & Simon, 1997). Accordingly, when death is out of focal

attention, then people cannot suppress death-thought accessibility, and hence it escalates along with psychological self-defense mechanisms. Based on these delay effects of mortality salience, Pyszczynski, Greenberg and Solomon (1999) suggested that psychological self-defense mechanisms toward death consist of two-step: proximal defenses and distal defenses. This distinction is almost equivalent to the classification of direct and indirect coping used in this article. When people are reminded of their own mortality, they engage in direct coping i.e., proximal defenses. People consciously suppress death related thoughts, and convince themselves that they are not ready to die. However, our biological life span constrains the effectiveness of such intentional direct coping. People naturally react emotionally aversively toward dying, but the more they think about death, they realize that they cannot do anything about it, and will eventually die sooner or later. In cases where people become emotional about dying, they cannot deny death in rational ways. On the other hand, if they are motivated to deal with their own death in a rational, objective and analytical way, then death related thoughts do not stimulate their psychological self-defense mechanisms, and they are not construed as existential threat (e.g., Simon, Greenberg, Harmon-Jones, Solomon, Pyszczynski, Arndt, & Abend, 1997). When people are not in rational thinking states, and lack psychological resources such as self-esteem or faith in cultural worldviews, existential threat causes unconscious and indirect coping, i.e., distal defenses such as cultural worldview defense or self-esteem striving even after direct coping, e.g., death-thought suppression. Even if the mediational role of affect is robust, the effect of existential threat is still sufficiently unique. In other words, although reactions toward existential threat might share parts of the causes, i.e., anxiety or terror-related affect, with those toward other types of psychological threat, literature pertaining to other types of psychological threat are unable to offer alternative explanations regarding the effect of death thought accessibility on cultural worldview defenses apart from negative affect.

### **Cultural differences in effects of existential threat**

Research on psychological defense toward existential threat has by and large been considered to be a universal issue, because death anxiety is a byproduct of evolution

of cognitive capacity. Theoretically, people without high self-esteem or faith in cultural worldview around the world will show defensive reactions toward existential threat. However, according to meta-analysis of Burke, Martens and Faucher (2010), the effect sizes of existential threat differs by culture. The largest effect sizes have been observed in America, followed by those of Europe, and Asia had the smallest. Burke et al. (2010) discount this difference owing to publication bias, i.e., only studies with robust statistical power are published, hence those of Asia tend to be neglected. This effect of region can be explained in three ways.

### Differences in cultural worldview

First, cultural differences in cultural worldview influence effect sizes. TMT has been developed mainly in North America, and according to Yen and Chen (2013), the majority of research has been conducted by American investigators including founders of TMT. Thus, American worldview might cause bias toward TMT hypotheses and results. Based on results observed in America, non-American researchers might conduct an experiment in which they measure defensive reactions arising from the American worldview, and hence, they are doomed not to observe any significant differences. Furthermore, cultural differences in worldviews generate different effects of existential threat on specific dependent variables in respective cultures, and may even result in opposite results. Westerners primed with existential threat showed more solid individualistic tendency, but for East Asians, priming lead to higher collectivistic tendencies, in order to fill themselves with cultural values. Existential threat increased self-reported independence and uniqueness of self, and individualistic behavioral intentions among Australians, but decreased them among Japanese (Kashima, Halloran, Yuki, & Kashima, 2004). Indeed, researchers around the world conducted experiments in which participants primed with death rated pro-/counter-national opinions, but most research did not attempt any direct cross-cultural comparisons. The reason for this is that researchers must present appropriate criticism or approval toward participants' culture. Heine, Harihara and Niiya (2002) used a counter-national essay which slighted the creativity of Japanese culture by claiming that they always imitate other cultures. While this opinion threatened Japanese cultural worldview, including pride upon

their manufacturing industries, a similar blame would not be construed as a cutting remark among people from different countries. Moreover, the same essay may not threaten cultural worldview of young Japanese because of the decline in industrial power of Japan of recent years, and the procedure of Heine et al. (2002) may have already lost their replicability. The diversity and variability of cultural worldviews subsequently undermines the effect sizes of research conducted in Europe and East Asia, based on North American TMT literature.

As for self-esteem as a buffer against anxiety, contrary to the theoretical assumption that people engage in self-esteem maintenance to reduce potential existential threat, Wakimoto (2006) indicated that Japanese strengthen humility to adapt their cultural worldview pertaining to normative self-presentation. Even if self-enhancement after existential threat manipulation is a universal issue, such tendency is more acute among Americans than among Japanese. Japanese will conceal their personal need for self-esteem, while adhering to the cultural need to be modest. Similarly, American participants, who were expected to be proud of receiving positive feedback about their performance on a test, were skeptical toward the validity of the test when education specialists cast doubt over their authenticity, only when primed with death thoughts (Landau, Greenberg, & Sullivan, 2009). On the other hand, when the specialists approved the test, existential threat conversely induced acceptance of negative feedback regarding it. Based on research indicating cultural differences in self-enhancement, American culture promotes more positive self-view of people than that of East Asians, although Americans reject an opportunity for self-enhancement in order to adapt their cultural worldview in particular situations. Therefore, regardless of the sustainability of TMT self-esteem hypothesis, when experiments involving death anxiety and self-esteem are conducted on East Asians, large effect sizes cannot be attained, as they are with American samples. In contrast, when self-enhancement on collectivistic dimensions for death anxiety reduction is assessed, large effect sizes from East Asians samples can be expected, more so than from Westerners. In addition, specifying the type of self-esteem is important when cultural differences in anxiety buffering is questioned. For example, Du et al. (2013) indicated that personal self-esteem negatively correlated with dispositional death

anxiety among Australians and Chinese. Simultaneously, relational self-esteem also functioned as an anxiety buffer among Chinese only. Therefore, cultural worldview constrains the type of self-esteem which serves as anxiety buffers, and hence researchers might need to measure the appropriate domain of self-esteem in accordance to the participants' culture. Nevertheless, such issues regarding self-esteem should be overcome as TMT research goes beyond American borders.

### Differences in religions and procedures

Second, as Yen and Chen (2013) point out, there may be an experimenter effect on existential threat manipulation and defensive reaction measurement, and this may generate spurious cultural differences independent of the effects of culture. In other words, some researchers may opt for more sophisticated procedures to induce larger effect sizes of existential threat. They argued that experimenter effects are partially caused by the difference in length of time between existential threat manipulation and dependent variable measurement, and also the attributes of samples; undergraduates vs non-student adults. However, they purport that such effects may remain when controlling the variables. Furthermore, Martin and Van den Bos (2014) make note of the fact that much of the research in TMT has been conducted at universities in particularly conservative, and culturally and politically homogenous regions, hence attaining stronger effect sizes of cultural worldview defenses. Although much literature use reactions toward pro-/counter-national opinion as an index of cultural worldview defenses, conservative worldviews emphasize the nation more than liberal, and hence pro-national attitude functions as an anxiety buffer more efficiently among conservative individuals than liberal. Additionally, apart from sampling, other effects, such as the formality of the experimenters' clothing and attire, may easily change defensive reactions toward existential threat (Simon et al., 1997), and details of such are not taken into account by experimenters in their discussion of results.

### Differences in in/direct coping and death acceptance/denial

Third, studies conducted outside of the United States may not be dealing with a sample that rejects their own mortality as much as American. TMT postulates that

people deny their own mortality, and hence it cannot predict behaviors of people who accept future death. Of course, death anxiety and negative attitude toward mortality are universal issues, and most people around the world do not want to die. The interaction effect of mortality salience induction and dispositional low self-esteem decreases subjective meaning in life among both Americans and Chinese (Routledge, Ostafin, Juhl, Sedikides, Cathey, & Liao, 2010). However, it is doubtful that they consequently engage in masking ends of their own lives in an exhaustive manner. Some of them may accept their own fate, and try to make sense of their remaining life, even if they do it with reluctance. According to Meaning Management Theory (MMT; Wong, 2008), people are motivated to protect themselves against one's future death as TMT claimed, however people who accept mortality can pursue a more meaningful life. MMT interprets death acceptance as one of the cornerstones of the good life. If one continues to dismiss death, his/her death anxiety paradoxically increases. Wong (2011) points out that whereas TMT does not ignore a growth motivation arising from death anxiety, it mainly focuses on sense making with the purpose of denial of their own mortality. If death acceptance is a crucial factor for reacting toward existential threat as MMT indicates, culture may affect the degree of difficulty in taking a conciliatory attitude toward mortality. In other words, people from non-American cultures can readily succeed in direct coping toward existential threat against the TMT assumption. Yen and Cheng (2010) found that the existential threat did not induce changes in reactions toward pro-/counter-national essays among Taiwanese. However, Taiwanese primed with death strengthened obedience toward their own destiny. This result implies that Taiwanese may accept their own mortality to cope toward death anxiety, however, it does not mean they do not feel any fear of death. Likewise, Ma-Kellams and Blascovich (2012) observed East Asian non-defensive defense toward existential threat, citing the fact that they engage in a dialectical thinking style, viewing their world and lives more holistically than Westerners, and hence perceiving life and death as mutually complementary. The philosophical tradition of East Asians view life as connoting death, mitigating their rejection of death. In their Study 1, East Asians primed with death showed elevation of life-thought accessibility. Their Study 2-4 indicated that ex-

existential threat drives East Asians to enjoy worldly pleasures whereas it does not stimulate cultural worldview defenses for attaining symbolic/literal immortality. These results consistent with MMT rather than TMT, and imply that if people are not overly sensitive toward their own mortality, it can guide them to make their limited time on earth more pleasurable. People paradoxically give weight to every moment of their life since it will end sooner or later. Contrary to this, Ma-Kellams and Blascovich (2012) observed that Euro-Americans consistently show typical defensive reactions to mask their own mortality through four experiments. Death-thought accessibility increased instead of life related thought in Study 1, and existential threat induced cultural worldview defense, but did not affect enjoyment of daily life activities in Study 2. The results of Studies 3 and 4 manifested that existential threat does not prompt Euro-Americans to enjoy what little life they have. Study 5 revealed that when participants were primed with holistic thinking, existential threat made daily life activities more enjoyable, independent of their primary cultural orientation. These results implied that East Asians may easily accept their own mortality, and hence they engage in direct coping toward existential threat although they can defend their egos from potential death through symbolic/literal immortality along with cultural worldview defenses, i.e., representative indirect coping toward the threat.

### **The effects of existential threat independent of one's personal death**

As other focal points of existential threat, mortality and imagination of one's death can be the source of various types of psychological threat, apart from death-thought accessibility and death anxiety. Mortality salience induction highlights existential uncertainty, i.e., insecure feelings arising from the fact that we cannot know when and how we will die (Landou et al., 2010). When participants answered open-ended questions regarding death, they simultaneously thought about uncertainty, and this elaborated uncertainty heightened defensive reactions (Van den Bos Poortvliet, Maas, Miedema, & Van den Ham, 2005). However, it is not clear whether uncertainty caused by this type of experimental procedure would correspond to existential uncertainty (for further discussion about mortality salience induction and uncertainty, see Landou et al. [2010]; Van den Bos & Lind

[2010]). Likewise, mortality also can be construed as signal of disruption of closed relationships. Greenberg et al. (1994) found that thinking about the death of a loved one evokes cultural worldview defenses, however, even if the experimenter instructs participants to imagine one's own personal death, some of them would conceive of relational concerns. Kashima et al. (2004) revealed that thinking about the death of one's whole ingroup had a larger effect on cultural worldview defense than that about one's personal mortality among Japanese. The results also indicated that the effect of one's personal death is larger than that of collective death among Australians. This result also supports the notion that East Asian cultures strengthen one's capability to accept one's personal death. On the other hand, IND-COL may influence perceived disruption of relationships arising from mortality, and East Asians who are characterized by collectivism and dialectical thinking may be intolerant to such psychological threat based on relationships. East Asians may use indirect coping toward this threat even if they can accept one's own personal mortality. On the other hand, North American culture puts importance on individualism and analytical thinking, and hence North Americans may be fragile toward death and mortality as ultimate ends of their personal lives. This North American worldview may contribute to the development of TMT based on denial of mortality, however further studies should address multiple meanings of death, and death acceptance, independent of personal death viewed as important in North America.

### **Psychological threat arising from uncertainty and inconsistency**

Uncertainty, unpredictability, ambiguity, doubt and inconsistency can pose a psychological threat, which is referred to as uncertainty threat, because human beings have the need for certainty to adapt natural/social environments. There are subtle differences in these concepts, however, all of them consistently threatens our behavioral and decisional standards, and plans, although we sometimes enjoy some types of them, e.g., a gamble. Whereas our world is filled with uncertainty, we deal with uncertainty by merely ignoring or neglecting it. Even if we do not have sufficient information to make good decisions reasonably, our intuition mask such informational uncertainty, and engender confidence re-

garding our resolution (Kahneman, 2011). When a careful judgement is demanded, we can override our cognitive indulgence to a certain extent, and seek for further information. However, affective reactions toward uncertainty is distinguished from cognitive uncertainty perception (e.g., Greco & Roger, 2001). Uncertainty pertaining to something crucial not only attract our attention, but also bothers us, and bring about anxiety and insecurity. Such types of uncertainty are construed as uncertainty threat, and evoke defensive reactions. Especially, much literature has focused on self-uncertainty, self-inconsistency, and self-doubt as the source of the threat. When we uncertain about our self-concept, attitude or behavioral consistency, we engage in in/direct coping toward it. While people can engage in direct coping toward uncertainty such as approaching uncertainty and uncertain situations, and seek information to resolve salient uncertainty (see Szeto & Sorrentino, 2010, for a review), uncertainty threat research mainly focused on indirect coping, and revealed that people pursuit certainty so as to mask salient uncertainty and diminish unease feelings arising from it.

### **Cognitive dissonance**

Cognitive Dissonance Theory (Festinger, 1957) shed light on threatening uncertainty and inconsistency. When someone declares an opinion, which contradicts his/her covert attitude, and s/he does not have the sufficient reason that s/he feigns to believe it, such as to receive money, s/he experiences cognitive dissonance. Then s/he changes his/her covert attitude so as to reduce the dissonance (Festinger & Carlsmith, 1959). Cognitive dissonance engenders psychological discomfort, and dissonance reduction eliminates this unease experiences (Elliot & Devine, 1994). These findings imply that contradiction and inconsistency pose psychological threat and activates defensive mechanisms. Various theories were derived from Cognitive Dissonance Theory, and some of them assumed that contradiction between one's behaviors and self-standards causes cognitive dissonance, although threats to the self-concept are not vital for arousal of cognitive dissonance (cf. Stone & Cooper, 2001).

### **Uncertainty Identity Theory (UIT)**

UIT (Hogg, 2007) revealed that self-conceptual un-

certainty instigates self-image maintenance. When people assimilates with group prototype through self-categorization, they obtain stable standard, which shared by ingroup members, for interpretation of the world, and decision making, and hence they can reduce various types of uncertainty. Grieve and Hogg (1999) found that participants showed stronger social identification with a minimal group, and ingroup bias in uncertain situations in which they do not have sufficient knowledge regarding experimental task and relationships with other participants. In their Study 2, Merely trying to understand ambiguous pictures lead to prominent social identification. UIT deduces that uncertainty pertaining to oneself in social context or self-concept particularly bothers him/her, and hence it posits self-uncertainty reduction is one of the main objects of social identification. When people elaborated three aspects of their lives that made them uncertain about their lives, future and themselves, they identified with ingroup than control. Furthermore, this effect was more acute when their ingroups are entitative because group with obvious features and clear boundary offers steadfast guides for identity construction, and hence it can efficiently reduce self-uncertain (Hogg, Sherman, Dierselhuis, Maitner, & Moffitt, 2007). However, if uncertainty arises from one's personal self-concept, group identification is indirect coping toward it, because it does not clarify our personal characteristic independent of belonging. Likewise, self-uncertainty compels people to express a minor opinion, however the aim of their anti-conformity is not intended on clarifying specific uncertain aspects of their self-concept, but on pursuing self-uniqueness to attain a solid self-concept (Rios, Wheeler, & Miller, 2012).

### **Uncertainty Management Model (UMM)**

Like existential threat, uncertainty threat causes cultural worldview defenses. The earliest state of UMM (Lind & Van den Bos, 2002; Van den Bos & Lind, 2002) mainly focused on uncertainty reduction through social justice and fairness, however UMM research demonstrated compensatory behaviors based on cultural worldviews for managing uncertainty apart from death anxiety. Fairness bring about subjective order into social situations around us, and hence under fairness treatment, we feel certainty and become tolerant toward uncertainty. As Learner (1980) points out, people have BJW, fairness treatment

maintain our worldview, however unfairness threatens it. People primed with uncertainty tend to blame innocent victims, because if a misery comes up without any reasons, such as insecurity of a victim, our BJW lose subjective validity as the rule of the world (Bal & Van den Bos, 2012). Likewise, other types of cultural worldview can buffer uncertainty, such as cultural values and norms shared by members of one's nation. Once uncertainty is salient, it instigates compensatory uncertainty reduction based on cultural worldviews. Namely, uncertainty threat motivates people to confirm or defend their worldviews in order to reduce feelings of uncertainty. Therefore, when participants were reminded uncertainty, they showed more sensitive toward fairness (Van den Bos, 2001), and more intense affect reactions toward pro-/counter-national essays (Van den Bos, Poortvliet, Maas, Miedema, & Van den Ham, 2005). However, as cultural worldview defenses toward existential threat, such defensive reactions are indirect coping toward uncertainty, and people do not need to uncertainty posing the source of the threat through such defense mechanisms. In other words, people can satisfy to obtain subjective certainty irrelevant to uncertainty threat. UMM research indicated that uncertainty threat manipulation does not influence participants' general affect states (e.g., Van den Bos et al., 2005), however, the effect of uncertainty on cultural worldview defense is mediated by anxiety (Echebarria-Echabe, 2013). This finding does not mean that anxiety reduction is the most powerful drive of defensive reactions. Existential threat also induce anxiety along with cultural worldview defense. Therefore, these two types of self-defense mechanisms partially may share psychological cause of defense reactions, i.e., anxiety reduction, but not "death anxiety" reduction. Furthermore, UMM emphasizes evidences indicating that the effect of uncertainty threat on cultural worldview defense is larger than that of existential threat. For example, Van den Bos and his colleagues adopted existential threat condition instead of control condition (Van den Bos et al., 2005; Yavuz & Van den Bos, 2009). Furthermore, Van den Bos et al. (2005) also found that while the experimenter instructed participants to elaborate on their own death, some of them (24%) detailed uncertainty related issues, and they showed more acute cultural worldview defense than participants who delineated merely their own death. The aim of these indications is not to negate all of TMT

assumptions, but rather to postulate theoretical revision. TMT posit death anxiety management is only one purpose of cultural worldview defense, and hence it cannot explain findings of uncertainty threat research (e.g., Martin & Van den Bos, 2014; Van den Bos & Lind, 2010). Imagined one's own death can bring about uncertainty and anxiety, and hence psychological mechanisms for uncertainty and anxiety management may engender parts of defensive reactions toward existential threat.

### Reactive Approach Motivation (RAM) Theory

RAM Theory (McGregor, Nash, Mann, & Phills, 2010) also involves various defensive reactions toward uncertainty threat. This theory treats uncertainty threat as a signal of goal disruption, and stimulates goal regulatory mechanisms. When people confront uncertainty pertaining to their personal goals (e.g. obtaining a doctoral degree for graduate students), or goal conflicts (e.g. choosing one from multiple things one wants), anxiety arises from it, and inhibits their approach motivation. Whereas this vigilant state induces direct coping toward uncertainty, such as information seeking, however it is released as time passes, and then approach motivation becomes reactivated along with indirect coping toward the threat (Jonas, McGregor, Klackl, Agroskin, Fritsche, Holbrook, & Quirin, 2014). This RAM causes our behavioral change especially depending on one's own ideal, because an ideal consolidates the order of our personal goals, and ideal goals are not completely frustrated due to its abstract property (McGregor, Prentice, & Nash, 2012). Often times, our idealistic values are predicated on cultural worldviews, and hence RAM also can induce cultural worldview defense. Therefore, RAM strengthens one's conviction of beliefs, values, cultural worldviews, and reduce uncertainty pertaining to them, and participants primed with uncertainty show compensatory conviction regarding religion, personal goal pursuit, and social issues (McGregor, Zanna, Holmes, & Spencer, 2001; McGregor, Nash, & Prentice, 2010; McGregor, Prentice, & Nash, 2012).

### Cultural differences in uncertainty management

While TMT posits that defensive reactions toward existential threat and mortality warrant cognitive capacities proper to mankind, theories of uncertainty management assumes that defensive reactions toward uncertainty and

inconsistency are not unique to human beings. For example, non-human primates show behavior indicating justification for cognitive dissonance reduction (Egan, Santos, & Bloom, 2007; see Harmon-Jones, Haslam, & Bastian, 2017, for a review). Therefore, uncertainty reduction may be vital for survival of organisms, and that of mankind also may have substantial adaptive values. However, human beings must adapt not only to the physical environment, but also one's culture, and hence, the importance of different types of uncertainty may vary by it. As mentioned above, uncertainty threat research mainly focuses on the relevance of uncertainty to the self (Hogg et al., 2007), and to salient goal pursuit (McGregor et al., 2011). While this is not restricted to the culture in which these studies have been conducted, these types of uncertainty can also be threatening in other cultures, but the effect size of them may be small relative to the former. McGregor (2004) suggested that consolidation of one's self-concept and values is one of the most important goals for individuals and hence, they react sensitively toward information threatening this goal. In contrast, he implied that collectivists may be tolerant toward such threat due to cultural differences in attitude toward identity consolidation. Self-system embraces multiple aspects of one's self-image including independent and interdependent dimensions. Thence self-uncertainty pertaining to private selves may have lower priorities among collectivists. Japanese actually perceive their self-concepts to be unstable, and unclear relative to Americans and Canadians (Campbell, Trapnell, Heine, Katz, Lavallee, & Lehman, 1996). Furthermore, according to cross cultural research into cognitive dissonance (Hoshino-Browne, Zanna, Spencer, Zanna, Kitayama, & Lackenbauer, 2005), European-Canadians justified their decision making regarding their own preference to reduce cognitive dissonance. Asian-Canadians and Japanese, on the other hand, were not concerned about the consistency of choice for themselves, but show justification for cognitive dissonance reduction after they chose presents for their friends. While both self-uncertainty and uncertainty regarding group belonging induces ingroup identification (Hogg et al., 2007; De Cremer, Brebels, & Sedikides, 2008), Sedikides, De Cremer, Hart and Brebels (2010) implied that their effects may differ by self-construal; independent vs interdependent. Likewise, Morrison, Johnson and Wheeler (2012) demonstrated that self-uncertainty pertaining to

group membership brings about discomfort amongst the collectivistic Americans, but self-uncertainty pertaining to independent selves had no such effect. These results suggest that cultural differences may arise in the effect of self-uncertainty on self-categorization. However, UIT takes "self in social context" into consideration, and based on UIT, self-categorization is hypothesized to reduce uncertainty regarding self embedded in social relationships in collectivistic cultures. According to RAM, whatever threatens our important goals can pose an uncertainty threat, such as psychological threat arising from mortality and self-esteem, because they can impede our goal pursuit and generate anxiety. Therefore, RAM is readily applicable to various cultures, although there may be cultural differences in what types of incidents can be construed as cues for goal frustration. Furthermore, cultural differences in regulatory mechanisms may influence the outcomes of RAM.

### Thinking style and uncertainty management

Dialectical thinking may influence coping toward uncertainty threat because people who think dialectically perceive the world to be more chaotic and contradicting than those who think analytically. Therefore, this cultural worldview may serve as a buffer toward uncertainty. East Asian philosophy emphasizes the unpredictability of important life events regardless of its positivity. According to some classical literature of China, happiness and misery are considered to emerge alternately, and incidents which someone sees as bad luck at first can end up in desirable outcomes. Like death acceptance, East Asians may accept uncertainty, and moreover, they decide how to deal with it. However, very few research investigates the relationship between uncertainty threat perception and dialectical thinking. Further studies should also address other major cultural dimensions pertaining to rules and uncertainty, such as uncertainty avoidance (Hofstede, Hofstede, & Minkov, 2010), and tightness-looseness (Gelfand et al., 2011) may also bear on uncertainty threat perception and compensation.

### Coda

This review outlined theories of threat perception and compensation, focusing on ego, existential, and uncertainty threat. Although the number of research findings is

still insufficient, research involving non-Westerners consistently support theories of cultural psychology regardless of types of psychological threat. This review implies that IND-COL influence what types of incidents are likely to be construed as the source of psychological threat. On the other hand, dialectical and analytical thinking style influences the type of coping. The importance of psychological threat in our lives is universal, however cross-cultural studies imply that present theories underestimate the role of culture. The current state of this research field warrants a large-scale and systematic cross-cultural studies.

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## ABSTRACT

### Cultural differences in the perception of psychological threat and compensation

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Coping toward psychological threat is important in our everyday lives, even if we choose to overcome or avoid it. While most of the research conducted on this theme has originated from the Western world, the conception, function and content of psychological threat may differ by culture. The theories pertaining to psychological threat and self-defense processes are likely to have been devised by Western researchers, under Western cultural assumptions, and based on samples consisting of Western people. Cross-cultural psychologists have noted that differences in culture may exist in understanding and responding to psychological threat, yet few systematic and large-scale cross-cultural research have been conducted. Those that have been published indicate that individualism-collectivism is highly relevant to how we deal with psychological threat. Individualists perceive incidents that threaten their self-concept as an autonomous individual constitute psychological threat, while on the other hand, collectivists view relational issues to be a stronger threat. Should this cultural difference hold true, the replicability of Western studies on Eastern samples may be up to question. Some theorists have taken into account cultural differences in psychological threat, and have revised their theories in order to interpret data from different cultural backgrounds. The aim of this article is to construct a useful framework for interpreting cultural differences across types of psychological threat based on individualism-collectivism and holistic versus analytic thinking. In this article, research regarding psychological threat was reviewed, such as existential threat, uncertainty threat, and cognitive dissonance, in terms of self-concept and relationships so as to organize studies that could be associated with both culture and psychological threat. This review elaborates on individuals' adaptation toward each culture, which is considered to be the root of differences in the perception of threat. In short, in individualistic cultures, psychological threat pertaining to one's self-concept might cast serious doubts on their adaption and success within their culture. Likewise, in collectivistic cultures, psychological threat pertaining to one's relationships might play a role in this. Individuals under such psychologically threatening situations must respond hurriedly in order to cope toward them to maintain their adaptation, and hence they will show psychological self-defense or compensation. Furthermore, this review briefly describes several psychological threat theories, such as Terror Management Theory, Uncertainty Identity Theory, Reactive Approach Motivation Theory, and Cognitive Dissonance Theory, taking into consideration their applicability toward interpretation of cultural differences based on individualism-collectivism, holistic versus analytic thinking, and the assumption mentioned above. Future studies should address the effect of culture on psychological self-defense and compensation because most literature, including this article, focus on the effect of culture on psychological threat perception preceding them.

Key words: psychological threat, psychological self-defense, threat compensation, individualism-collectivism, holistic versus analytic thinking