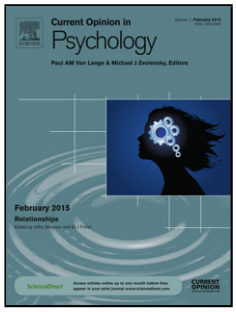
Journal Pre-proof



Death anxiety and religion

Jonathan Jong

PII: S2352-250X(20)30149-4

DOI: https://doi.org/10.1016/j.copsyc.2020.08.004

Reference: COPSYC 1065

To appear in: *Current Opinion in Psychology*

Please cite this article as: Jong J, Death anxiety and religion, *Current Opinion in Psychology* (2020), doi: https://doi.org/10.1016/j.copsyc.2020.08.004

Death anxiety and religion

Jonathan Jong
Address
Centre for Trust, Peace, and Social Relations
Cheetah Rd, Coventry CV1 2TL

Corresponding author: Jong, Jonathan (jonathan.jong@anthro.ox.ac.uk)

Highlights

- The linear relationship between death anxiety and religious belief is inconsistent and probably averages around zero.
- There is some—albeit limited and culturally specific—evidence for a quadratic relationship between death anxiety and religion, such that extremely religious and irreligious individuals report lower death anxiety than others.
- Experiences with and proximity to death do not consistently predict religious belief.
- Reminders of death probably temporarily strengthen religious belief among believers, but not nonbelievers. Early evidence suggests that nonbelievers pursue nonreligious forms of literal immortality.

Abstract

This review summarises research on the relationship between death anxiety and religiosity. The fear of death is commonly hypothesized as a motivation for religious belief. From a Terror Management Theory perspective, religious beliefs are especially attractive because they offer both literal and symbolic immortality in the form of afterlife beliefs and belonging in venerable systems of value respectively. However, the evidence for any relationship—whether correlational or causal—between death anxiety and religious belief is weak. Indeed, evidence for death anxiety under normal (i.e., non-life threatening) circumstances is surprisingly hard to find. If the fear of death motivates religiosity, it does so subtly, weakly, and sporadically.

Keywords: death anxiety; religiosity; afterlife; terror management theory

1. Introduction

In an admittedly unscientific poll of 208 American users of Amazon Mechanical Turk, Jong and Halberstadt [1] found that over of quarter of respondents ranked the fear of death as the most important explanation of religion, trumping other plausible factors such as social influence from family and friends and the need to explain phenomena whether natural or seemingly miraculous. Popular opinion is joined here by scholars throughout the ages. Theorists of religion who posit the fear of death among the chief causes of religious belief include David Hume in the 18th century, Ludwig Feuerbach in the 19th, and Sigmund Freud, Bronisław Malinowski, and Ernest Becker in the 20th. It is, however, in Becker's work that the fear of death really takes centre stage, not only in a functional analysis of religion, but as a fundamental driver of all human social and cultural activity [2, 3]. Becker's theory has been translated into social psychological terms with remarkable success as Terror Management Theory (TMT) [4, 5].

Following Becker, TMT posits that human beings, gifted with self-awareness, are also cursed with the knowledge of our own mortality: this truth being too awful to bear, we embark on quests for immortality, literal and symbolic. On the literal side, we seek various means to prolong our lives, whether through elixirs or exercise or biotechnological enhancements. On the symbolic side, we yearn to live on in our offspring and our moral and material accomplishments within the value systems we inhabit. Religion therefore appears to be an especially attractive immortality project, as many religious traditions offer both literal and symbolic immortality, through their accounts of an afterlife and of morality and piety respectively. However, until recently, the empirical research on TMT has largely neglected religion. In the most recent meta-analysis of TMT research, only eight of the 277 collated effects can plausibly be considered to be about religion [6*]. This review will examine the more recent TMT literature on religion in later section, but we will first begin by looking at correlational evidence for the relationship between death anxiety and religiosity.

2. Are death anxiety and religiosity correlated?

It is not clear what one ought to predict about the relationship between trait levels of religiosity and death anxiety. On one hand, if death anxiety motivates religiosity, then we might expect the two variables to be positively correlated. If, on the other hand, religiosity effectively reduces death anxiety, then we might expect a negative correlation. One way to resolve this contradiction is to posit a curvilinear relationship, such that the causal direction of the relationship changes as the individual becomes more religious: among the religious, greater religiosity reduces death anxiety, whereas among the nonreligious, death anxiety increases religiosity (or, perhaps more accurately, reduces irreligiosity) [7].

2.1 Self-reported death anxiety and religiosity

A recent review found 100 studies that reported a total of 202 linear correlations between death anxiety and religiosity from 113 independent samples [8]. Of the 202 correlations, the most common finding was a null result (n = 106), followed by a negative correlation (n = 60), followed by a positive correlation (n = 36). The meta-analysis of the 113 independent effects yielded a very weak negative correlation, r = -.06. Limiting the sample of effects to afterlife beliefs (n = 35) did not improve matters. However, this study did find some evidence for curvilinearity among the small minority of studies that tested this hypothesis: of the eleven that reported the relevant statistics, eight clearly supported the curvilinearity hypothesis. This overall picture of the death anxiety-religiosity relationship is also corroborated by an earlier review of the literature [6].

Most of the studies included in this review were from historically Christian anglophone—and especially North American—samples, with a small handful from Muslim-majority countries. Two datasets—the "International Death Survey" (IDS) [9] and "Negative Experiences and Religion" (NER) [10] projects—have recently been published that expands the cultural reach of this research, with data from 14 independent samples from Brazil, China, India, Indonesia, Japan, the Philippines, Russia, South Korea, Thailand, and Turkey, as well as from the United States. Both studies included the Existential Death Anxiety scale and Supernatural Belief Scale, the latter of which contains an item about afterlife belief [11**]. Across these 14 samples, only three evinced significant linear correlations between death anxiety and afterlife belief: in Indonesia the correlation was negative, whereas in China and the Philippines they were positive (Table 1; Similar results

have been previously published using an earlier version of this dataset prior to quality checks. [12]). Curve estimations computed by regressing death anxiety on afterlife belief found a quadratic pattern in a majority of the sample, but this result is unreliable in most of them as there were very few nonbelievers in all countries except China, Japan, South Korea, and the USA. Of these four, only Japan failed to show this pattern; of the other three, the effect was very small, generally explaining less than 5% of variance.

In summary, the evidence for a linear relationship between death anxiety and religious belief is very weak and fickle. The evidence for a curvilinear relationship is somewhat stronger, but still rather weak: attempts to test for this pattern are problematised by a lack of nonbelievers in most research samples.

Table 1
Relationship between death anxiety and afterlife belief

Country	Dataset	N	Spearman's □	Quadratic R^2
Brazil	IDS	198	-.14	.03
Brazil	NER	204	-.09	.04[c]
China	NER	202	.19[b]	.07[a]
India	NER	205	-.09	.05[b]
Indonesia	NER	204	-.20[b]	.05[b]
Japan	IDS	214	.01	.01
Philippines	IDS	198	.16[c]	.07[a]
Russia	IDS	199	-.01	.00
Russia	NER	205	.08	.01
South Korea	IDS	200	-.05	.05[b]
Thailand	NER	205	.03	.00
Turkey	NER	205	-.10	.09[a]
USA	IDS	813	-.01	.04[a]
USA	NER	322	.09	.02[c]

[a] $p < .001$
[b] $p < .01$
[c] $p < .05$

2.2 Death-related experiences and religiosity

The IDS also included questions about participants' experiences with death, including close encounters with their own death and experiences of losing a lost one. This allows us to see if such experiences predict afterlife belief, even if self-reported death anxiety do not. Broadly speaking, they did not, except in the USA, where living through the death of a close family member of friend did predict stronger afterlife belief (Table 2).

Table 2

Relationship between death-related experiences and afterlife belief

Country	N	Almost died (□)	Death of family/friend (□)
Brazil	200	0.04	-0.04
Japan	218	0.00	0.11
Philippines	200	-0.11	-0.06
Russia	200	0.02	0.01
South Korea	200	0.00	-0.09
USA	813	0.04	0.132

There is very little previous research with which to compare these results. Berman's 1974 study is methodologically similar to this one, and corroborated these findings: participants who reported life-threatening experiences were no more likely to believe in an afterlife than those in a matched sample [13]. Studies on clinical populations reveal significant heterogeneity. Reed's cross-sectional studies of terminally ill patients found that they reported greater religiosity than matched healthy and nonterminally ill individuals [14, 15]. This is supported by some recent longitudinal studies [16], but others have either found no change in religiosity as function of illness severity or decreases in the importance of religious belief as a source of comfort toward the end of life [17, 18]. Longitudinal studies have also been inconsistent, with some finding slight increases in religious or spiritual attitudes and beliefs late in life, and others finding no change [19, 20, 21]. Changes in religiosity and spirituality toward the end of life seem to be highly contingent upon individual difference factors, including prior religiosity and the experience of the ageing, illness, or life-threatening experience itself [22, 23, 24].

The finding in the USA on the relationship between the loss of a loved one and religiosity is consistent with two other longitudinal studies conducted in New Zealand, another anglophone country with a Christian heritage. Analyses of data from the Dunedin Multidisciplinary Health and Development found that death-related (e.g., loss of a loved one) negative life experiences led to increases in religiosity detectable six years later; there was no such effect for death unrelated experiences that were rated as equally distressing (e.g., imprisonment; "serious illness or injury" was included in this category) [25]. Another study found that belief in God increased after the 2011 Christchurch earthquake that killed 185 people, but only among those who either lived in the region or who were personally affected by it [26]. It is unclear how many of these participants had suffered the death of a loved one: however, they were themselves unlikely to have been at significant risk of death, as most of the fatalities were limited to a small area of the city: 60% occurred within one building.

3. Does mortality salience increase religiosity?

We turn now to the experimental evidence. The first experiment on this topic actually predates Terror Management Theory: Osarchuk and Tatz [27] presented participants with a slideshow of scenes of death set to funereal music and accompanied by exaggerated mortality statistics, and found that those who had previously expressed belief in an

afterlife now reported stronger belief. Participants who were told to expect electric shocks—also an anxiety-inducing experience—were not thus affected, nor were participants who previously expressed low or no belief in an afterlife. In other words, reminders of mortality increased religious belief but only among believers.

Subsequent research has employed a simpler paradigm with lower production value, designed to make death thoughts more accessible without necessarily instilling fear or anxiety in participants [28]. It is currently a matter of contention whether this mortality salience paradigm is really "affect free", but we will sidestep this issue [29, 30]. Rather than exposing participants to a multimedia presentation, participants write short essays about their own death and how imagining it makes them feel; then, there is typically a delay or distractor task before the dependent measure, during which time participants' thoughts about death are theorised to disappear from conscious awareness but remain activated [31]. This condition is contrasted with one in which participants write essays about some other death-unrelated but anxiety-inducing topic or an emotionally neutral topic. Using this paradigm, several studies have found what Osarchuk and Tatz did: that mortality salience increased religious belief among believers [32, 33, 34]. However, this finding is not universal. Heflick, Goldenberg, Hart, and Kamp found that the mortality salience task only affected those who did *not* believe in body-soul dualism: they reported lower afterlife belief relative to those in the control condition [35]. Believers were unaffected. Likewise, Lifshin, Greenberg, Soenke, Darrell, and Pyszczynski found that while highly religious participants were unaffected, those for whom religion was unimportant reported decreased God and afterlife belief in the mortality salience condition relative to control [36]. Matters get even more complicated when we consider nonbelievers 'responses or believers' responses toward other faiths.

It is unclear what Terror Management Theory should predict about believers' responses toward other faiths [11, 37, 38**, 39]. On one hand, other faiths present alternative worldviews that potentially conflict with one's own: in this case, believers should more strongly reject other faiths when mortality is salient. On the other hand, when mortality is salient, any promise of an afterlife might be sufficiently compelling, whatever the source. The evidence slightly favours the former view. Norenzayan and Hansen found that Christian participants reported greater belief in shamanic spirits in the mortality salience condition relative to control [32]. However, this study suffered from various methodological weaknesses, and Vail, Arndt, and Abdollahi's subsequent direct test of the hypothesis found that both Christians and Muslims bolstered their own faiths and denied other religious beliefs more strongly under mortality salience conditions relative to control [33].

The empirical evidence regarding nonbelievers' responses is messier still. As mentioned earlier, Osarchuk and Tatz found no effect on nonbelievers [27]; likewise, Norenzayan and Hansen found no effect of mortality salience on nonreligious participants and Vail et al. found that mortality salience did not affect atheists. However, Jong, Halberstadt, and Bluemke found that nonreligious participants reported *lower* religious belief in the mortality salience condition than in the control [34]; as mentioned earlier, Heflick et al. and Lifshin et al. found similar results [35, 36]. On the other side of the ledger, while Vail et al. found no effect among atheists, they did find that mortality salience *increased* religious belief among agnostics [33]. These differences may be due to variation in how

participants are categorised as religious or nonreligious (e.g., nonreligious, nonbelievers in dualism or afterlife, atheist, agnostic). To throw yet another vector in the mix, Jong et al. also ran two studies using implicit measures of religious belief, and in both cases found that nonreligious participants now evinced increased religiosity in the mortality salience condition relative to control [34]. This finding has not yet been independently replicated.

There have also been experiments run on whether religious beliefs mitigate the usual effects of the mortality salience task. Note that this question is distinct from the question of whether religious beliefs reduce death anxiety itself. Typically, participants engage in "worldview defense" when reminded about death: this might manifest itself in the pursuit of self-esteem, in-group enhancement and outgroup derogation, and other such sources of symbolic immortality. Various studies have found religiosity and affirmations of religious beliefs provide buffers against the effects of mortality salience [40, 41, 42]. Heflick and Goldenberg reported that the affirmation of afterlife beliefs mitigated mortality salience effects for nonbelievers as well as for believers [43], but their analysis has been disputed [44]. Furthermore, subsequent research on a large sample of atheists found no such effect: they engaged in nationalistic worldview defense under mortality salience conditions regardless of whether afterlife beliefs were first affirmed or denied. This study also found that affirmation of "medical indefinite life extension"—a secular means of literal immortality—did seem to ameliorate the effects of mortality salience for atheists [44**].

3. Conclusion

It is hard to say what to make of all this. There are plenty of correlational studies on death anxiety and religiosity, and survey of this literature suggests no linear relationship between them, or at best a very weak negative one; a handful of studies provide evidence for a curvilinear relationship, but if such a relationship exists it is weak and cross-culturally fickle. There are much fewer experimental studies, and these studies admit much less cultural diversity. Most—but not all—of this experimental evidence suggests that people pursue literal immortality in worldview-consistent ways, and that the affirmation of literal immortality ameliorates the effects of mortality salience. However, if the mortality salience task is indeed "affect free", then there remains an inferential gap between research using this paradigm and claims about the role of death *anxiety* in religious belief and other sources of literal immortality.

The challenges of investigating this topic are legion, and it is not clear whether the lack of robust and strong findings is due to methodological weaknesses or whether death anxiety really only plays a bit part in religiosity. For example, it is difficult to manipulate death anxiety within reasonable ethical limits, and the standard mortality salience induction paradigm is a weak substitute, especially if it is "affect free". Multiple instruments for measuring death anxiety and religiosity exist, but their reliability and cross-cultural validity are questionable [11, 45**]. Measurement of death anxiety faces an additional challenge according to Terror Management Theory, which stipulates that human beings are very successful at death denial: this entails that we do not usually experience death anxiety, even though it unconsciously affects our behaviour. Psychophysiological measures of death anxiety might help to solve this problem, but such tools have not yet been shown to be reliable and construct valid in this context. Cross-cultural variation in attitudes toward death and afterlife beliefs both necessitate cross-cultural research and exacerbate measurement challenges. In summary, there is a general absence of evidence

for a strong role of death anxiety in causing religious belief: more realistic and fear-inducing manipulations and more sensitive measures of death anxiety may provide more definitive tests of the hypothesis that death anxiety causes religious belief, but such methodological developments do not seem to be forthcoming.

Conflict of Interest

The research reported in this paper was supported by research grants from the John Templeton Foundation (52257) and Templeton World Charity Foundation (1064). The author declares to have no other conflict of interest to report in relation to this work.

Acknowledgements

The research reported in this paper was supported by research grants from the John Templeton Foundation (52257) and Templeton World Charity Foundation (1064).

References

1. Jong J, Halberstadt J: **Death anxiety and religious belief: responses to commentaries.** *Religion, Brain & Behavior* 2018, **9**:207-218.
2. Becker E: *The Denial of Death.* Free Press; 1973.
3. Jong J: **Ernest Becker's psychology of religion forty years on: a view from social cognitive psychology.** *Zygon* 2014, **49**:875-889.
4. Greenberg J, Pyszczynski T, Solomon S: **The causes and consequences of a need for self-esteem: a terror management theory.** In *Public Self and Private Self*. Edited by Baumeister, R F. Springer-Verlag; 1986:189-212.
5. Solomon S, Greenberg J, Pyszczynski T: *The Worm at the Core: On the Role of Death in Life.* Penguin; 2015.
6. *Burke B L, Martens A, Faucher E H: **Two decades of Terror Management Theory: a meta-analysis of mortality salience research.** *Personality and Social Psychology Review* 2010, **14**:155-195.

Most recent meta-analysis of experimental research on Terror Management Theory. Found that average effect size was larger than average for social psychology.

7. Ellis L, Wahab E A: Religiosity and fear of death: a theory-oriented review of the empirical literature. *Review of Religious Research* 2012, **55**:149-189.
8. Jong J, Ross R, Philip T, Chang S-H, Simons N, Halberstadt J: **The religious correlates of death anxiety: a systematic review and meta-analysis.** *Religion, Brain & Behavior* 2018, **8**:4-20.
9. Jong J, Halberstadt J, Bluemke M, Kavanagh K, Jackson C: **Death anxiety, exposure to death, mortuary preferences, and religiosity in five countries.** *Scientific Data* 2019, **154**. https://doi.org/10.1038/s41597-019-0163-x
10. Jong J, Baimel A, Ross R, McKay R, Bluemke M, Halberstadt J: **Traumatic life experiences and religiosity in eight countries.** *Scientific Data* 2020, **140**. https://doi.org/10.1038/s41597-020-0482-y
11. **Jong J, Halberstadt J: *Death Anxiety and Religious Belief: An Existential Psychology of Religion*. Bloomsbury; 2016.

Book-length treatment of the topic, and includes fuller descriptions of much of the correlational and experimental research surveyed here.

12. Jong J: **Death anxiety and religious belief: a critical review.** In *The science of religion, spirituality, and existentialism.* Edited by Routledge C, Vail III K. Elsevier; 2020:21-35.
13. Berman A L: **Belief in afterlife, religion, religiosity and life-threatening experiences.** *OMEGA—Journal of Death and Dying* 1974, **7**:127-135.
14. Reed P G: **Religiousness among terminally ill and healthy adults.** *Research in Nursing and Health* 1986, **9**:35-41.
15. Reed P G: **Spirituality and well-being in terminally ill hospitalised adults.** *Research in Nursing and Health* 1987, **10**: 335-344.
16. Janssen D J A, Boyne J J, Jörg L, Pfisterer M E, Rickli H, Brunner-La Rocca H-P: **Religious beliefs towards the end of life among elderly patients with chronic heart failure and the relationship with end-of-life preferences.** *Journal of Palliative Care & Medicine* 2016, **6**:244. https://doi.org/10.4172/2165-7386.1000244
17. Chen Y, Koenig H G: **Do people turn to religion in time of stress?: an examination of change in religiousness among elderly, medically ill patients.** *The Journal of Nervous and Mental Disease* 2006, **194**:114-120.
18. Baugher R J, Burger C, Smith R, Wallston K: **A comparison of terminally ill persons at various time periods to death**. *OMEGA—Journal of Death and Dying* 1990, **20**:103-115.

19. Idler E L, Kasl S V, Hays J C: **Patterns of religious practice and belief in the last year of life.** *The Journals of Gerontology: Series B* 2001, **56**:S326–S334.
20. Dillon M, Wink P: In the Course of a Lifetime: Tracing Religious Belief, Practice, and Change. University of California Press; 2007.
21. Wang K-Y, Kercher K, Huang J-Y, Kosloski K: **Aging and religious participation in late life.** *Journal of Religion and Health* 2014, **53**:1514-1528.
22. Coleman P G, Ivani-Chalian C, Robinson, M: **Religious attitudes among British older people: stability and change in a 20-year longitudinal study.** *Ageing & Society* 2004, **24**:167-188.
23. McCulloch, M E, Enders C K, Brion S L, Jain A R: **The varieties of religious development in adulthood: a longitudinal investigation of religion and rational choice.** *Journal of Personality and Social Psychology* 2005, **89**:78-89.
24. Greyson B, Khanna S: **Spiritual transformation after near-death experiences.** *Spirituality in Clinical Practice* 2014, **1**:43-55.
25. Morris Trainor Z, Jong J, Bluemke M, Halberstadt J: **Death salience moderates the effect of trauma on religiosity.** *Psychological Trauma* 2019, **11**:639-646.
26. Sibley C G, Bulbulia J: **Faith after an earthquake: a longitudinal study of religion and perceived health before and after the 2011 Christchurch New Zealand Earthquake.** PLOS One 2012, **7**:e49648. https://doi.org/10.1371/journal.pone.0049648
27. Osarchuk M, Tatz S J: **Effect of induced fear of death on belief in afterlife.** *Journal of Personality and Social Psychology* 1973, **27**:256-260.
28. Rosenblatt A, Greenberg J, Solomon S, Pyszczynski T, Lyon D: **Evidence for terror management theory: I. The effects of mortality salience on reactions to those who violate or uphold cultural values.** *Journal of Personality and Social Psychology* 1989, **57**:681-690.
29. Lambert A J, Eadeh F R, Peak S A, Scherer L D, Schott J P, Slochower J M: **Toward a greater understanding of the emotional dynamics of the mortality salience manipulation: Revisiting the "affect-free" claim of terror management research.** *Journal of Personality and Social Psychology* 2014, **106**:655-678.
30. Juhl J, Routledge C: **Putting the terror in terror management theory: Evidence that the awareness of death does cause anxiety and undermine psychological well-being.** *Current Directions in Psychological Science* 2016, **25**:99-103.
31. Pyszczynski T, Greenberg J, Solomon S: **A dual-process model of defense against conscious and unconscious death-related thoughts: an extension of terror management theory.** *Psychological Review* 1999, **106**:835-845.
32. Norenzayan A, Hansen I G: **Belief in supernatural agents in the face of death.** *Personality and Social Psychology Bulletin* 2006, **32**:174-87.
33. Vail III K E, Arndt J, Abdollahi A: **Exploring the existential function of religion and supernatural agent beliefs among Christians, Muslims, Atheists, and Agnostics.** *Personality and Social Psychology Bulletin* 2012, **38**:1288-300.
34. Jong J, Halberstadt J, Bluemke M: **Foxhole atheism, revisited: The effects of mortality salience on explicit and implicit religious belief.** *Journal of Experimental Social Psychology* 2012, **48**:983-989.
35. Heflick N A, Goldenberg J L, Hart J, Kamp S M: **Death awareness and body–self dualism: A why and how of afterlife belief.** *European Journal of Social Psychology* 2015, **45**:267-275.
36. Lifshin U, Greenberg J, Soenke M, Darrell A, Pyszczynski T: **Mortality salience, religiosity, and indefinite life extension: Evidence of a reciprocal relationship**

between afterlife beliefs and support for forestalling death. *Religion, Brain & Behavior* 2018,**8**:31-43.

37. Landau M J, Greenberg J, Solomon S: **The motivational underpinnings of religion.** *Behavioral and Brain Sciences* 2004, **27**:743-744.
38. **Vail K E, Rothschild Z K, Weise DR, Solomon S, Pyszczynski T, Greenberg J: **A terror management analysis of the psychological functions of religion.** *Personality and Social Psychology Review* 2010, **14**:84-94.

The definitive theoretical article on Terror Management Theory and religion: however, it was published before much of the empirical literature summarised here.

39. Vail III K E, Soenke M, Waggoner B. Terror management theory and religious belief. In *Handbook of Terror Management Theory*. Edited by Routledge C, Vess M. Academic Press; 2019:259-285.
40. Norenzayan A, Dar-Nimrod I, Hansen IG, Proulx T: Mortality salience and religion: Divergent effects on the defense of cultural worldviews for the religious and the non-religious. European Journal of Social Psychology. 2009 Feb;39(1):101-113.
41. Jonas E, Fischer P: Terror management and religion: evidence that intrinsic religiousness mitigates worldview defense following mortality salience. Journal of personality and social psychology. 2006, **91**:553-567.
42. Dechesne M, Pyszczynski T, Arndt J, Ransom S, Sheldon K M, Van Knippenberg A, Janssen J: **Literal and symbolic immortality: The effect of evidence of literal immortality on self-esteem striving in response to mortality salience.** *Journal of Personality and Social Psychology* 2003, **84**:722-737.
43. Heflick N A, Goldenberg J L: **No atheists in foxholes: Arguments for (but not against) afterlife belief buffers mortality salience effects for atheists.** *British Journal of Social Psychology* 2012, **51**:385-392.
44. **Vail III KE, Soenke M, Waggoner B, Mavropoulou I: **Natural, but not supernatural, literal immortality affirmation attenuates mortality salience effects on worldview defense in atheists.** *Personality and Social Psychology Bulletin* 2020, **46**:312-326.

Contains a re-analysis of Heflick and Goldenberg's [43] data, and two large sample experiments finding that neither arguments for nor against supernatural afterlife beliefs mitigated the effects of mortality salience but affirmation of the possibility of medical indefinite life extension did.

45. **Neimeyer R A (Ed): *Death Anxiety Handbook: Research, Instrumentation, and Application*. Taylor & Francis; 1994.

A classic in the psychological study of death anxiety. Now over 25 years old, but still relevant especially as the instruments reviewed here are still being used.