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The role of self-discrepancies in distinguishing regret from guilt

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ABSTRACT

Regret and guilt are self-conscious emotions. They stem from negative events for which people feel responsible. Both emotions reflect discrepancies between how people are (their “actual” self) and how they would like to be (their “ideal” or “ought” self). We examined whether regret and guilt were related to different self-discrepancies (i.e., “ideal” and “ought” self-discrepancies). Two studies (total $N = 1998$) with Chinese and US participants found that people feel more regret over ideal self-discrepancies than over ought self-discrepancies, whereas for guilt this is more complex. We also found a main effect for culture such that ideal self-discrepancies were associated more with both emotions in the USA compared to China. Implications for the differences between regret and guilt are discussed.

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Regret; guilt; self-discrepancies; culture

Regret and guilt are self-conscious emotions, meaning that the experience of these emotions involves an awareness of oneself and one’s failures (Lewis, 1995). This includes counterfactual thoughts about how one could have behaved differently, but also thoughts about self-discrepancies about how the image of oneself differs from how one would like it to be (Higgins, 1987). Understanding the self-discrepancies associated with regret and guilt is crucial to untangling the complex relationship between these emotions.

Regret and guilt are often felt together, share several phenomenological experiences, and may have similar consequences. Ratings of the intensity of guilt and regret are often highly correlated (e.g., Mandel, 2003; Zeelenberg et al., 1998). Martinez, Zeelenberg, and Rijsman (2011) asked participants to read a scenario inducing either regret or disappointment. Participants in the regret condition indicated high levels of both regret and guilt, and these were significantly higher than those in the disappointment condition. Coping strategies associated with regret and guilt are also often found to be similar (Passyn & Suján, 2006). Thus, experiences of regret and guilt often co-occur.

Beyond the tendency for guilt and regret to co-occur in daily life, some researchers also do not differentiate between these emotions. This is apparent in research using the word “regret” to measure the emotion guilt. Smith, Webster, Parrott, and Eyre (2002) examined

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participants' guilt-related reactions (including the items "remorse" and "regret") after they recalled a moral or unmoral situation. In their data, guilt and regret were highly correlated ($r = .73, p < .01$). Similarly, Sheikh and Janoff-Bulman (2010) and Liss, Schiffrin, and Rizzo (2013) used a five-item guilt scale that includes the item "I feel remorse, regret". There are also cases in which the opposite was done, where regret was measured with the word "guilt". In Shimanoff's (1984, 1985) examination of negative emotion in everyday language, her category of "regret" actually combined utterances of regret, guilt, and remorse. In sum, researchers sometimes use regret and guilt interchangeably, or combine them in one measure. This is understandable when one considers these emotions to be highly similar. But, using them interchangeably or combining them, may conceal important differences between regret and guilt.

Research has shown that it is important to distinguish regret from guilt (e.g., Berndsen, van der Pligt, Doosje, & Manstead, 2004; Breugelmans, Zeelenberg, Gilovich, Huang, & Shani, 2014; Zeelenberg & Breugelmans, 2008). The present research aims to further unveil their relationship. Examining the specific experiential and motivational nature of both regret and guilt expands our understanding of the complexity of these emotions. Emotion differentiation is especially relevant for gaining insight into the behavioral consequences of discrete emotions (e.g., Zeelenberg, Nelissen, Breugelmans, & Pieters, 2008). If regret and guilt are not simply the same emotion that goes by different names, but are truly different emotional experiences, one can expect these emotions to be associated with different manifestations of emotion regulation and also different behaviors. As described below, some researchers have already argued for emotion-specific effects of guilt and regret.

Despite the overlap in experience and usage, various studies thus point toward differences between guilt and regret. One key feature appears to be to whom harm is done. Guilt results primarily from interpersonal harm, whereas regret results from both harm to oneself (Berndsen et al., 2004) and harm to others (Zeelenberg & Breugelmans, 2008). These results were confirmed further in a cross-cultural examination of regret, guilt and disappointment (Breugelmans et al., 2014). Also, guilt is associated with more moral self-blame than regret (Lickel, Kushlev, Savalei, Matta, & Schmader, 2014). These previous studies examined antecedents of guilt and regret rather than the contents of what people feel regret and guilt for. Here, we propose that the nature of guilt and regret may be additionally understood by examining their connections with self-discrepancies.

Self-discrepancy theory

Higgins (1987) proposed that two distinct self-discrepancies are associated with different experiences of emotions. The first stems from comparing one's actual self to what one would like to be ideally (the "ideal self"). This is called an actual/ideal self-discrepancy. The second self-discrepancy is between one's actual self to what one should be given norms, obligations and responsibilities (the "ought self"), known as an actual/ought self-discrepancy. Higgins predicted that when people think they failed to live up to their ideal self, they would experience dejection-related emotions, such as disappointment and dissatisfaction. In contrast, when people think they failed to live up to their ought self,

they are predicted to experience agitation-related emotions, such as guilt or self-contempt.

Higgins (1987) did not discuss how self-discrepancies relate to regret. One could argue that because regret and guilt are closely related, regret would be felt primarily in relation to actual/ought self-discrepancies. However, Davidai and Gilovich (2018) recently found that people actually feel more regret about not being the person they *could* have been than over not being the person they *should* have been. Regret thus appears to be more related to actual/ideal self-discrepancies than to actual/ought self-discrepancies.

Combining Davidai and Gilovich (2018) empirical findings concerning regret and Higgins (1987) assumption concerning guilt, we formulated a hypothesis articulating differential relations between these emotions and self-discrepancies:

H1: Whereas regret is associated with actual/ideal self-discrepancies, guilt is associated with actual/ought self-discrepancies.

These predictions are consistent with Ben-Ze'ev's (2000, p. 498) discussion of the differences between these emotions: "We feel guilty after doing something which is forbidden; we feel regret after doing something which was basically a failure". The prediction of differential relations between self-discrepancies and regret and guilt is interesting in light of the empirical research finding that regret and guilt are highly similar. At present, it is important to note that we are not aware of any research directly comparing guilt and regret in relation to self-discrepancies. Davidai and Gilovich (2018) consistently found that regret is most often felt in response to ideal self-discrepancies rather than ought self-discrepancies. Are there also empirical tests of Higgins' prediction that experiences of guilt follow from ought self-discrepancies?

The answer to this question is not straightforward. Table 1 summarizes six articles that have examined the relationship between guilt and self-discrepancies. The results of these studies are not consistent. Although all studies purport to examine the relation between guilt and self-discrepancies, guilt was often assessed using other emotions words than "guilt," including the word regret. Interestingly, in two of these cases (Liss et al., 2013; Ozgul, Heubeck, Ward, & Wilkinson, 2003), a significant correlation with ideal self-discrepancies was found, consistent with Davidai and Gilovich (2018). However, Carver, Lawrence, and Scheier (1999) obtained different results. They measured guilt via five items, including "regretful", and found no relation between this measure and ideal self-discrepancies, but they did find a relation between guilt and ought self-discrepancies.

We ran a mini-meta analysis on the data in Table 1 and found that the average correlation between guilt and ought self-discrepancy is $r = .324$, $p < .001$, and the average correlation between guilt and ideal self-discrepancy is $r = .317$, $p < .001$. We also coded whether the guilt measure includes items of regret/remorse, and we found that this did not significantly moderate these effects. Thus, new research that tests the predicted relationship between guilt, regret, and self-discrepancies more cleanly is essential.

The role of culture

When thinking about how regret and guilt relate to self-discrepancies, it is important to consider culture. Culture shapes how people think of themselves broadly (Markus &

Table 1. Articles that examine the relationship between guilt and self-discrepancies.

| Authors | Measure of self-discrepancy | Measure of guilt | Results |
|---|--|--|--|
| Carver et al. (1999) | Selves Questionnaires | <i>Affects Balance Scale</i> (Derogatis, 1975) Guilt was measured by a 5-item subscale ($\alpha = .91$). Participants indicated the extent to which they had each of the feelings during past week. (1 = never; 5 = always) The emotions were "guilty, regretful, blameworthy, ashamed, and remorseful". Frequency of guilt was assessed via an item of the PANAS (Watson, Clark, & Tellegen, 1988): "guilt" "How often do you feel in this way?" 1 (little/none) to 4 (most of the time) | Guilt was significantly related to ought self-discrepancy ($r = .28, p < .01$) and unrelated to ideal self-discrepancy ($r = .19; n = 85$) |
| Fromson (2006) | Selves Questionnaires | <i>The Personal Feelings Questionnaire</i> (Harder & Lewis, 1987) Guilt was measured by 3 items in the subscale. ($\alpha = .72$). Participants rated how frequent they experienced the emotions (1 = never experience; 5 = experience the feeling continuously). The items are: 1. mild guilt, worry about hurting or injuring someone. 2. intense guilt 3. regret, remorse, etc." | Guilt was significantly related to ought self-discrepancy ($r = .48, p < .01$). The relation between ideal self-discrepancy and guilt was not tested. (n = 63) |
| Ozgul et al. (2003) | Selves Questionnaire; Adjective Checklist | <i>State Shame and Guilt Scale</i> (Marschall, Sanftner, & Tangney, 1994) Guilt was measured by a 5-item ($\alpha = .83$) Participants indicated the extent to which they had each of the feelings during past week. (1 = never; 5 = always) The article only provides these items as examples: 1. I feel remorse, regret. 2. I cannot stop thinking about something bad I have done. 3. When I eat fattening food, I get distressed by the feeling that I did something wrong. | Guilt was both related to actual-ideal and ought self-discrepancy ($r_{ideal} = .22, p < .01; r_{ought} = .19, p < .01; n = 220$) |
| Liss et al. (2013) | Adjective Checklist | <i>The Weight and Body Related Shame and Guilt Scale</i> (Conradt et al., 2007) Item responses ranged from 0 (never) to 4 (always). Guilt was measured by six items ($\alpha = .93$) (1) When I can't manage to work out physically, I feel guilty. (2) When I have eaten more than I want, I experience feelings of guilt. (3) When I eat fattening food, I get distressed by the feeling that I did something wrong. (4) When I cannot get a grip on my weight, I blame myself. (5) I blame myself when I break a good resolution concerning my eating. (6) When I watch myself in the mirror, I feel guilt and decide to do more for my figure. | Guilt was related to ideal (maternal) self-discrepancy ($r = .27, p < .00; n = 181$) |
| Castonguay, Brunet, Ferguson, and Sabiston (2012) | Weight-related Self-discrepancies (actual vs. ideal) | | Guilt was significantly related to ideal self-discrepancy ($r = .45, p < .001; n = 389$) |

(Continued)

Table 1. (Continued).

| Authors | Measure of self-discrepancy | Measure of guilt | Results |
|---------------------------------|---|--|---|
| Barnett, Moore, and Harp (2017) | Integrated Self-Discrepancy Index (SDI) | PANAS-X (Watson & Clark, 1999) Guilt was measured by "guilty, ashamed, blameworthy, angry at self, disgusted with self, dissatisfied with self" ($\alpha = .87$). Participants rated how often they have experienced each affective state during the past few weeks (0 = slightly; 4 = extremely) | Guilt was both related to actual-ideal and ought self-discrepancy ($r_{ideal} = .18, p < .01$; $r_{ought} = .22, p < .01$; $n = 450$) |

Kitayama, 1991) and in the context of self-discrepancies (Heine & Lehman, 1999). Japanese participants showed larger ideal self-discrepancies than Canadian participants (Heine & Lehman, 1999), which means that the distance between actual self and ideal self was larger for Japanese. Put differently, Japanese participants were less satisfied with themselves than Canadian participants. This study did not include measures of the ought self, so we do not know if Japanese participants also showed larger ought self-discrepancies than Canadian participants.

There are more findings in the literature that suggest that there may be cultural differences in self-discrepancies. Ideal self-regulation involves a promotion focus, whereas ought self-regulation involves a prevention focus (Higgins, Shah, & Friedman, 1997). East-Asian samples have been found to display more prevention focus and less promotion focus compared to US and White British samples (Lee, Aaker, & Gardner, 2000; Uskul, Sherman, & Fitzgibbon, 2009). Given this variation, it is clearly problematic that studies on self-discrepancies and emotions have relied mostly on Western (mostly US American) participants. We address this in the current research by having participants from both the USA and China.

Moreover, there is reason to believe that there is cultural variation in regret (e.g., Gilovich, Wang, Regan, & Nishina, 2003). Experiences of regret may be particularly variable across interpersonal or intrapersonal situations of different cultures (Komiya, Miyamoto, Watabe, & Kusumi, 2011). Breugelmans et al. (2014) compared experiences of regret with those of guilt and disappointment, in five samples including participants from the U.S. A. and from Taiwan. Participants recalled experiences of regret, guilt, or disappointment (between-subjects) and indicated whether the event causing the emotion was something that happened to themselves (intrapersonal) or to someone else (interpersonal). In the U.S.A., regret was experienced more intensely in intrapersonal than interpersonal situations, and the reverse was true for guilt. In Taiwan, both emotions were experienced more intensely in interpersonal than intrapersonal situations, and this difference was larger for regret.

Thus, research has found that both regrets and self-discrepancies can be influenced by culture. If one wants to understand the specific nature of regret and guilt, and their relationship with self-discrepancies, it seems essential to examine this cross-culturally. How would culture impact the relation of regret and guilt with the different self-discrepancies? The research by Lee et al. (2000) and Uskul et al. (2009) may lead to the prediction that in China there will be a stronger prevention focus, which may manifest itself in more ought self-discrepancies. It also leads to the prediction that there will be a stronger promotion focus in the USA, which may manifest itself in more ideal self-discrepancies. These differences in focus and self-discrepancies may in turn be reflected in the emotions that people experience. However, at the same time, there is the research by Heine and Lehman (1999) that finds that Japanese show larger ideal self-discrepancies than Canadians. This would lead to the opposite prediction. As a result of these conflicting findings, we will not make a directional prediction. In the current research, we therefore test the following exploratory hypothesis:

H2: Culture moderates the association of guilt and regret with self-discrepancies.

Current research

The current research examines whether regret and guilt are related to different kinds of self-discrepancies. Specifically, the research tests the hypothesis regret, compared with guilt, is more related to ideal self-discrepancies. This research also explores the role of culture in these relationships by comparing the relation between self-discrepancies and emotion for both Chinese and American participants. This is examined in two studies. Study 1 used the forced-choice paradigm from Davidai and Gilovich (2018) Study 1. In this paradigm, participants think about their most intense experience of regret or guilt, and evaluate whether that experience is more related to ideal self-discrepancies or ought self-discrepancies. Study 2 replicates this by using the undoing-paradigm from Davidai and Gilovich's Study 3. Here, participants recall their most intense experience of regret or guilt, and then indicate whether undoing the regret/guilt would bring them closer to their ideal or ought self.

Study 1¹

Study 1 used the methods of Study 1 of Davidai and Gilovich (2018) as an initial examination of the sources of significant life regret or guilt. Study 1a was an initial examination in a US-based online sample and a Chinese undergraduate sample; Study 1b used a China-based online sample to address demographic differences in Study 1a.

Study 1a

Method

Participants. The USA sample consisted of 227 M-Turk participants located in the United States (98 females, $M_{\text{age}} = 35.20$, $SD = 10.17$), who participated in exchange for monetary compensation (0.30 USD). Participants were not asked for information about race or ethnicity. The Chinese sample consisted of 209 Chinese participants (118 females, $M_{\text{age}} = 20.72$, $SD = 2.49$). They were recruited online from the Zhejiang University sample pool and participated in exchange for monetary compensation (equivalent to 0.30 USD). The sample size was calculated with G*Power, using the findings from Davidai and Gilovich (2018) Study 1 (proportion 1 = .61, proportion 2 = .39). For a 90% power and $\alpha = .05$, we would need 115 participants per culture for each condition.²

Materials and procedure. Participants were randomly assigned to the regret or guilt condition. They read the explanations of actual-ideal and actual-ought self-discrepancies from Davidai and Gilovich (2018, p. 441; order counterbalanced within conditions):

People often experience regret [guilt] about various things. Sometimes people feel regret [guilt] for not being the person they think they could have been. They feel regret [guilt] for not achieving the goals they had set for themselves, and not fulfilling their dreams and aspirations. Other times, people feel regret [guilt] for not being the person they think they should have been. They feel regret [guilt] for not meeting the norms and rules they had for themselves, and not fulfilling their obligations.

After reading these descriptions, participants were asked to make a choice about which kind of discrepancy they feel more of the target emotion about (presentation order counterbalanced within conditions):

Take a moment to think about what you feel most regret [guilt] for in life. When you think about your biggest feelings of regret [guilt], which do you tend to feel more regret [guilt] about?

Participants were presented with the response options “I have more regret [guilt] about not being the person I think I could have been (goals I didn’t achieve and dreams I didn’t fulfil)” or “I have more regret [guilt] about not being the person I think I should have been (norms I didn’t follow and obligations I didn’t fulfil).”

For the Chinese materials, we used *hou-hui* (后悔) to represent regret, and *nei jiu gan* (内疚感) to represent guilt (cf., Breugelmans et al., 2014; Gilovich et al., 2003). Two native Chinese PhD students, who were unaware of the hypotheses, translated the description of the English language scenarios and questions into Chinese. The first author compared two translations and decided on the final version (a similar procedure was adopted for Study 2).

Results and discussion

We expected regret and guilt to be differentially associated with ideal versus ought discrepancies (H1). In addition, we explored whether this association was moderated by culture (H2). To examine these hypotheses, we performed a binary logistic regression predicting participant response (ideal vs. ought) on the forced-choice item as a function of national origin (Chinese vs. American), emotion condition (regret vs. guilt), and their interaction. This analysis revealed that emotion was a strong and significant predictor of self-discrepancies, $B = -0.65$, $SE = -0.28$, $p = .01$, Wald’s = 6.44, $Ex(B) = 0.49$. Consistent with H1, participants reported significantly more ideal-self discrepancies in the regret condition than in the guilt condition (see Table 2 for frequencies). There was also

Table 2. Number of American and Chinese participants reporting ideal-self or ought-self discrepancies for experiences of regret and guilt in Study 1 and Study 2.

| Sample | Emotion | Self-discrepancy | | |
|-------------------------------|---------|------------------|--------------|-------|
| | | Ideal | Ought | Total |
| STUDY 1 | | | | |
| USA ($N = 227$) | Regret | 87 (75.65%) | 28 (24.35%) | 115 |
| | Guilt | 70 (61.20%) | 42 (38.80%) | 112 |
| China ($N = 209$) | Regret | 68 (64.20%) | 38 (35.80%) | 106 |
| | Guilt | 48 (46.61%) | 55 (53.39%) | 103 |
| <i>STUDY 1B (Replication)</i> | | | | |
| China ($N = 223$) | Regret | 83 (74.77%) | 28 (25.23%) | 111 |
| | Guilt | 72 (64.28%) | 40 (35.72%) | 112 |
| STUDY 2 | | | | |
| USA ($N = 459$) | Regret | 171 (67.60%) | 82 (32.40%) | 253 |
| | Guilt | 121 (58.70%) | 85 (41.30%) | 206 |
| China ($N = 409$) | Regret | 122 (56.20%) | 95 (43.80%) | 217 |
| | Guilt | 72 (37.50%) | 120 (63.50%) | 192 |
| <i>STUDY 2B (Replication)</i> | | | | |
| China ($N = 471$) | Regret | 123 (53.90%) | 105 (46.10%) | 228 |
| | Guilt | 80 (32.92%) | 163 (67.08%) | 243 |

a significant effect of culture on the self-discrepancies, $B = -0.72$, $SE = -0.28$, $p = .02$, Wald's = 5.43, $\text{Exp}(B) = 0.52$. American participants indicated ideal self-discrepancies to be the source of their emotion more often than Chinese participants. However, the culture \times emotion interaction predicted by H2 was not significant, $B = 0.95$, $SE = 0.41$, $p = .81$, Wald's = 0.55, $\text{Exp}(B) = 1.10$. $p = .81$.

Chi-square tests were conducted within each culture (American and Chinese), to further examine how the self-discrepancies were related to regret and guilt within each sample. The majority of American participants in the regret condition (75.65%) indicated that they felt more regret about not being the person they could have been (actual–ideal discrepancy) than not being the person they should have been (actual–ought discrepancy), $\chi^2 (N = 112) = 30.27$, $p < .001$, $\phi = 0.51$. Likewise, most American participants in the guilt condition (61.20%) indicated that they felt more guilt actual–ideal discrepancies than for actual–ought discrepancies, $\chi^2 (N = 115) = 7.00$, $p = .008$, $\phi = 0.25$. Overall, American participants in the regret condition reported a significantly higher proportion of ideal self-discrepancies than those in the guilt condition, $\chi^2 (N = 227) = 4.60$, $p = .032$, $\phi = 0.14$.

The majority of Chinese participants (64.20%) in the regret condition indicated that they have more regret about ideal than ought self-discrepancies, $\chi^2 (N = 106) = 8.49$, $p = .004$, $\phi = 0.28$, replicating Davidai and Gilovich (2018) and what we found for American participants. In contrast, although slightly more Chinese participants (53.39%) indicated that they feel guilty about not being the person they should have been (actual–ought discrepancy), this did not differ significantly from a 50/50 distribution, $\chi^2 (N = 103) = 0.48$, $p = .49$, $\phi = 0.07$. This differs from American participants who also reported feeling more guilt about actual–ideal discrepancies. Overall, there was a difference between the regret condition and the guilt condition among Chinese participants, $\chi^2 (N = 209) = 6.54$, $p = .011$, $\phi = 0.18$.

This study finds that regret and guilt are associated differently with self-discrepancies. Compared to guilt, regret was more strongly associated with ideal self-discrepancies, as predicted by H1. In addition, there was no significant interaction of culture and emotion, in contrast to the predictions of H2. Despite the overall difference between American and Chinese participants, such that the former more often report their emotions stemming from ideal self-discrepancies, the difference between self-discrepancies with respect to guilt and regret is the same in both cultures.

Study 1b

Although we believe that the cross-cultural nature of our data offers deeper and essential insight into the nature of guilt and regret, we also believe that this study may have some limitations. For example, our American and Chinese samples not only differ in culture, but also in age. Our American MTurk participants were older than the Chinese undergraduate students. Given that self-guides can differ between people of different ages (Ryff, 1991), we replicated this study with older Chinese participants via a paid research participation system that is comparable to MTurk (www.sojump.com).

Method

We recruited 223 Chinese participants (128 females, $M_{\text{age}} = 34.06$, $SD = 7.42$), who participated in exchange for monetary compensation (3 yuan, equivalent to 0.42 USD). The procedure of Study 1b was identical to that of Study 1a.

Results and discussion

The results replicated that regret and guilt differ in how they relate to ideal and ought self-discrepancies, $\chi^2 (N = 223) = 3.90, p = .04, \phi = 0.13$. We also again found no gender effects (Wald's = 2.2, $p = 0.33$). See Table 2. We next compared these new data with the American data from Study 1a. We only found the main effect of emotion on the self-discrepancies, $B = 0.62, SE = 0.29, p = .03, \text{Wald's} = 4.55, \text{Exp}(B) = 1.86$, but we did not replicate the effect of culture ($B = 0.05, SE = 0.31, p = .88, \text{Wald's} = 0.23, \text{Exp}(B) = 1.05$). As in the original data, there was no significant emotion \times culture interaction ($B = -1.24, SE = 0.42, p = .76, \text{Wald's} = 0.09, \text{Exp}(B) = 0.88$).

Study 2

In Study 2, we aimed to replicate these findings using the method from Davidai and Gilovich (2018) Study 3. Participants were asked whether undoing the source of the regret or guilt would bring them closer to their ideal or to their ought self. Given the results of Study 1, we expected that both regret and guilt would be more related to ideal self-discrepancies than to ought self-discrepancies, but that association would be more pronounced for regret than for guilt, as predicted by H1. Again, we expected as well that culture would moderate this association, consistent with our exploratory H2.

Study 2a

Method

Participants. The USA sample consisted of 459 M-Turk participants located in the United States (220 females, $M_{\text{age}} = 32.95, SD = 3.13$); participants did not provide data about race or ethnicity. The Chinese sample consisted of 409 participants (247 females, $M_{\text{age}} = 22.60, SD = 5.60$) recruited online from the Zhejiang University sample pool. The monetary compensation was the same as in Study 1. An a priori power analysis using Study 1's American sample (proportion $p_1 = 0.61$, proportion $p_2 = 0.75$) for 90% power and $\alpha = .05$ indicated we would need 246 participants per culture for each condition.

Materials and procedure. Participants were randomly assigned to the guilt or regret condition. Participants in the regret [vs. guilt] condition were asked to read the introductions that were adopted from Study 3 of Davidai and Gilovich (2018, p. 443):

When you look back on your life to this point, what do you regret most [what do feel most guilty about]? Please describe this experience of regret [guilt] and be as specific as you can without feeling that you are compromising your anonymity.

Then, participants were asked: "How much regret [guilt] do you feel about this (1 = I feel minimal regret [guilt], 7 = I feel extreme regret [guilt])". Next, participants were asked to code their experience as an ideal or ought self-discrepancy. They were presented with definitions of ideal and ought selves (taken from Davidai & Gilovich, 2018, p. 443). We balanced the order of these two descriptions:

A person's ideal self is everything he or she would want to ideally be – a person's ultimate goals, their dreams and aspirations, and who they are dreaming of becoming and a person's ought self is everything they think they should or ought to be – a person's beliefs about how they should behave, their duties and responsibilities, and the normative rules they believe they should follow.

Participants were then asked to make the following dichotomous choice: "Imagine you could go back to the time of your regret[guilt] and undo it. Would undoing the regret [guilt] drive you closer to your ideal self or closer to your ought self?"

Results and discussion

We adopted the rules of Davidai and Gilovich (2018, p. 443) to exclude outliers.³ In the American sample we excluded 59 participants in the regret condition resulting in a final sample of 253 participants, and 94 in the guilt condition (final sample = 206). In the Chinese sample, we excluded 14 participants in the regret of condition (final sample = 217) and 28 in the guilt condition (final sample = 192).⁴

Overall, the participants wrote about fairly intense emotional events. Participants in the regret condition, on average, scored between 5 and 6 on the 7-point scale ($M_{\text{American}} = 5.94$, $SD = 1.03$; $M_{\text{Chinese}} = 5.65$, $SD = 1.13$), $t(468) = -2.57$, $p = .01$.⁵ Participants in the guilt condition scored similarly high ($M_{\text{American}} = 5.60$, $SD = 1.24$; $M_{\text{Chinese}} = 5.74$, $SD = 1.22$), and not significantly different, $t(396) = 1.15$, $p = .25$.

We ran a binary logistic regression on the data in Table 2, comparing both Chinese and American proportions of choosing ideal self-discrepancies and ought self-discrepancies in the guilt versus regret condition. This analysis revealed that emotion was a strong and significant predictor of self-discrepancies, $B = -0.76$, $SE = -0.20$, $p < .001$, Wald's = 14.14, $\text{Exp}(B) = 0.47$, Odds ratio = 1.75. Consistent with H1, participants indicated that undoing regret, more than undoing guilt, would bring people closer to their ideal self than to their ought self.

This regression also revealed a significant effect of culture on self-discrepancies, $B = -0.86$, $SE = -0.21$, $p < .001$, Wald's = 17.67, $\text{Exp}(B) = 0.42$. When American participants thought about undoing their regret or guilt, they more often indicated that this would bring them closer to their ideal than when Chinese participants thought about this. As in Study 1, and again contrary to H2, there was no emotion \times culture interaction, $B = 0.38$, $SE = 0.28$, $p = .18$, Wald's = 1.82, $\text{Exp}(B) = 1.46$, indicating that the association of self-discrepancies with emotion did not differ by culture.

As in Study 1, we examined the association of self-discrepancies and regret versus guilt within each culture. Replicating Study 1 and Davidai and Gilovich (2018), 171 (67.60%) American participants indicated that the regret they wrote about reflected an ideal self-discrepancy, but only 82 (32.40%) indicated that it reflected an ought self-discrepancy, $\chi^2 (N = 253) = 31.31$, $p < .001$ ($\phi = 0.35$). Furthermore, whereas 121 (58.70%) American participants in the guilt condition indicated ideal self-discrepancies, only 85 (41.30%) indicated ought self-discrepancies, $\chi^2 (N = 206) = 6.29$, $p = .012$ ($\phi = 0.17$). Thus, as in Study 1, although participants reported both more guilt and regret for ideal self-discrepancy than ought discrepancies, American participants in the regret condition were significantly more likely to identify an ideal self-discrepancy than those in the guilt condition, $\chi^2 (N = 459) = 3.84$, $p = .050$.

For the Chinese sample, 122 (56.20%) participants in the regret condition indicated ideal self-discrepancies, and 95 (43.80%) indicated ought self-discrepancies, χ^2

($N = 217$) = 3.36, $p = .067$, $\phi = 0.17$. Unlike in Study 1, where ideals and oughts were equally associated with guilt, in Study 2 most Chinese participants in the guilt condition indicated ought self-discrepancies (120; 62.50%), χ^2 ($N = 192$) = 12.00, $p = .001$, $\phi = 0.03$. Regret and guilt thus differ in how they relate to ideal and ought self-discrepancies, χ^2 ($N = 411$) = 14.32, $p < .001$.

Thus, Study 2 offered consistent support for our prediction (H1) that regret, more than guilt, would be associated with ideal self-discrepancies. Moreover, in contrast to the cultural differences anticipated by H2, we found this pattern to be stable across cultural groups.

Study 2b

Method

We recruited 471 Chinese participants via www.sojump.com (254 females, $M_{\text{age}} = 33.06$, $SD = 6.61$), who participated in exchange for monetary compensation (3 yuan, equivalent to 0.42 USD). The procedure of Study 2b was identical to that of Study 2a.

Results and discussion

Self-discrepancy in regret and guilt. Again, we examined the intensity difference of each emotion. Participants in the regret condition, on average, scored between 5 and 6 on the 7-point scale ($M_{\text{American}} = 5.94$, $SD = 1.03$; $M_{\text{Older Chinese}} = 6.19$, $SD = 1.06$), $t(479) = 2.60$, $p = .01$.⁶ Participants in the guilt condition scored both very high ($M_{\text{American}} = 5.60$, $SD = 1.24$; $M_{\text{Older Chinese}} = 6.03$, $SD = 1.14$), and there is a significant difference between two samples, $t(447) = 3.91$, $p < .01$.

Culture. We replicated that regret and guilt differ in how they relate to ideal and ought self-discrepancies, χ^2 ($N = 471$) = 21.20, $p < .001$, $\phi = 0.21$. We also again found no gender effects ($p > 0.99$). See [Table 2](#). We next compared these new data with the American data from Study 2a. We replicated both the emotion and culture main effects on the self-discrepancies (for emotion, $B = -0.38$, $SE = 0.20$, $p = .05$, Wald's = 3.83, $\text{Exp}(B) = 0.68$; for culture, $B = -0.59$, $SE = 0.19$, $p = .002$, Wald's = 9.90, $\text{Exp}(B) = 0.55$). And, as in the original data there was no emotion \times culture interaction, $B = -0.47$, $SE = 0.28$, $p = .08$, Wald's = 2.98, $\text{Exp}(B) = 0.63$.

Do lay people use the words "regret" and "guilt" interchangeably? The open-ended recall procedure of Study 2 allowed us to explore two other interesting questions.⁷ The first one is that whether lay people will use the word regret to describe guilt experiences and use the word guilt to describe regret experiences, or more broadly, do they use the words interchangeably? For the American sample, we found that eight out of 206 (3.9%) recalled experiences in the guilt condition that participants used the word "regret" in their writings. Three of these experiences were related to education, the other five experiences are related to interpersonal relationships (friendship, love, and family). In the American sample we found one out of 253 (0.4%) recalled experience in the regret condition that used the word "guilt" (to describe a regret related to a family relationship). For Chinese college sample, we found that there are three out of 192 (1.6%) recalled experiences in the guilt condition that used the word "regret", two of them used both "regret" and "guilt"

together. The content of these three responses was related to education, relationships, or immoral behavior (steal product from shop). One out of 217 (0.5%) recalled experiences in the regret condition that used the word “guilt” to describe experience of not helping other people. For the older Chinese sample in Study 2b, there was one out of 243 (0.4%) recalled experiences in the guilt group that used “regret” to describe a regret related to a family relationship. There were no recalled experiences in the regret condition that used “guilt” to describe regret experience. In sum, we suggest that lay people are in general quite capable of differentiating these two emotions, as very few of them used the word regret to describe the guilt experiences, and vice versa. In total we found that 12 times (1.7%) the word regret was used in the guilt condition, and 2 times (0.3%) the word guilt was used in the regret condition. This is consistent with Zeelenberg and Breugelmans (2008) conclusion that regret is a broader emotion than guilt.

Action/inaction difference in guilt and regret. Another interesting question has to do with the action/inaction differences for guilt and regret. There is a large literature about action/inaction differences for regret, whether people feel more regret for things they did and should not have done (actions) or for things they failed to do and wish they had done (inactions). The typical finding is that in the short-term people feel more regret over actions, but in the long run they feel more regret over their inaction (Gilovich & Medvec, 1995), though numerous studies highlight the challenges of making a definitive general claim about this pattern (e.g., Gilovich, Medvec, & Kahneman, 1998; Zeelenberg, Van den Bos, Van Dijk, & Pieters, 2002). We are not aware of similar research on action/inaction differences for guilt. The open-ended questions used in Study 2 allowed us to examine this. The first author coded the data and we found that for the American sample (Study 2), guilt experiences are more likely to involve actions (122 [59.22%] actions vs. 77 [37.37%] inactions) than regret experiences (108 [42.68%] actions vs. 133 [52.56%] inactions); $\chi^2 (N = 440) = 11.99, p = .001$ ($\phi = 0.40$). The same pattern emerged in the Chinese college sample (guilt: 141 [73.43%] actions vs. 51 [26.56%] inactions; regret: 102 [47%] actions vs. 113 [52.07%] inactions), $\chi^2 (N = 407) = 28.49, p < .001$ ($\phi = 0.26$), and for the older Chinese sample (guilt: 140 [57.61%] actions vs. 83 [34.15%] inactions; regret: 113 [49.56%] actions vs. 107 [46.92%] inactions), $\chi^2 (N = 443) = 5.89, p = .015$ ($\phi = 0.11$). This finding, that compared with guilt, regret experiences involve more inaction, may be explained by regret being more related to ideal self-discrepancies, because most inactions are exactly unfulfilled goals (cf. Davidai & Gilovich, 2018).

General discussion

Guilt and regret are related emotions that are experienced frequently and have a clear impact on behavior. We examined the extent to which these emotions could be differentiated in terms of self-discrepancies: the realization that one’s actual self does not correspond to how one would ideally be (the “ideal self”) or what one should be to norms, obligations and responsibilities (the “ought self”). Based on Higgins’s (1987) self-discrepancy theory and Davidai and Gilovich (2018) empirical findings, the current research examined the prediction that regret would be associated more closely with actual/ideal self-discrepancies, while guilt would be associated more closely with actual/ought self-discrepancies.

In addition, this research explored the role of culture (USA and China) with respect to potential differences in self-discrepancies. Our studies clearly find that, compared to guilt,

people regret their failures to live up to their ideal selves more than failures to live up to their ought selves (replicating Davidai & Gilovich, 2018). These results were similar in both countries: We found that both emotions were experienced more for the ideal self-discrepancies in America than they were in China, both when participants recalled their most significant guilt or regret (Study 1) and when they introspected about whether undoing an experience of regret or guilt would drive them closer to their ideal or ought self (Study 2).

Re-examining the role of culture and age in regret and guilt

A clear drawback in our main studies was that the US and Chinese samples differed in age as well as cultural context. To address this, in Studies 1b and 2b, we collected data from online Chinese samples (via www.sojump.com) that were more comparable in age to the US Mturk samples. These two additional data sets mostly replicated the findings from Studies 1 and 2, with one exception. We did not find support for an effect of culture in Study 1b, but we did so in Study 2b. Of course, we can only speculate why this main effect of culture in Study 1 did not replicate. Perhaps this is related to the fact that Study 1 probed people's abstract beliefs about emotional experiences and their relation to self-discrepancies. In Study 2 we asked participants to recall personal emotional experiences, and we related these to self-discrepancies. Perhaps these cultures share similar lay beliefs, as reflected in Study 1, but differ in their recollections of actual emotional experiences. This finding is in line with Scollon, Diener, Oishi, and Biswas-Diener (2004) findings that culture may have an impact for some emotion measures, but not for others. Future research could investigate whether there are more cultural differences for specific emotion measures than for abstract emotion measures.

Relation to past research

Our finding that the individual experience of guilt is associated more with actual/ought self-discrepancies than regret is consistent with research by Imhoff, Bilewicz, and Erb (2012) on the collective forms of guilt and regret. These authors found that collective guilt, more than collective regret, is an emotion that mainly comes from an appraisal of social responsibility. Given that social responsibility is a form of obligation, and unmet obligations are a form of ought self-discrepancy, our model therefore provides another explanation of their results, and offers the additional suggestion that failures to meet collective ideals might result in greater collective regret than collective guilt.

In contrast to the assumption of Higgins' (1987) self-discrepancy theory that guilt primarily results from ought self-discrepancies, we found that US participants overall felt more guilt for ideal self-discrepancies than ought discrepancies. This result in our research is consistent with other previous results (e.g., Castonguay, Brunet, Ferguson, & Sabiston, 2012). To the extent that US participants chronically put more weight on their ideal selves than ought selves, they may in turn experience stronger emotions for events which are related to these ideal selves (Lee et al., 2000; Uskul et al., 2009). Indeed, Leder, Florack, and Keller (2013) found that people who are chronically promotion-focused (and thus chronically focused on their ideal self-guides) anticipate experiencing more regret from not fulfilling their ideal goals (rather than their ought goals). Future research might examine how individual differences in chronic self-guides relate to guilt versus regret.

In more general terms we believe that our results are important for both emotion research and research on self-discrepancies. One of the most important findings is that

guilt can be distinguished from regret on the basis of self-discrepancies. The literature as of yet is not unanimous as to whether guilt and regret are two separate emotions, or variants of a single emotion that goes by two names. According to our results, regret and guilt are best seen as different emotions, relating to different self-discrepancies.

We believe that our findings enrich Higgins (1987) notion of self-discrepancies. As we have reviewed before, the results of empirical tests of Higgins's prediction about guilt are not consistent, some studies found that guilt is related with ought self-discrepancies, other studies found that guilt is related with ideal self-discrepancies, such that our mini meta-analysis revealed that it is related to both self-discrepancies. The method of many previous studies further obscured this relationship. For example, self-discrepancies were examined by The Selves Questionnaire and emotions were measured using multi-item scales that often included guilt and regret within one scale, not allowing a comparison of these emotions. In our studies we adopted a method from Davidai and Gilovich (2018) to examine the relationships between self-discrepancies and guilt and regret. We asked people directly which self-discrepancy was associated with each emotion. This is a different way of assessing the relations between emotions and self-discrepancies that we feel offers important new insights into these emotions and into an influential framework.

Conclusion

Taken together, two studies addressed our central question: do distinct self-discrepancies produce regret versus guilt? Davidai and Gilovich (2018) found that regret was related to ideal-self-discrepancies, while Higgins (1987) assumed that guilt would be related to ought self-discrepancies. The result for regret is clear. People both in the USA and in China report more regret for ideal self-discrepancies than for ought self-discrepancies. The results for guilt are a bit more complex. Guilt was found to be associated more strongly with ideal self-discrepancies in the USA. We found the same in China in Study 1, but we found guilt was more strongly associated with ought self-discrepancies in China in Study 2. This pattern of results turned out to be explained by a cross-cultural main effect such that, overall, ideal self-discrepancies are more associated with both emotions in America than in China. This study is thus a first step in differentiating guilt and regret in terms of self-discrepancies. It also suggests that for US peoples, specific affective states may be more closely linked with individuals' goals and aspirations than with their sense of being who they feel that they should be, whereas for Chinese people, guilt is more closely linked with individuals' sense of responsibility than personals' goals and aspirations. Although both emotions result from an experience of personal failure, the present results suggest that what kinds of failures individuals experience, as well as their cultural context, will impact regret and guilt differentially.

Notes

1. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee (The Ethics Review Board of School of Social and Behavioral Sciences in Tilburg University, Reference number: EC.2018. EX54.) and with the 1964 Helsinki declaration and its later amendments or comparable ethical

standards. Informed consent was obtained from all individual participants included in the study.

2. All of these original data (also for Study 2) can be found at the OSF, via: <https://osf.io/6pvna/files>.
3. In the American sample, in the regret condition, two participants did not write about any regrets, 26 wrote about general or meaningless words (e.g., “good”, “emotion”), 27 participants wrote that they felt no regret (“nothing” “na”), three of them wrote about regrets outside of their control (e.g., “friend death”), and one participant indicated that he felt minimal regret. Omitting these 59 participants from the analyzes resulted in a final sample of 253 participants. In the guilt condition, two participants did not write about any guilt, 39 wrote about general or meaningless words (e.g., “good”, “yes”), 48 participants wrote that they felt no guilt, one of them wrote about guilt outside of their control (e.g., “A death of family member”), and four participants indicated that they felt minimal guilt. Omitting these 94 participants from the analyzes resulted in a final sample of 206 participants. In the guilt condition, more Mturk participants left the question blank or wrote meaningless words. We think that recalling guilt is more difficult or more unpleasant to share than recalling regret. In the Chinese sample, in the regret condition, five participants did not write about any regrets, six of them indicated that they felt minimal regret, three of them wrote meaningless Chinese words. In the guilt condition, 25 of participants did not write down any guilt, two of them wrote meaningless Chinese words. One participant indicated that he felt minimal guilt.
4. If we analyze all American data ($N = 612$) without exclusions, we found that people feel more regret (208 out of 312, 66.70%) for ideal self-discrepancies, $\chi^2 (N = 312) = 32.38, p < .001$, people feel more guilt (183 out of 300, 61.00%) for ideal self-discrepancies, $\chi^2 (N = 300) = 14.52, p < .001$. We did not find a significant difference in how these emotions relate to two self-discrepancies, $\chi^2 (N = 612) = 2.13, p = .14$. For the Chinese data ($N = 451$), we found that people feel more regret (129 out of 231, 55.80%) for ideal self-discrepancies, $\chi^2 (N = 231) = 3.15, p = .07$ people feel more guilt (137 out of 220, 62.30%) for ought self-discrepancies, $\chi^2 (N = 220) = 13.25, p < .001$. We found a significant difference in how these emotions related to two self-discrepancies, $\chi^2 (N = 451) = 14.84, p < .001$.
5. Although the intensity of regret differed significantly between the cultures, we did not find that the difference between intensity of regret in two groups had an effect on the self-discrepancies, $B = 0.05, SE = 0.06, p = .435, Wald's = 0.61, Exp(B) = 1.05$.
6. Although the intensity of regret differed significantly between the cultures, we did not find that the difference between intensity of regret had an effect on the self-discrepancies, $B = 0.60, SE = 0.09, p = .511, Wald's = 0.43, Exp(B) = 1.06$. And it is same pattern for the intensity of guilt ($B = -0.05, SE = 0.08, p = .519, Wald's = 0.42, Exp(B) = 0.95$).
7. We thank an anonymous reviewer for asking us to explore these.

Data availability statement

The data described in this article are openly available in the Open Science Framework at DOI:10.17605/OSF.IO/TPA6U.

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