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## Death and the Self

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### Abstract

It is an old philosophical idea that if the future self is literally different from the current self, one should be less concerned with the death of the future self (Parfit, 1984). This paper examines the relation between attitudes about death and the self among Hindus, Westerners, and three Buddhist populations (Lay Tibetan, Lay Bhutanese, and monastic Tibetans). Compared with other groups, monastic Tibetans gave particularly strong denials of the continuity of self, across several measures. We predicted that the denial of self would be associated with a lower fear of death and greater generosity toward others. To our surprise, we found the opposite. Monastic Tibetan Buddhists showed significantly greater fear of death than any other group. The monastics were also less generous than any other group about the prospect of giving up a slightly longer life in order to extend the life of another.

*Keywords:* Self; Personal identity; Death; Buddhism; Parfit

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### 1. Introduction

Many religions and much prereflective thought suggest that what I am—my self—is something that persists from childhood through old age. I exist to the extent that my self exists. As intuitive as this idea may be, it is disputed by scientists and philosophers from both Eastern and Western traditions. Buddhists, joined by Western philosophers such as Hume and Parfit, reject the idea that there is any unitary self that persists throughout the

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lifespan. Instead, they argue, we are constituted by a loose set of traits and mental events. Those traits are ever in flux, and those events are but momentary.

Buddhist philosophers argue that the illusion of a persisting self underlies our fear of death. Once we recognize that there is no self that persists across the lifespan, fear of death should be alleviated, since its very foundation has been undermined. Similarly, Derek Parfit argues that coming to believe that there is no unitary enduring self should lead to changes in practical attitudes, including regard for others (1984, 451), the propriety of punishment (1984, 326), and fear of death (1984, 281–2, 347, 451).

Previous work has shown that beliefs about the persistence of the self affect charitable giving (Bartels, Kvaran, & Nichols, 2013; see also Bartels & Urminsky, 2011) and judgments about the propriety of punishment (Mott, forthcoming; Tierney, Howard, Kumar, Kvaran, & Nichols, 2014). In the present paper, we explore whether beliefs about the persistence of self also affect fear of death by examining cultural groups with different beliefs about the persistence of self.

The notion of a core, immutable self seems so immediate and obvious to those who have grown up in Western, Abrahamicly inflected cultures that it is easy to assume it is a cultural universal. But at least at the level of explicit teachings, there are stark differences in how religio-cultural traditions portray the self. Three major religious traditions—Christianity, Hinduism, and Buddhism—promote very different views about the self.

European and American culture is strongly shaped by Christianity, with a belief in a soul distinct from the body. The soul persists from birth to death as a numerically identical object and can inhabit different bodies (or even without a body) while retaining its identity. The self is characteristically identified with the soul in this framework, so to ask about postmortem survival is to ask whether one's soul survives the death of the body, typically to live on in a disembodied state in the afterlife. To believe in such survival in this cultural context would suggest a strong sense of personal identity independent of physical identity.

Hindu culture in India takes *reincarnation* for granted. Unlike American Christian culture, this belief is not a belief in a disembodied existence. But, as in Christianity, it does involve commitment to a soul, or *ātman*, that is numerically identical throughout life and persists from biological life to biological life. Although *ātman* is not physical, it always resides within a physical body. The self is typically identified with the *ātman*. While our traits—including even our species—may change, the *atman* remains numerically identical and unchanging.

Tibetan culture is deeply inflected by Indo-Tibetan Buddhism. According to that philosophical and religious framework, everything is impermanent and fleeting. There are no enduring things and no essences. Importantly, this impermanence extends to the self. The self is regarded as an illusion, and there is no personal identity from moment to moment (see, e.g., Carpenter, 2014; chapter 2; Garfield, 2015; chapter 4; Siderits, 2007, chapter 3). Buddhist religious practice is aimed at overcoming what is regarded as the instinctive illusion that there is a self. This is a central part of Tibetan culture. In this cultural framework, no self could survive death, or even momentary change in life. Indeed, certain meditation practices aim precisely to disestablish such a view of self.

In the studies that follow, we investigate the attitudes of people from all of these traditions. In section 2, we report studies on attitudes regarding the self. Here, our goal is to see whether the views about the self promoted by the religious traditions are reflected in the judgments of the people in the different cultures. In section 3, we report studies on attitudes about death. Buddhists argue that we only fear death because we suffer from an illusion of a persistent self: if the self does not exist, it is irrational to fear the death of self. It is, however, an empirical question whether practitioners actually adjust their attitudes in these rational ways. Accordingly, we also investigated attitudes about death.

Our participants include the following: Orthodox Hindus from around Varanasi, India; Abrahamic (95% Christian) and nonreligious subjects from the United States, through Amazon's Mechanical-Turk; Tibetan Buddhists from monasteries in Byalkuppe and Mundgod, India; Lay Tibetans from Northern India; and Tibetan Buddhists from Bhutan. In addition, we asked a group of senior Tibetan monastic scholars to respond to a subset of the questionnaires in the way that a good Buddhist *ought* to. This provided a way to compare doctrinal Buddhist responses to the responses of our Buddhist participants.

Experimental materials were written in English, then translated into the native tongue of the participants (Standard Tibetan for Tibetans, Hindi for Indians, and Dzongkha for Bhutanese). The translations were prepared by fluent bilingual research assistants. After the translations were produced, they were cross-checked for agreement by independent bilingual evaluators and checked for ease of comprehension by interviewing monolingual informants.

Asian participants filled out paper packets, which were issued by research assistants who were fluent in the participant's native language. Each packet contained multiple, partially overlapping surveys (for instance, all participants received the Fear of Personal Death scale, but only some subjects received the Tradeoff study). Surveys within each packet were presented in one of two orders; the second order was the reverse of the first. Packets were presented in counterbalanced order between subjects. Within-survey item order was fixed between subjects.

American participants completed virtual "packets" online. There were two different packets, with full randomization of surveys between subjects. As with the Asian participants, packets were presented in counterbalanced order between subjects and within-survey item order was fixed between subjects.

## 2. Attitudes about the self

Our first set of studies examined attitudes about the self. Here, we simply wanted to determine whether the explicit religious differences concerning the self would be reflected in the judgments of practitioners. For our populations, only the Buddhist tradition maintains that there is no self. As a result, we expect the participants from Buddhist populations to be more likely to deny that there is a persisting self.

## 2.1. Connectedness

### 2.1.1. Methods

Five hundred and twenty participants (101 Americans, 99 Bhutanese, 60 Indians, 60 Tibetan monastics, 200 lay Tibetans; 40.4% female) were asked how similar their current self was to their future self 1 week, 1 year, and 5 years from now (see, e.g., Bartels & Urminsky, 2011). The wording of this question presented a *trait self* view. That is, participants were not asked to assess some abstract or metaphorical sense of similarity, but concrete psychological traits:

Please think about the important characteristics that make you the person you are now—your personality, temperament, major likes and dislikes, beliefs, values, ambitions, life goals, and ideals—and please rate the degree of connectedness between the person you expect to be in [1 week/1 year/5 years] compared to the person you are now where 0 means “I will be completely different in the future” and 100 means “I will be exactly the same in the future.”

All participants responded to all three versions of this question. Note that a higher score indicates greater connectedness with the future self.

### 2.1.2. Results

As a first pass, we tested whether there was a main effect of culture on overall connectedness, averaged across the three questions. We predicted that Americans would have the highest overall belief in connectedness of the self across time, and that the group that had been most exposed to Buddhist doctrine (the monastic Tibetan Buddhists) would show the lowest belief in connectedness. An omnibus test (one-way between subjects analysis of variance (ANOVA)) using culture as the independent variable and pooled connectedness score as the dependent variable was significant [ $F(4,515) = 45.72, p < .001, \eta^2 = 0.26$ ]. Pairwise *t* tests between all levels in the culture condition were run, followed by Holm correction for multiple comparisons.<sup>1</sup> Americans ( $M = 78.7$ ) held higher self-connectedness beliefs than Bhutanese ( $M = 52.1, t(150.3) = 5.7, p < .001, \text{Glass}' \Delta = 0.65$ ), Indians ( $M = 56.8, t(86.9) = 4.3, p < .001, \Delta = 0.62$ ), Tibetan monastics ( $M = 6.1, t(149.4) = 23.5, p < .001, \Delta = 4.32$ ), or lay Tibetans ( $M = 49.0, t(289.6) = 8.8, p < .001, \Delta = 0.81$ ). On the other end of the spectrum, Tibetan monastics had lower connectedness than any other group, including lay Tibetans (all  $|t| > 9.9$ ; all  $p < .001$ ; all  $\Delta > 1.61$ ). No other pairwise comparisons were significant; that is, Indians, Bhutanese, and lay Tibetans were not significantly different from one another with respect to overall connectedness with the future self (all  $p > .41$ ). See Fig. 1.

An ANOVA identical to the one above but including time period as a continuous independent variable<sup>2</sup> revealed a main effect of time on self-connectedness. Across cultures, the greater the time discrepancy, the less connected the future self was judged to the present self [ $F(1,4) = 105.99, p < .001, \eta^2 = 0.03$ ]. This model also reveals a significant interaction between culture and connectedness over time [ $F(1,4) = 6.70, p < .001, \eta^2 = 0.01$ ].

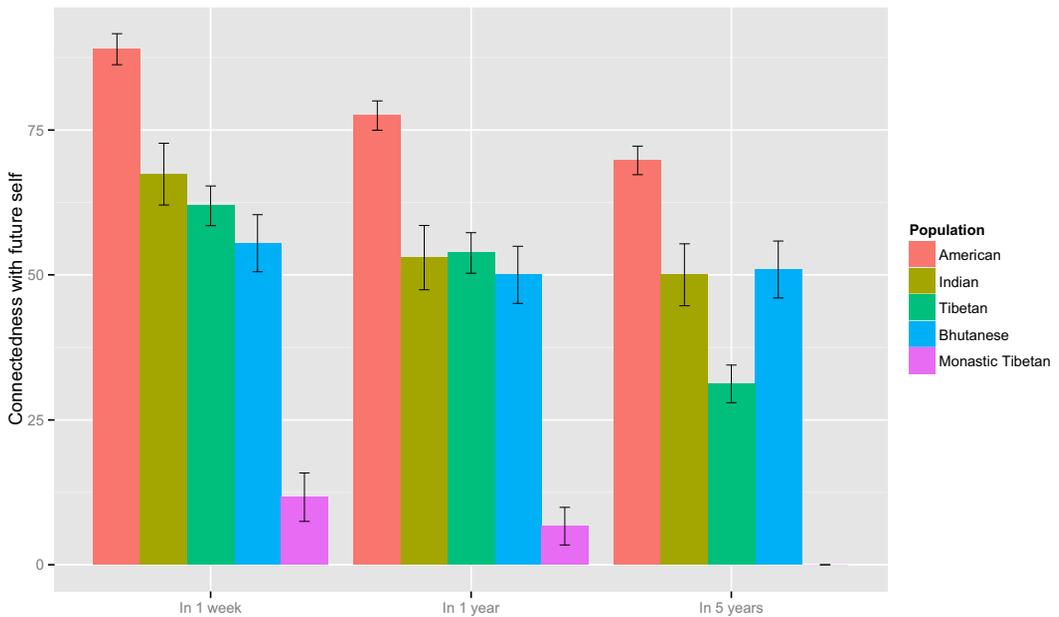


Fig. 1. Beliefs of connectedness between present and future self 1 week, 1 year, and 5 years from present. Bars represent the standard error. Note black line at the intercept for “5 years”: all Tibetan monastics-in-training gave a response of zero.

On the basis of these results, we wished to further test whether the lay Tibetans perceived greater personal discontinuity over time than Bhutanese or Indians. We constructed an ANOVA with time as a within-subjects continuous variable and a coded contrast between lay Tibetans (1), Bhutanese (−1), and Indians (−1) as the other independent variable. Although there is no main effect for connectedness between these cultures [ $F(1,518) = 1.47, p = .23$ ], there is a significant interaction: Lay Tibetans perceived steeper discontinuity over time than the other two Asian populations [ $F(1,1) = 21.65, p < .001, \eta^2 = 0.004$ ]. Using a general linear model that included participant age as a predictor, we found that age had no reliable impact on connectedness beliefs when controlling for religion ( $p = .09$ ). Whether the American subjects were Christian or nonreligious<sup>3</sup> did not affect connectedness beliefs (pairwise  $t$  test,  $p = .95$ ).

In sum, we find that Americans perceive the greatest connectedness of their trait self over time, compared with any of the Asian populations. The population with the greatest exposure to Buddhist doctrine, the Tibetan monastics, expressed the least connectedness. Likewise, lay Tibetans show a steeper decline in connectedness over time than Indians or Bhutanese. That said, even Tibetan monastics report some degree of trait continuity over the course of a week and a year.

## 2.2. Core self

In addition to questions gauging the continuity of the self, our survey contained questions aimed at beliefs about the self as a more abstract entity. Regardless of how much the traits of the self may change over time, is there any sense in which there is a core self that persists over the lifetime?

### 2.2.1. Methods

We asked the same group of 520 participants the extent to which they agreed with each of the following statements:

There is some essential core that is your self that stays exactly the same throughout your life.

My core self will be exactly the same in a year as it is now.

Subjects rated each question on a Likert scale from 1 (strongly disagree) to 7 (strongly agree), where higher score corresponds to greater belief in a core self. We also asked 30 Buddhist scholars to respond to these questions as a Buddhist ideally would.

### 2.2.2. Results

An ANOVA revealed no significant main effect of question type ( $p > .05$ ) or interaction between condition and question type ( $p > .05$ ). Therefore, we averaged responses to these two questions together into a single core self measure. Holm-corrected pairwise  $t$  tests for all conditions were run, with the single core self score as the dependent measure. Americans ( $M = 5.45$ ) held higher core self beliefs than Bhutanese ( $M = 2.99$ ,  $t(164.2) = 9.25$ ,  $p < .001$ , Glass'  $\Delta = 1.09$ ), Tibetan monastics ( $M = 1.71$ ,  $t(120.9) = 16.0$ ,  $p < .001$ , Cohen'  $d = 2.62$ ),<sup>4</sup> lay Tibetans ( $M = 3.11$ ,  $t(275.7) = 11.5$ ,  $p < .001$ ,  $\Delta = 1.12$ ), or Ideal Tibetans ( $M = 1.53$ ,  $t(48.2) = 13.6$ ,  $p < .001$ , Cohen's  $d = 2.79$ ), but not Indians ( $M = 5.38$ ,  $t(93.5) = 0.24$ ,  $p = 1.00$ ). Bhutanese and lay Tibetans were not significantly different, nor did Tibetan monastics differ from normative responding (both  $p = 1.00$ ). All other pairwise comparisons were significant (all  $|t| > 4.30$ ; all  $p < .001$ ; all  $\Delta > 0.66$ ). See Fig. 2.

Using a general linear regression that included participant age as a predictor, we found a weak but reliable effect of age on core self beliefs, such that older participants had stronger core self beliefs when controlling for religious background ( $\beta = 0.02$ ,  $p = .03$ ). Including age as a predictor does not change the statistical significance of the cross-cultural differences reported above. Whether the American subjects were Christian or nonreligious did not affect beliefs about the continuity of the core self (pairwise  $t$  test,  $p = .60$ ).

Our two measures of diachronic self continuity—core self and trait self—were largely consistent with one another. Indeed, a bivariate correlation test revealed a strong positive correlation between overall connectedness score and core self score ( $r(518) = .33$ ,  $p < .001$ ). We found that Tibetan monastics endorse less self continuity than other groups, and Americans endorse the most. While the lay Asian populations we studied are similar in their endorsement of a trait self that changes moderately over time, the

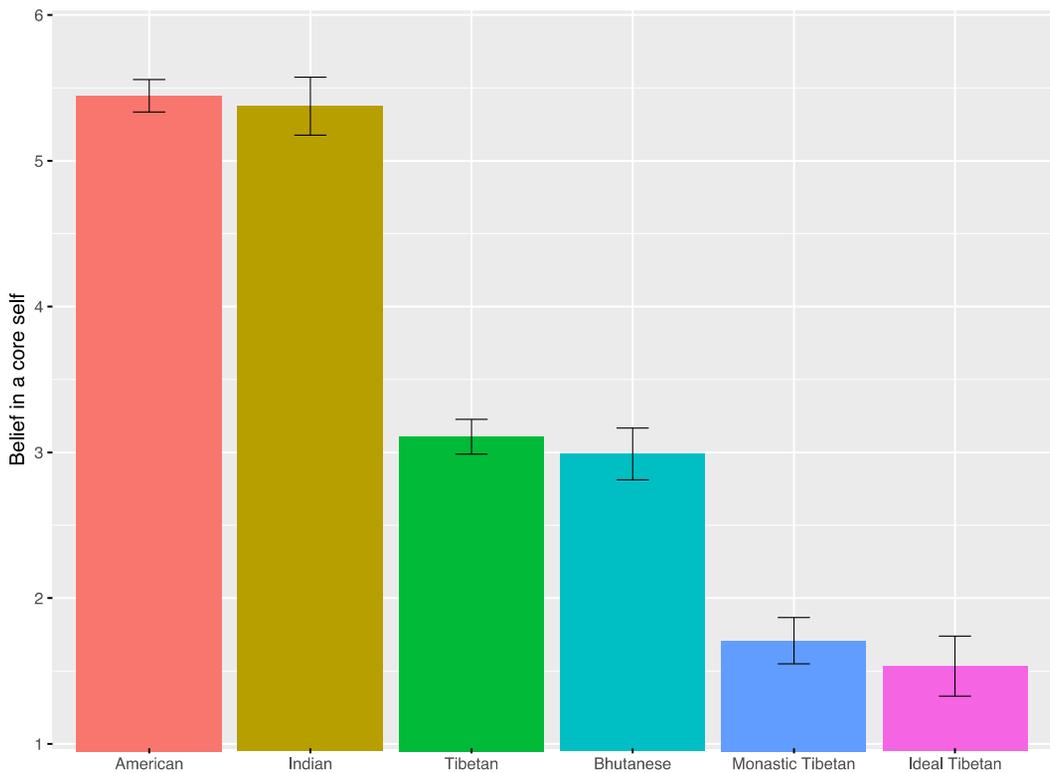


Fig. 2. Belief that there is a core self that persists over time. Higher score indicates greater belief in a core self. Bars represent the standard error.

Buddhists (both lay and monastic) are unique in rejecting the idea of a core self. To sum, Americans believe in a stable trait and core self, Tibetan Buddhists (especially Buddhist monastics) endorse an impermanent trait and core self, and Hindus believe in a self whose traits change, but whose core stays the same.

### 2.3. Coping with death

#### 2.3.1. Methods

One of the putative benefits of the no self doctrine is it should reduce fear of death: If we come to believe that the self does not persist from day to day, then it should not seem so significant that the self fails to persist after biological death. We developed the Death Coping Checklist (DCC) to measure the extent to which Buddhists and others report using such beliefs to help them cope with the prospect of death.

The DCC is a list of 10 sources of reassurance that death should not be feared (see Supplemental Materials). Participants checked off all that applied to them. Of interest to this analysis was the item that had to do with the doctrine of no self (“There is no self that stays the same across time anyway.”)

Five hundred and nineteen participants (101 Americans, 99 Bhutanese, 60 Indians, 60 Tibetan monastics, 199 lay Tibetans; 40.3% female) filled out the Death Coping Checklist. This group of participants is partially, but not entirely, overlapping, with the set who responded about self-connectedness. Of the American participants, 47 identified as Christian and 46 identified as nonreligious. The eight American participants who indicated other religions were excluded from this analysis. As stated earlier, we also gathered responses from 30 Buddhist scholars, who were instructed to respond the way a good Buddhist ought to respond. We include these results so they can be compared against Tibetan monastics.

### 2.3.2. Results

A chi-square analysis revealed a significant correspondence between religion and using the no-self coping strategy ( $\chi^2(5) = 159.74, p < .001$ , Cramér's  $V = 0.55$ ). Subsequently, chi-square analyses were run for all pairwise comparisons. Ninety-five percent of Tibetan monastics affirm this coping strategy, a response rate that was statistically indistinguishable from the percent of Buddhist scholars who think this is how a Buddhist should ideally respond (90%). Bhutanese (75%) and Indian (67%) responding was not statistically distinguishable, nor were Nonreligious Americans (9%) and Christian Americans (0%). All other comparisons were significant ( $p < .01$ ), including lay Tibetans (45%) and Tibetan monastics. (See Fig. 3.)

Using a binomial linear regression that included participant age as a predictor, we found a weak but reliable effect of age on using the no self doctrine as a coping strategy, such that older participants were more likely to report using the no self doctrine when controlling for religious background ( $\beta = .03, p = .02$ ). Including age as a predictor does not change the significance of the cross-cultural differences reported above.

In short, we find that Asian populations report that the no self doctrine is a reason not to fear death. This strategy was near-universal among Tibetan monastics, and near-absent among Americans (indeed, completely absent among American Christians). Although Buddhists report that this doctrine is used to allay their fear of death, this does not necessarily mean it is effective at its assigned role. This will be critical for interpreting the fear of death results discussed later in the paper.

### 2.4. Discussion

Across all measures on attitudes about self, we found the predicted differences for Tibetan Buddhist monastics. The monastics were more likely to say that they would not be connected with the self over time; they were more likely to deny that there is a core self; and they were more likely to say that they used the no-self doctrine to cope with death. Like the monastics, the lay Tibetans and Bhutanese tended to deny the existence of a core self. But on this and all other measures, the Tibetan monastics showed a much stronger and more consistent rejection of a persisting self. This might be expected given that the monastics will likely have had more intensive training in the Buddhist doctrine of no self.

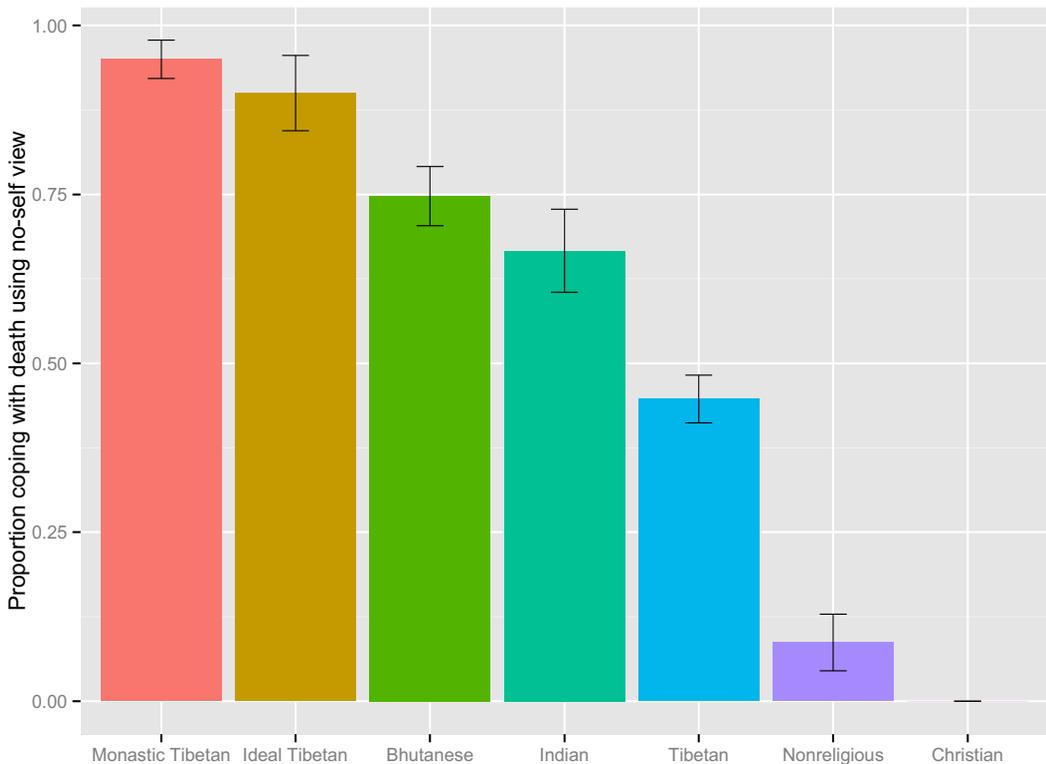


Fig. 3. Proportion of respondents saying they cope (or in the case of Ideal Tibetans, ought to cope) with the prospect of death by thinking about how there is no continuous self. Bars represent the standard error. No Christians reported using this strategy as a way of coping with death (horizontal line segment).

### 3. Attitudes about death

Our second set of studies explores attitudes and decisions concerning future death. We knew from the previous studies that Tibetan Buddhists, especially the monastics, were less likely to maintain that there is a persisting self across time. Hence, we predicted that the Buddhist participants, and especially the monastics, would show less fear of death and less valuation of their own lives compared with other religious groups. This is in line with Buddhist teachings, which hold that the no-self doctrine provides an antidote to fear of death and to egocentricity. However, as we shall see, we found no evidence at all for this.

#### 3.1. Fear of personal death

##### 3.1.1. Method

Participants filled out the Fear of Personal Death scale (FPD; Florian & Kravetz, 1983). The FPD is a scale of 31 items designed to assess what scares them most about the prospect of dying in a year, rated on a scale from 1 (totally correct) to 7 (totally

incorrect). The scale comprises six factors: loss of self-fulfillment, loss of social identity, consequences to family and friends, transcendental consequences, self-annihilation, and punishment in the hereafter (see Supplemental Material for the full scale). We selected this scale because it contains a dimension that measures fear of future self-annihilation, which is the aspect of fear of death that is especially targeted by the Buddhist tradition. On the Buddhist tradition, there is no self, so one should not fear its future disappearance. As a result, we predicted that fear of future self-annihilation would be reduced in Buddhist populations. The self-annihilation factor consists of four items, including “Dying 1 year from now frightens me because of the loss and destruction of the self” and “Dying 1 year from now frightens me because of the destruction of personality.”

One thousand five hundred and eighty-five participants (695 Americans, 99 Bhutanese, 300 Indians, 300 Tibetan monastics, 200 lay Tibetans; 44.3% female) took the FPD scale. Of the American participants, 359 identified as Christian and 297 identified as nonreligious. The 39 American participants who indicated other religions were excluded from this analysis. The same 30 Buddhist scholars were also polled, and they were instructed to respond the way they thought a good Buddhist ought to respond.

### 3.1.2. Results

Before analysis, all items were reverse-scored so that higher values indicated more fear. The four items that comprise the self-annihilation subscale form a reliable factor (Cronbach’s  $\alpha = 0.84$ ) and therefore were averaged together as a single “self-annihilation” measure for further analysis. Pairwise  $t$  tests revealed that Tibetan monastics fear self-annihilation ( $M = 5.74$ ) more than any other group (M Bhutanese = 3.63, M Nonreligious = 3.33, M Indian = 3.27, M Christian = 3.11, M lay Tibetan = 3.04; all  $|t| > 10.10$ ; all  $p < .001$ ; all Glass’  $\Delta = 1.61$ ). No other pairwise comparisons for these populations reached significance.

This is in stark contrast to the canonical response indicated by Tibetan Buddhist scholars, that good Buddhists should be especially unafraid of self-annihilation ( $M = 2.23$ ). This score is significantly lower than those given by all other Buddhists, including the lay Tibetans ( $t(36.12) = 2.39$ ,  $p = .02$ ,  $\Delta = 0.46$ ), the Bhutanese ( $t(52.44) = 3.74$ ,  $p = .007$ ,  $\Delta = 0.80$ ), and especially the Tibetan monastics ( $t(32.33) = 10.70$ ,  $p < .001$ ,  $\Delta = 2.01$ ). See Fig. 4.

When we look at aspects of the fear of death other than self-annihilation, we find that Buddhist monastics do not fear death more overall. Their net FPD scores are indistinguishable from most of the other groups, aside from Indians ( $t(563) = 6.17$ ,  $p < .001$ ,  $\Delta = 0.58$ ) and the Tibetan ideal ( $t(32) = 3.37$ ,  $p = .001$ ,  $\Delta = 0.63$ ). See Supplementary Materials for a breakdown of FPD results on all of the measured dimensions.

Using a general linear regression that included participant age as a predictor, we found a reliable effect of age on fear of self-annihilation, such that older participants were less afraid of self-annihilation when controlling for religious background ( $\beta = -0.03$ ,  $p < .001$ ). However, this effect was driven by non-Buddhists. That is, we found this negative relationship for Indians ( $\beta = -0.04$ ,  $p < .001$ ), Christian Americans ( $\beta = -0.03$ ,  $p < .001$ ), and Nonreligious Americans ( $\beta = -0.03$ ,  $p < .001$ ). For Buddhists there was

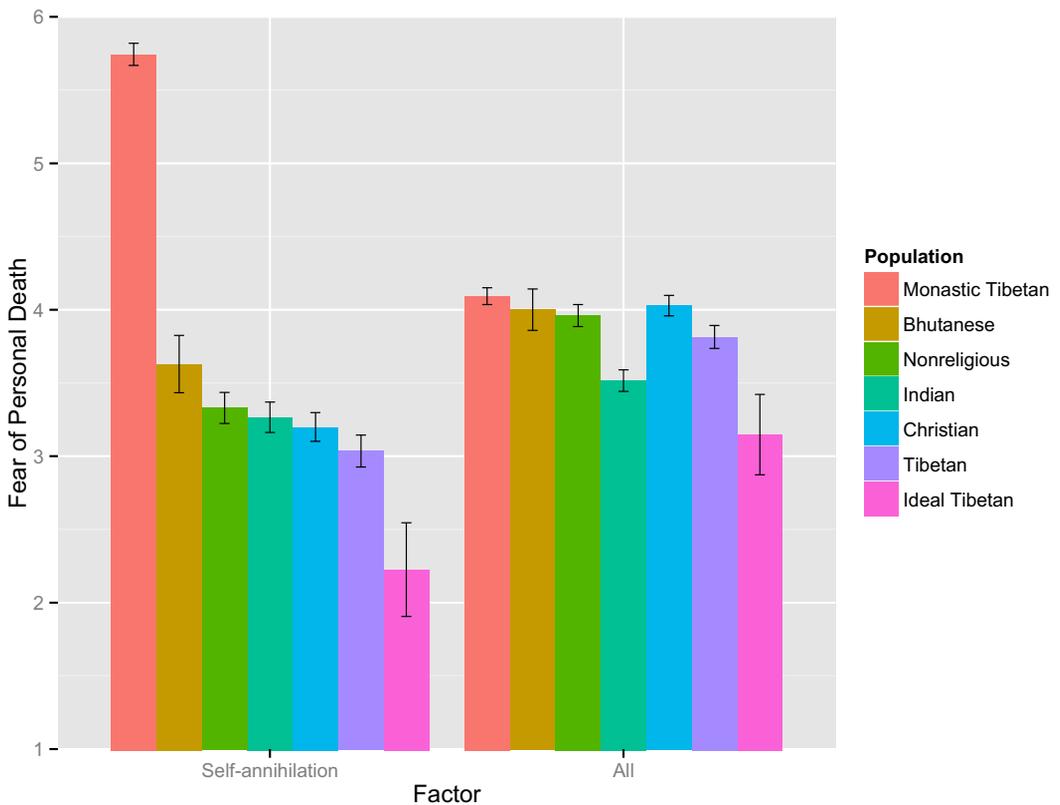


Fig. 4. Score on the Fear of Personal Death scale divided by population, for the self-annihilation factor alone and for all six factors combined. Bars represent the standard error.

no reliable effect of age on self-annihilation fear, whether monastic Tibetan ( $p = .51$ ), lay Tibetan ( $p = .75$ ), Bhutanese ( $p = .69$ ), or ideal Tibetan ( $p = .30$ ). Including age as a predictor does not change the statistical significance of the cross-cultural differences reported above.

We next wished to test whether these results could be explained by Tibetan monastics holding a weaker belief in the afterlife than other religious groups. Our survey included a question (at the end of the survey) on degree of belief in life after death (Likert scale 1–7, higher score indicating greater agreement). We found that Tibetan monastics indicated no less belief in an afterlife than the other religious groups (see Fig. 5). Thus, the fact that monastic Tibetans had greater fear of self-annihilation cannot be explained by a comparative lack of belief in an afterlife.

### 3.1.3. Discussion

A central tenet of Buddhism is that we only fear death because we suffer from an illusion of a persistent self. Giving up that belief should reduce fear of death. In particular, it should reduce fear of death of the self. To confirm this, we asked Tibetan scholars to

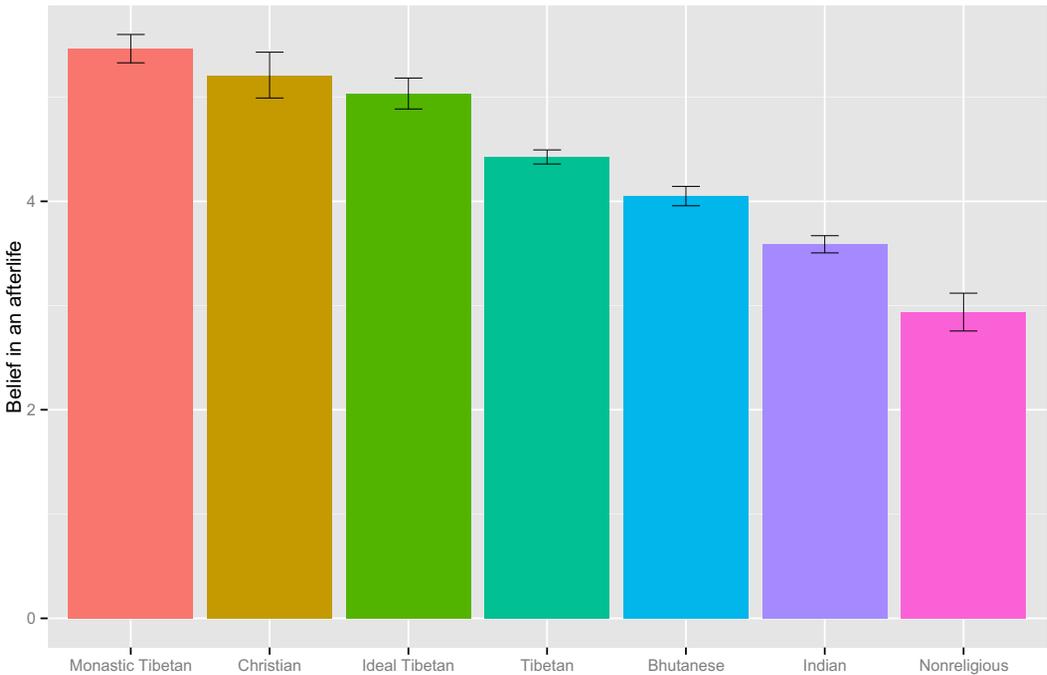


Fig. 5. Belief in life after death. Bars represent the standard error.

indicate how much a good Buddhist should fear death. They maintained that Buddhists should have very little fear of death of self (as reflected in the self-annihilation subscale). All of the groups we surveyed reported significantly greater fear of death of self than the Ideal Tibetan response. Contrary to our predictions, the monastic Tibetans did not report lower fear of self-annihilation than the other groups. Indeed, they reported much more fear of self-annihilation than any other group. It is particularly striking that even nonreligious Westerners reported much less fear of self-annihilation than the monastic Buddhists we studied.

### 3.2. Tradeoff

Many in the Buddhist tradition, following classical Indian Buddhist philosophers such as Kamalaśīla and Śāntideva, argue that one of the important consequences of realizing the absence of self and impermanence is the reduction in egocentricity, reflected in the increase in generosity, care, love for others, and the self disappearing as an object of special concern (Garfield, 2015). So, one would expect, if this view is right, that those who see the self as insubstantial and impermanent would be less likely to value their own lives over those of others. Indeed, canonical descriptions of non-egocentricity, generosity, and care are replete with examples of individuals who willingly sacrifice their own good for that of others. The next study explores this with our populations.

### 3.2.1. Method

Participants were given a task developed from those used to assess the influence of intertemporal self-connectedness on future decision-making (e.g., Bartels & Urminsky, 2011). In this task, participants have to decide the extent to which they would trade off months of their own life for an increasing amount of time for another person. Participants were shown the following instructions:

Imagine that you have a terminal disease that will kill you in 6 months unless you take a medication. There is only one dose of the medication available. If you take the medication, it will prolong your life by 6 months. So if you take the medicine, you will live for 12 months instead of 6. If you don't take the medication, it will go to someone else who has the same condition and will die in 6 months. This person is very much like you but a stranger whom you will never meet or be in contact with.

Participants then indicated whether they would choose to give the medicine to themselves or the stranger if the medicine had varying degrees of efficacy for the stranger. The shortest possible extension of the stranger's life by the medicine was "1 month or less"; the longest was "more than 5 years," with eight additional intervals (2 months, 3 months, 6 months, 1 year, etc.) in between. The medicine was always said to prolong the participant's life by 6 months. Each participant therefore rendered 10 responses (one for each self-other paired decision). Responses were scored by counting the number of times a person opted to give the medicine to themselves; scores ranged from 0 to 10. A score of zero would mean a subject would give up their medicine to the stranger regardless of how long it would prolong their life; a score of 10 would mean a subject would keep the medicine for themselves even if the medicine would prolong the stranger's life by 5 or more years.

One thousand one hundred and eighty-one participants (701 Americans, 240 Indians, 240 Tibetan monastics; 42.2% female) took the tradeoff task. Of the American participants, 311 identified as Christian and 276 identified as nonreligious. The 41 American participants who indicated other religions were excluded from this analysis, as were 73 Americans who gave incoherent answers (i.e., choosing to keep the medicine that would keep the stranger alive for more time when they had already chosen to give away the medicine when the stranger lived for less time). One Indian subject was excluded for having missing data. We did not collect data from Tibetan or Bhutanese lay Buddhists.

### 3.2.2. Results

For ease of comprehension, responses were Z-scored before analysis. Pairwise *t* tests revealed that Tibetan monastics are more egocentric in the tradeoff task ( $M = 0.67$ ) than Indians ( $M = -0.15$ ,  $t(448.5) = 9.92$ ,  $p < .001$ , Glass'  $\Delta = 0.91$ ), American Christians ( $M = -0.24$ ,  $t(543.5) = 12.54$ ,  $p < .001$ ,  $\Delta = 1.08$ ), or nonreligious Americans ( $M = -0.18$ ,  $t(509.8) = 10.91$ ,  $p < .001$ ,  $\Delta = 0.95$ ). Responses from the other groups were not significantly different from one another (all  $p > 0.77$ ). See top panel of Fig. 6.

Not only were Tibetan monastics more likely to keep the medicine, the majority of them received the highest possible score, that they would not give their medicine away

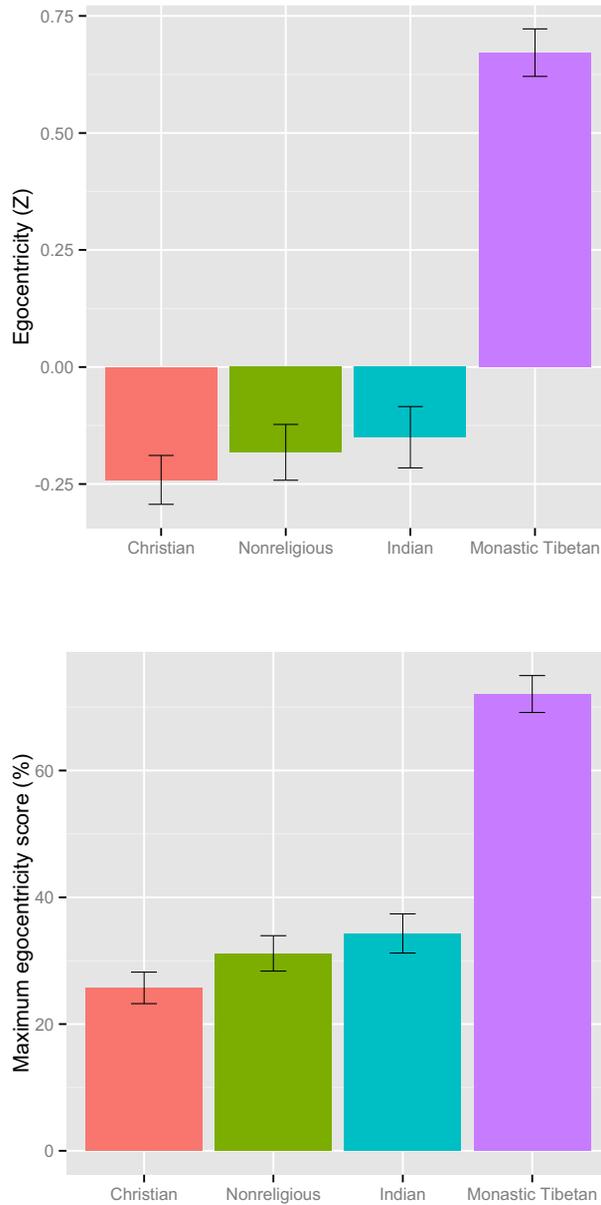


Fig. 6. Preference for self as measured by the amount of additional time a stranger would have to live before you would give them your medicine. Responses are Z-scored. Percent of respondents in each condition scoring at ceiling for egocentricity—not giving their medicine even if the stranger would live 5 years or more. Bars represent the standard error.

even if the stranger were to live another 5 years or more. Compared with 34.3% of Indians, 25.7% of American Christians, and 31.2% nonreligious Americans, 72.1% of Tibetan monastics indicated this response (Fig. 6, bottom panel). A chi-square analysis for all

pairwise comparisons revealed that this response rate is significantly higher for the Tibetan monastics (all  $p < .001$ ), but not among any of the other populations (all  $p > .16$ ). Using a general linear model that included participant age as a predictor, we found that age had no reliable impact on performance on the tradeoff task when controlling for religion ( $p = .46$ ).

Because of this ceiling effect, the upper limit of egocentricity among the monastic Buddhists remains indeterminate. How much additional life for a stranger would be enough for most Tibetan monastics to allow that they would give away their medicine? Since we do not know the answer to that, these results may underestimate the difference in selfless giving between Tibetan monastics and other populations.

### 3.2.3. Discussion

There are several ways to interpret this study, some more optimistic than others. One is that Buddhists are more honest about what they would do with medicine if they were sick. While this possibility cannot be ruled out, it would mean that all three comparison groups (Indians, Christian Americans, and nonreligious Americans) are more dishonest than the Tibetans, and we have no good reason to suspect this. Furthermore, the social desirability of answers on the Tradeoff task is far from obvious. Another possibility is that the Tibetan monastics consider their lives more valuable than that of a stranger, because they are more likely to contribute to the world than a person selected at random.

To rule out these possibilities, future studies should measure actual egocentric behavior, see if performance changes when members of the in-group are used (e.g., trading months off your life vs. a Buddhist you have never met), and collect self-report data. Perhaps such work will reveal a principled reason for why the monastic Tibetans gave such egocentric responses. On the other hand, future work should also explore what the upper bound is for the egocentric responses among the monastics. Because the majority of Tibetan responses were at ceiling for egocentricity, this study may fail to capture just how dramatic these differences are.

### 3.3. Discussion

Contrary to our central prediction, we did not find that Buddhist monastics showed less fear of self-annihilation than Abrahamics and Hindus. Indeed, to our astonishment, we found that the monastics showed *greater* fear of self-annihilation than any other group, including lay Tibetans and Western nonbelievers. Furthermore, the Buddhist monastics were less generous with months of their own lives than the Hindus, the Abrahamics, and the Western nonbelievers.

In light of how surprising our results are, it is worth reviewing some of the limitations and alternative explanations of the research. One possibility is that the results on the increased fear of self-annihilation among monastics is a fluke of the sample. We think this is unlikely partly since we sampled from two geographically distinct monasteries, but more importantly because the results on the self-annihilation measure cohered with the results on tradeoff task. In both studies, the monastic Tibetans exhibited significantly higher concern for self-preservation.

Another explanation for our findings might be that the monastic Tibetans did not really believe the no-self view. We think there might be something right about this, but caution is required. Almost all Tibetan monastics in our sample report that they rely on the no-self doctrine as reassurance that death should not be feared. Furthermore, across several measures, we found the monastics to maintain that there is no self. And this is an absolutely central part of their religious tradition. It is as central to Buddhism as the belief that Jesus is the son of God is to Christianity. So, if the monastics were told, “You don’t believe in the no self view,” this would likely inspire strenuous rebuttals. Nonetheless, there might be another sense in which the monastics have not internalized the no-self view deeply enough to deflect fear of death. Indeed, we suspect that something like this is the case, as we will discuss in the final section.

Another limitation of our study is that we focused on a single Buddhist tradition, and it will be important to see whether the findings hold for other traditions as well. Buddhist traditions differ from one another in doctrinal detail, with respect to practice, with respect to relations between lay and monastic communities, and in degree of piety. We have examined only one of these traditions—the Tibetan tradition as it is represented in the Indian exile community and in Bhutan. It will be important in future studies to examine other Buddhist traditions to determine whether the phenomena we have found are general, or whether they are driven in part by properties of the Tibetan community or Buddhist doctrine, per se. If the latter, further study will be required to determine which features of Buddhist doctrine are responsible for these results.

#### 4. Conclusion

Our results suggest a paradoxical effect of Buddhist teaching. Buddhism encourages the belief that there is no persistent self, and this is taken to be a reason not to fear death. We find that monastic Buddhists explicitly deny the existence of a persistent self, in line with Buddhist thought. But contrary to the Buddhist promise of reduced fear of death, the monastic Buddhists showed dramatically increased fear of self-annihilation and valued their own lives over others to a much greater degree.

On every measure we used, the monastics deny the existence of the self. So why do they fail to show the expected reduction in fear of death? We think that it is because, despite their training and explicit claims, they retain a powerful sense of personal identity across the biological lifespan. In particular, like everyone else, Tibetan monastics engage in episodic retrospection and prospection, and this generates a robust sense of personal identity with the past experiencer (see, e.g., Nichols, 2014). Even if you have changed enormously since your first kiss, it will still seem like *you* had that experience. We propose that even for the monks and nuns, there remains a persistent and powerful sense of identity yielded by episodic memory and prospection within biological life.

The claim that episodic memory generates a sense of personal identity even among monastics is reinforced by looking at work within Tibetan Buddhism. Autobiographies are a primary genre in Tibetan literature. The autobiographies are by people who are held

to be of high spiritual attainment (e.g., Gyatso, 1998, 103). It might seem incoherent for an enlightened Buddhist to write an autobiography—how can one affirm an autobiography while denying the self?<sup>5</sup> It is certainly clear that these texts make liberal use of the first person singular. The official rejoinder to this alleged incoherence is that these works treat the author as merely a “conventional” person, not an enduring ultimate self.

It is possible to speak of persons in this merely conventional fashion, but Tibetan autobiographies suggest that this is not always consistently upheld. Often in these works, the author is reporting a past experience, and the recollections certainly do not seem to present the distanced perspective afforded by thinking that there really is no persisting self. Rather, they suggest a clear identification with the past experiencer. Consider, for instance, the most famous work in this tradition, *The Life of Milarepa*. We find the author describing a scene from years earlier in which he had returned to his ancestral home and found human bones among a heap of rags. He writes,

When I realized they were the bones of my mother, I was so overcome with grief that I could hardly stand it. I could not think, I could not speak, and an overwhelming sense of longing and sadness swept over me. (Quintman, 2010, p. 118; see also Shabkar, 1994, p. 32; Kongtrul, 2003; 172–3)

This passage is hardly a dispassionate report that a conventional person consisting of fleeting traits included a set of perceptions. Instead, it seems to be a recollection of a devastating personal experience. It is most plausible that Milarepa, in reflecting on this terrible event, could not suppress the sense that *he* had the experience of discovering his mother’s bones, even if, in a different register, he would deny that there is any self in which he consists, or that he is now the same person who endured that experience.

The sense of continuity over time within a biological life may be resistant to the ideological conviction that that sense is delusional. Nonetheless, the common view that there is self-persistence *between* lives may well succumb to the no-self doctrine. If this is the case, it may be that the prospect of death is the prospect of the end of the *only kind of self in which one has any conviction*. This would be a more dramatic denouement than that anticipated in death by Christians and Hindus, each of whom retains a conviction in the survival of an immortal soul. If monastics do indeed fail to extirpate the sense of continuity, this would help explain both their heightened fear of self-annihilation and their increased egocentricity in tradeoff tasks.

Indeed, this explanation actually fits with a traditional Buddhist distinction between *innate* self-grasping and *philosophical* self-grasping. The latter is the conviction in the reality of the self as a result of philosophical or religious doctrine, and it is regarded among Buddhist philosophers as eliminable simply through philosophical reflection. The former, however, is regarded as immune to mere philosophical reflection, and it is argued that only prolonged meditation can dislodge it. None of the participants we studied were long-term meditators (Tsongkhapa, 1991), and one important question for future research

will be whether highly experienced practitioners of meditation would in fact show reduced fear of self-annihilation.

The Buddhist may be correct in thinking there is no persisting self and hence that it is irrational to fear death. Nonetheless, as Buddhists themselves recognize, our sense of identity across the biological lifespan is resilient, and perhaps the thought of self-annihilation triggers fears too primitive to be easily tamed by the philosophical belief that there is no persistent self.

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## Notes

1. Henceforth, all analyses containing multiple comparisons will report  $p$ -values after Holm correction.
2. There is an obvious sense in which the time variable is continuous (1, 52, 260 weeks), though psychometrically it would be dubious to treat it this way. Ideally, we would treat the variable as ordinal, to remove the assumption of monotonicity between scale items. However, there is no widely accepted statistical method for treating an independent variable as ordinal (Gertheiss & Tutz, 2009). Thus, we assigned each scale item to a number on a monotonically increasing scale (1, 2, 3). For readers for whom this solution is inadequate, our results are also significant when time is treated as a categorical factor with three levels (all pairwise comparisons,  $p < .001$ ).
3. Here, and elsewhere in the manuscript, “nonreligious” was operationalized as anyone indicating their religious affiliation as atheist, agnostic, “spiritual but not religious,” or “none.”
4. In accordance with statistical convention, we report Cohen’s  $d$  when the two populations have statistically indistinguishable variances, and Glass’s  $\Delta$  when this assumption cannot be made.
5. For discussion, see Gyatso, 1998, chapter 5.

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### Supporting Information

Additional Supporting Information may be found online in the supporting information tab for this article:

**Appendix S1.** Supplemental material for death and the self.