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RESEARCH

A March to a Better World? Religiosity and the Existential Function of Belief in Social-Moral Progress

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This article reports an investigation of the existential function of belief in progress, specifically faith in social and moral advancement. We argue that for belief in progress to provide a sense of purpose and significance in our world, it must concern humanity and society and not merely the technological advances humankind accomplishes. We observed an effect of mortality salience on belief in social-moral (but not scientific-technological) progress, which was moderated by strength of religious belief. Participants low in religious belief showed an increase in belief in social-moral progress, while those high in religious belief did not. Follow-up analyses revealed that the latter finding was primarily due to Protestant participants, who scored highest on strength of religious faith and belief in inherent sin, and were the least optimistic about the future of humanity.

“Theories of progress are myths answering to the human need for meaning”—John Gray (2007, p. 3)

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[∞]Joop van der Pligt (1951–2015) sadly and unexpectedly passed away not long after this paper was accepted for publication. We will remember him fondly as our dear colleague, mentor, and friend—BTR, FvH, MvE.

Color versions of one or more of the figures in the article can be found online at www.tandfonline.com/hjpr.

One of the most influential political philosophers in recent times, John Gray, wrote extensively about the important role that the ubiquitous belief in human progress plays in modern society. According to Gray (2004, 2007), for many people in contemporary secular societies faith in progress has largely replaced religion as a provider of existential meaning. This contemporary belief in progress has sprung largely from the Enlightenment, a period in which thinkers such as Hume and Montesquieu argued that humankind progresses toward a more perfect state as scientific and technological advances encourage social and moral progress. Gray argued that, ever since the Enlightenment, faith in human (or social-moral) progress has become an increasingly important source of existential security, despite societal and environmental challenges (e.g., wars, natural disasters) that occasionally disrupt this forward movement.

According to Gray and others (e.g., Brunner, 1954/1972; Plant, 2009; but see Blumenberg, 1983), belief in progress is appealing because it entails a secular, humanistic version of the Christian belief in *salvation*: A sense of progress promises that the course of history is not cyclic or chaotic but is moving toward a better state of being for humankind, similar to the view embraced by Christianity and many other religions that, upon death, physical existence is transformed into a far better afterlife, which is the ultimate and perfect state of being. This view can be traced back to Bury (1920/1955), who argued that belief in human progress constitutes a form of faith that is highly similar to the notion of providence (but without the involvement of a supernatural agent) and personal immortality (but in a symbolic rather than literal form), in that it justifies and provides purpose and direction to the entire course of human history (i.e., imbues history with meaning). Viewing human history as progressing toward a better state implies that humankind is able to learn from its past; ongoing progress implies a better future that will ultimately lead to a utopian society, which for secular humanists might well be the highest goal attainable (Rutjens, van der Pligt, & van Harreveld, 2009).

Initial experimental support for these ideas was provided by Rutjens et al. (2009), by showing that a general belief in progress can provide a protective buffer against mortality concerns, similar to previous experimental demonstrations of the existential functions of religious beliefs (e.g., Dechesne et al., 2003; Norenzayan & Hansen, 2008; Pyszczynski, Solomon, & Greenberg, 2003). Building on terror management theory (Greenberg, Solomon, & Pyszczynski, 1997), Rutjens et al. (2009) showed that thinking about one's own demise (mortality salience) led people to more vigorously defend the notion of progress and that questioning progress led to an increase in death-related thoughts (death-thought accessibility; Arndt, Greenberg, Solomon, Pyszczynski, & Simon, 1997). In addition, affirming progress through an experimental manipulation eliminated the effects of mortality salience on subsequent measures of death-thought accessibility and worldview defense (i.e., defending and bolstering one's internalized, culturally derived worldview; Greenberg et al., 1997).

The current article builds on this initial research and aims to address two issues related to the role of faith in progress that have not yet been investigated. First, progress is a multifaceted phenomenon. Gray (2007) distinguished between human social-moral progress and scientific-technological progress and argued that although the latter is observable and science is cumulative, the former requires faith. This leads to the question of whether they play different roles in emotional functioning. Does faith in any kind of progress provide existential security by providing hope for the future, or is it primarily faith in the broader advancement of *human nature itself* that is existentially comforting? We argue the latter and contrast the effects of notions of broad human (i.e., societal and moral) progress (see also Eibach & Libby, in press;

Uttich, Tsai, & Lombrozo, 2014) with technological progress to explore this issue empirically. Related to this, the previous research did not show *why* belief in progress provides existential protection. Envisioning technological and scientific advances, for example, may make the future seem more controllable and comfortable (Meijers & Rutjens, 2014; Rutjens, van Harreveld, & van der Pligt, 2010), and as such provide existential solace (see Landau et al., 2004, for an empirical link between structure and coherence and terror management processes, and Fritsche et al., 2008, for a control motivation perspective on terror management). We elaborate on this issue in the next section.

Second, the research reported here explores the relation between belief in social-moral progress and religion. We believe that strength of religious belief and religious affiliation are interesting in the current context for two reasons. First, belief in social-moral progress has been argued to form a humanist replacement for religious belief (e.g., Brunner, 1954/1972; Gray, 2007). Thus, following existential threat, belief in social-moral progress would arguably be enhanced, especially among secular individuals and less so among their religious counterparts. This would not necessarily mean that religious people do not believe in progress, but rather that they are less prone to use belief in progress as a source of existential security than their secular counterparts. Religious people, especially those characterized by an intrinsic religious orientation, have been found to turn to religious sources of meaning for solace when facing existential threat (e.g., Jonas & Fischer, 2006; Norenzayan, Dar-Nimrod, Hansen, & Proulx, 2009, see also Cohen et al., 2005). Related to this, a second reason to explore the role of religion is that there may be differences among religious persons depending on the worldviews embraced by their denominations. Some denominations view the modern world as corrupt and even evil, due perhaps to the declining influence of religion, and thus view the changes that have occurred over the recent decades and centuries as reflecting degradation (“moral decline”; see also Eibach & Libby, in press) rather than improvement of the human condition; others emphasize the concept of inherent or original sin that occurred in the earliest days of human existence as evidence that human beings are inherently evil and incapable of moral and social perfection. For example, Calvinists (a reformed Protestantism that follows the tradition of Calvin and other Reformation-era theologians) generally view humanity as sin-born (i.e., a belief in inherent sin) and therefore not at liberty to choose good over bad (i.e., a belief in predestination)—man is unable to save himself, and in that sense the mere pursuit of human progress is futile. In other words, for some but not all believers, faith in social-moral progress is unlikely to be used as a refuge from existential anxiety.

WHICH TYPE OF PROGRESS PROVIDES EXISTENTIAL MEANING, AND WHY?

With regard to the first research question posed earlier, our reasoning is as follows. During the Enlightenment, faith in scientific advance went hand in hand with belief in the progress of the human condition (i.e., moral, political, and social progress, Gray, 2005; see also De Botton, 2004). As a consequence, Gray argued that belief in social-moral progress harbors a meaning-providing function similar to religion. However, Gray (2004, 2005) contended that, to permeate the course of human history with meaning, we need to believe that it is the *essence of humanity* that is advancing (i.e., there is some form of progress in the domains of politics, ethics, society, and morals) rather than mere material or superficial features. In accordance with this view we

expect that only belief in social-moral progress imbues life with meaning; in other words, only these beliefs will be motivationally bolstered in the face of existential threat. Thus, for progress to be existentially comforting, it must entail more than material or scientific-technological advances. Such technological progress does not necessarily make the world a better or more meaningful and purpose-laden place. It could even be argued that the opposite is true, as “science enlarges human power [but] it cannot make humanity itself more reasonable, peaceful or civilized” (Gray, 2004, p. 4); in fact, “human life can become more savage and irrational even as scientific advance accelerates” (Gray, 2004, p. 4). Indeed, particularly after the Second World War, the optimistic views on science facilitating benign progress started to be gradually replaced by fears resulting from news of dehumanizing medical experiments, the atomic bomb, and environmental degradation (Haynes, 1994). Recent research even provides evidence for an intuitive association between scientists and a variety of immoral conduct (Rutjens & Heine, 2014); specifically, it was found that people tend to automatically associate behaviors in which motivations related to knowledge acquisition override morality (e.g., moral purity violations) with scientists (as opposed to a broad range of control groups). In sum, for progress to be meaningful, advancing human *knowledge* and our material environment is not sufficient; such progress would have to be accompanied by an improvement of the human *condition*.

Why would we expect such belief in an improving human condition to provide protection when facing existential threat? Again building on Gray’s (2004, 2007) ideas, we suggest that this anxiety-buffering function is primarily due to the existential meaning provided by viewing the course of human history as progressing forward. Belief in human progress imbues the course of history with significance and purpose. Although the literature provides diverging definitions of meaning (e.g., Heine, Proulx, & Vohs, 2006; Steger, Frazier, Oishi, & Kaler, 2006),¹ we use the term to refer to purpose and significance (Spilka, 1993), which according to terror management theory helps human beings to transcend their own existence through affirming their significance in an enduring world (Pyszczynski, Sullivan, & Greenberg, 2014; see also Bering, 2003). This means that belief in progress has to entail more than simply being optimistic about the future and the things we are surrounded by (“things will improve”); it should concern the future development of *humankind* (“we will improve”). Just as the religious conception of salvation and an afterlife provides the hope of literal immortality, the secular concept of social-moral progress imbues the course of history with meaning and thus provides a sense of symbolic immortality. The belief that humankind is improving and moving forward toward a better future establishes a meaningful, purposeful link between past and future (and harbors the promise of continuing progress once the individual itself is no longer around; see also Sani, Herrera, & Bowe, 2009).

RELIGION AND BELIEF IN PROGRESS

There are several reasons to predict that belief in social-moral progress is more likely to be bolstered after existential threat by secular than religious individuals. If it is primarily a

¹There seems to be a distinction between meaning as comprehensibility/coherence versus meaning as purposefulness/significance (e.g., Janoff-Bulman & Yopyk, 2004). The second definition, which we focus on, seems more closely related to existential concerns (see also Becker, 1971; Hill et al., 2000; Wong & Fry, 1998).

secular worldview that functions in some ways like religious belief—and if Gray (2004, 2007) is right in observing that faith in social-moral progress is a secular substitute for religion as a provider of death-transcending meaning—then the *threat-induced* increase of faith in social-moral progress should be observed primarily among secular (unaffiliated) participants. In addition, to the extent that some religious denominations view the modern world as an evil and corrupt departure from a previous more virtuous time, it is unlikely that they would have much hope for social-moral progress or derive much comfort from the expectation of a better future here on earth. Indeed, their emphasis on an afterlife as their hope for a better existence may actively discourage hope for improvements in the human condition during their earthly existence. However, this is not to say that all religious individuals necessarily eschew all possibility of social-moral progress, but rather that such beliefs are unlikely to function as sources of existential security as it does for those of a secular orientation. The aforementioned reasoning suggests that it is likely that certain religious affiliations that are characterized by intrinsic religiousness (e.g., Calvinist Protestants), and a more pessimistic view on the (im-)possibility of human progress, will be especially unlikely to bolster belief in progress after threat. When the baseline belief is that the human condition is either predestined or even in decline, they may even enhance this particular belief as a form of worldview defense.

To be able to properly test the moderating role of religious belief, we conducted a study among a representative sample of the Dutch population. To shed light on the relation between belief in social-moral progress and religion, we assessed the specific religious affiliation of participants, added measures of religiosity and belief in inherent sin, and included an adaptation of the Moral Foundations Questionnaire (Graham, Haidt, & Nosek, 2009).

HYPOTHESES AND OVERVIEW

To test our main hypothesis that not all forms of belief in progress are equally sought as sources of existential security, we investigated how different forms of this belief relate to existential anxiety. We predicted that belief in social-moral progress but not technological progress would be increased by mortality salience. The relatively large number of both secular and religious individuals in the study enabled us to assess the possibility of a moderating role of religiosity. It also allowed for more detailed comparisons of secular, Catholic, and Protestant participants (the three largest affiliations in our sample), as well as to explore the relation between belief in social-moral progress and belief in sin, the various moral foundations, and religious belief and affiliation.

We conducted a study among a representative sample of the 18- to 65-year-olds in the Dutch population, which enhances the generalizability of previous findings (cf. Henrich, Heine, & Norenzayan, 2010) and enabled us to properly assess religiosity as a possible moderator. Our previous work (Rutjens et al., 2009) relied on a Dutch university student sample with generally little variance in religious beliefs (see also Rutjens, van der Pligt, & van Harreveld, 2010). After the mortality salience manipulation and the belief in progress measures, we assessed the specific religious affiliation of participants, strength of religious faith, belief in inherent sin, and an adaptation of the Moral Foundations Questionnaire (Graham et al., 2009) to determine how belief in human progress might relate to morality-related expectations for the future. Finally,

to help us interpret their responses to the progress measure, we asked respondents what they felt constitutes social-moral progress (see also Eibach & Libby, in press).

We hypothesized that people will bolster faith in future human (social-moral)—but not technological—progress when their mortality has been made salient (Greenberg et al., 1997). We tested this by assessing participants' expectations of social-moral and technological progress after being reminded of either their own mortality or an aversive control topic. Moreover, for the reasons explained in the introduction, we expected that people low in religiosity are especially prone to respond to mortality salience by bolstering their belief in social-moral progress.

METHOD

Participants

A total of 438 individuals were approached via Motivaction, a Dutch research agency, employing an online survey. The selection procedure that was used is referred to as *propensity sampling*, a technique that takes into account—and corrects for—under- and overrepresentation of specific groups in online surveys (e.g., pertaining to age and education) and facilitates a representative sample of the Dutch population ages 18 to 65 on the variables age, gender, occupation, and area. Of the 438 potential respondents, 162 did not wish to participate (yielding a response rate of 63%); thus, 276 respondents completed the survey in exchange for a monetary reward of 3.50 euros. All measures were programmed in an online survey tool, and participants completed the survey on a computer from their own homes. The sample consisted of 145 men and 131 women. Mean age was 42 years ($SD = 12.79$), with a range of 18 to 64. Religious affiliation of the participants was as follows: 116 unaffiliated, 60 Catholic, 63 Protestant, 5 Buddhist, 2 Hindu, 2 Muslim, 2 earth religion/pagan, and 26 “other.”

Procedure

Participants were welcomed to the survey and randomly assigned to a mortality salience or a control condition (dental pain salience; Greenberg et al., 1997). In the mortality salience condition, participants responded to two open-ended questions (Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989): “Please briefly describe the emotions that the thought of your own death arouses in you” and “Write down, as specifically as you can, what will happen to you as you die and once you are physically dead.” Participants in the dental pain condition were asked two parallel questions with respect to dental pain. After the manipulation participants filled out the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) to create a delay between the manipulation and the dependent measures (see Arndt et al., 1997). Then participants proceeded with two belief in progress measures (one measuring social-moral progress and the other measuring technological progress; the order of the measures was counterbalanced). The social-moral progress measure was introduced with a short instruction entitled “Humankind’s development: Civilization in perspective.” The text read as follows: “We would like to ask you a question about the course of human history: Do you think that people will advance morally, ethically, and socially, or decline? We would like you to use the slider scale to indicate your views on *the development of humankind* in the next decade.” The

technological progress instruction was entitled “The Development of Science and Technology” and read as follows: “We would like to ask you a question about the development of science and technology Do you think that science and technology will reflect progress or decline? We would like you to use the slider scale to indicate your views on *the development of science and technology* in the next decade.”

Participants were then asked to indicate their belief in social-moral progress during the next decade, on a sliding scale resembling a visual graph (based on Rutjens et al., 2010). In the current study, the measure consisted of a slider bar, which was set at zero (labeled *no change*) and could be moved to the left (labeled *decline*) or to the right (labeled *progress*). The endpoints of the scale were -10 (*decline*) and $+10$ (*progress*). The layout of the technological progress measure was identical. After both measures, we presented participants with an open-ended question gauging the developments they had in mind when answering the scales. More information on responses to the open-ended questions can be found in the appendix.

The study continued with a future (expectation)-oriented adaptation of the Moral Foundations Questionnaire (Graham et al., 2009) consisting of 10 items (a mix of the moral judgments and moral relevance parts of the questionnaire) and altered the wording to represent statements about the future (e.g., “I believe that in the future there will be more compassion for those who are suffering”). For each of the five categories of the original Moral Foundations Questionnaire there were two items (i.e., harm, fairness, ingroup, authority, purity). We included this questionnaire for exploratory purposes in order to assess whether belief in social-moral progress is especially related to any of the five most widely researched moral foundations. Next, the Santa Clara Strength of Religious Faith Questionnaire (Plante & Boccaccini, 1997) was presented, which served as our measure of the strength of participants’ religious beliefs (10 items, $\alpha = .98$). A typical item is “I look to my faith as providing meaning and purpose in life.” All items were scored on 4-point scales from 1 (*strongly disagree*) to 4 (*strongly agree*). We added a measure about belief in humankind’s inherent sinfulness to the religiosity questionnaire: “All people are inherently moral sinners” (scored on the same 4-point scale). Finally participants filled out a number of demographic measures.

RESULTS

Strength of Religious Belief

Scores on the Santa Clara Strength of Religious Faith Scale could range from 10 (low faith) to 40 (high faith). Mean score was 19.66 ($SD = 9.57$). There was no main effect of mortality salience on this scale, $t(274) = .70, p = .48$.²

Primary Analysis

A three-way generalized linear model mixed-design interaction analysis was conducted in which condition (mortality salience vs. dental pain) and religiosity (continuous Santa Clara Religiosity

²However, there was a marginally significant interaction effect of affiliation and mortality salience. We come back to this later.

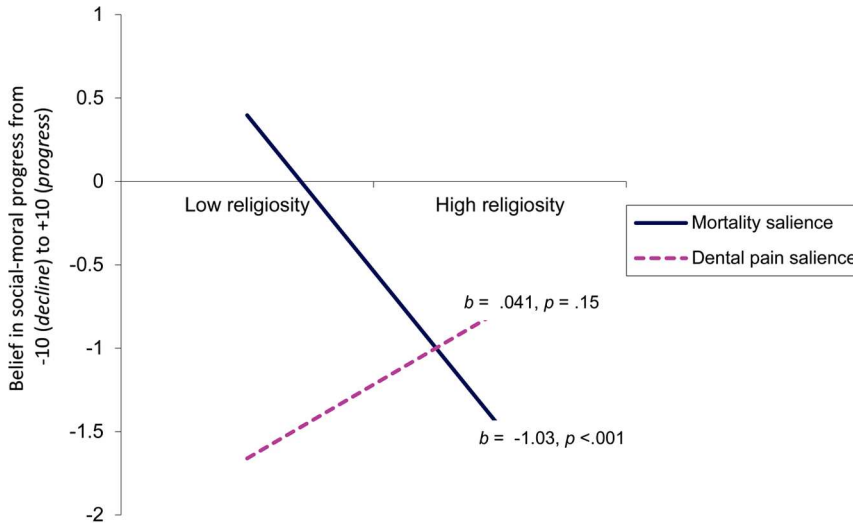


FIGURE 1 Belief in social-moral progress as a function of condition (mortality salience or dental pain) and religiosity (1 *SD* below the mean or 1 *SD* above the mean).

scores) were entered as between-subjects factors and type of progress (belief in social-moral vs. technological progress) was entered as a within-subjects variable. This analysis yielded a number of effects, which were all qualified by the predicted significant three-way interaction. First, we obtained a main effect of condition, $F(1, 272) = 8.33, p = .004, \eta_p^2 = .030$, and a condition \times religiosity interaction effect, $F(1, 272) = 6.15, p = .014, \eta_p^2 = .014$. We also obtained a main effect of type of progress, $F(1, 272) = 103.10, p < .001, \eta_p^2 = .275$, and an interaction of type of progress and condition, $F(1, 272) = 8.04, p = .005, \eta_p^2 = .029$. Finally, we obtained the expected significant three-way interaction effect of condition, religiosity, and type of progress, $F(1, 272) = 7.44, p = .007, \eta_p^2 = .027$. Figures 1 and 2 provide a graphic depiction of these results centering religiosity one standard deviation above or below the mean. Simple effect analyses show that the only significant effect of mortality salience was that on belief in social-moral progress among participants low in religiosity (-1 *SD*), $t = 3.63, p < .001$ (all simple slopes can be found in Figs. 1 and 2).

Belief in Sin, Moral Foundations, and Religiosity

Responses to the belief in inherent sin question correlated positively with the mean religiosity score, as measured by the Santa Clara Strength of Religious Faith Questionnaire ($r = .55, p < .001$). Moreover, as might be expected, belief in humankind's inherent sinfulness correlated negatively with belief in social-moral progress ($r = -.12, p = .04$). Of interest, when looking at the within-cell correlations, the negative relation between belief in sin and social-moral progress was observed only in the mortality salience condition. The within-cell correlation in

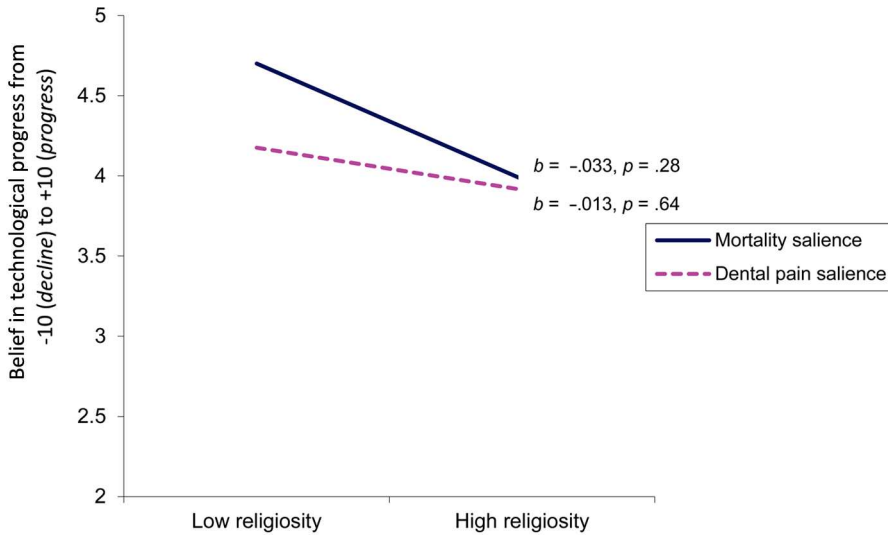


FIGURE 2 Belief in technological progress as a function of condition (mortality salience or dental pain) and religiosity (1 *SD* below the mean or 1 *SD* above the mean).

the mortality salience condition was $-.23$ ($p = .01$),³ but there was no meaningful correlation in the dental pain condition. Belief in social-moral progress and strength of religious faith did not correlate across conditions. However, within-cell correlations revealed a significant negative correlation in the mortality salience condition ($r = -.31$, $p < .001$; but, again, no meaningful correlation in the dental pain condition).

There was no effect of mortality salience on the five morality expectations categories (harm, fairness, ingroup, authority, purity), nor was there an interaction effect of mortality salience and religiosity, except for a marginal interaction effect on moral harm ($\beta = -.10$, $t = -1.64$, $p = .10$). Correlational analyses, however, revealed some interesting relations. There was a modest negative correlation between moral fairness expectations and religiosity ($r = -.16$, $p < .01$) and a marginally significant negative correlation between moral purity expectations and religiosity ($r = -.11$, $p = .08$). These two foundations, as well as moral harm, were also negatively related to belief in inherent sin ($ps < .02$). Of interest, responses to all five moral expectancy foundations correlated positively with belief in social-moral progress (all $ps < .001$). This substantiates our measure of belief in social-moral progress and shows that it is related to the five most widely researched moral foundations as laid out in moral foundations theory (Graham et al., 2009; Graham et al., 2013). Belief in technological progress also correlated with harm, fairness, and purity expectations, but when entering belief in social-moral progress, belief in technological progress, strength of religious faith, and belief in inherent sin as predictors in

³Please note that, as mentioned later on, this correlation is essentially driven by the Protestant participants (who also score highest on religious faith).

TABLE 1
Predicting "Morality Expectations"

	<i>Individualizing Virtues</i>		<i>Ingroup</i>	<i>Binding Virtues</i>	
	<i>Fairness</i>	<i>Harm</i>		<i>Authority</i>	<i>Purity</i>
Predictor					
Belief in social-moral progress	.37**	.35**	.25**	.25**	.40**
Belief in technological progress	-.03	.01	-.02	.05	.01
Strength of religious faith	-.04	.05	.08	-.01	-.02
Inherent sin	-.18**	-.14*	-.11	-.07	-.11

Notes. Standardized betas are depicted.

* $p < .05$, ** $p < .01$.

a regression, belief in technological progress no longer had predictive value. Belief in social-moral progress was the best predictor of all morality expectations (see Table 1).

In the next section, we delve more deeply into religious affiliation and explore whether there are substantial differences between the largest three groups in our sample (nonreligious, Catholic, Protestant).

Religious Affiliation

As described earlier, our sample largely consisted of the following religious affiliations: unaffiliated, or secular ($n = 116$), Catholic ($n = 60$), and Protestant ($n = 63$). In this section, we report meaningful differences between these three groups of participants. First, we assessed the impact of religious affiliation on belief in social-moral progress, religiosity (strength of religious faith scores), and belief in inherent sin. There were, not surprisingly, relations between affiliation and religious faith and belief in sin, where Protestants scored highest ($ps < .001$); subsequent least significant difference (LSD) post hoc tests revealed that Catholics scored lower than Protestants but higher than unaffiliated participants (all post hoc comparisons, $p < .01$). There was no main effect of affiliation on belief in social-moral progress (see Table 2).

Subsequently, we added mortality salience as a predictor and conducted a 3 (affiliation: unaffiliated vs. Catholic vs. Protestant) \times 2 (condition: mortality salience vs. dental pain) analysis of variance on the same four measures, which revealed a significant interaction effect on belief in social-moral progress, $F(2, 233) = 4.01$, $p = .019$, $\eta_p^2 = .033$ (depicted in Fig. 3). Note that this interaction effect remains significant when adding strength of religious faith and belief in inherent sin as covariates to this analysis ($p = .021$, $\eta_p^2 = .033$). Mortality salience *increased* belief in social-moral progress among nonaffiliated participants, $F(1, 115) = 5.77$, $p = .018$, $\eta_p^2 = .048$, and among Catholics, $F(1, 59) = 4.05$, $p = .049$, $\eta_p^2 = .065$. It marginally *decreased* belief in social-moral progress among Protestants, $F(1, 62) = 3.54$, $p = .065$, $\eta_p^2 = .055$. Looking at this from a different angle, although there were no significant differences between affiliations in the dental pain condition, LSD post hoc tests show that Protestants in the mortality salience condition displayed significantly more belief in decline than both Catholic ($p < .01$) and unaffiliated ($p < .01$) participants. Thus, the fact that mortality salience does not increase belief in social-moral progress among religious participants seems to be primarily due

TABLE 2
Main Effects of Affiliation on Belief in Progress, Strength of Religious Faith, and Belief in Sin

	<i>Unaffiliated</i> ^a	<i>Catholic</i> ^b	<i>Protestant</i> ^c	<i>Test Statistics</i>
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	
Belief in social-moral progress	-.75 (3.86)	-.57 (2.97)	-1.35 (2.29)	$F(2, 236) = 1.01, p = .366$
Belief in technological progress	4.53 (3.05)	3.58 (3.05)	4.03 (2.57)	$F(2, 236) = 2.15, p = .118$
Strength of religious faith	13.14 (5.07) _a	18.88 (6.25) _b	29.38 (8.50) _c	$F(2, 236) = 130.56, p < .001$
Inherent sin	1.59 (0.88) _a	1.95 (0.83) _b	2.84 (1.04) _c	$F(2, 236) = 39.00, p < .001$

Notes. Within rows, means with different subscripts differ significantly at $p < .01$.

^a $n = 116$.

^b $n = 60$.

^c $n = 63$.

to the Protestant participants, who score highest on both religious faith and belief in inherent sin. Further corroborating this, within the mortality salience condition, correlations between belief in social-moral progress and belief in inherent sin were not found for unaffiliated and Catholic participants (both $ps > .40$), whereas there was a strong negative association between these two variables among Protestant participants ($r = -.49, p = .011$).

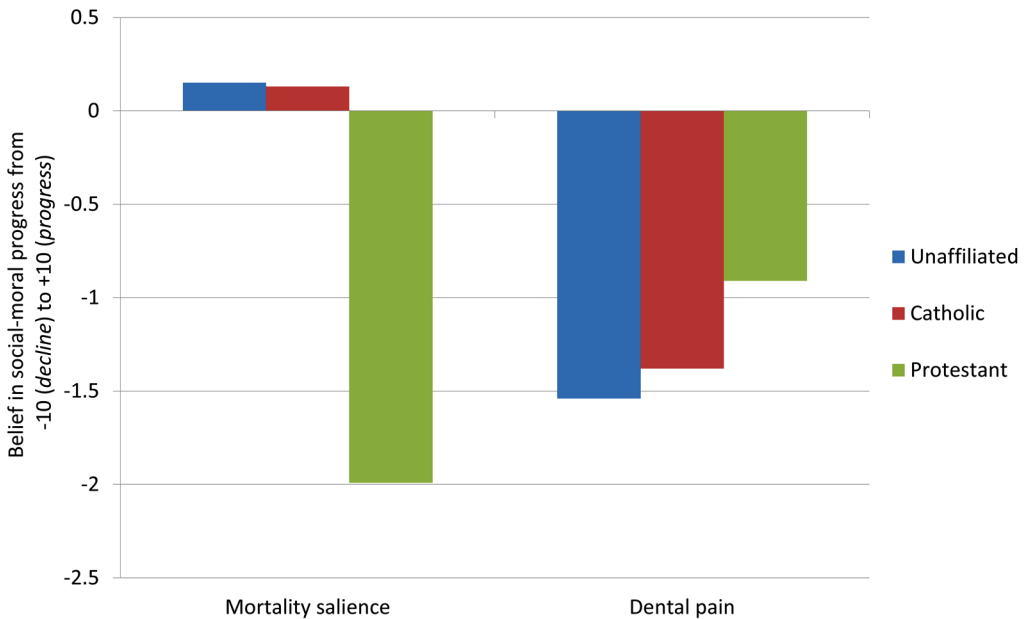


FIGURE 3 Belief in social-moral progress as a function of condition (mortality salience vs. dental pain) and affiliation (largest three groups in sample, $N = 239$). *Note.* Mortality salience increases belief in social-moral progress among unaffiliated and Catholic participants and leads to marginally more belief in social-moral decline among Protestants.

TABLE 3
Scores on Morality Expectations as a Function of Affiliation

	<i>Unaffiliated</i> ^a	<i>Catholic</i> ^b	<i>Protestant</i> ^c	<i>Test Statistics</i>
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	
Moral harm	3.20 (1.03) _a	3.21 (.85) _a	2.98 (.76) _a	$F(2, 236) = 1.32, p = .268$
Moral fairness	3.30 (1.04) _a	3.16 (.78) _a	2.67 (.92) _b	$F(2, 236) = 9.16, p < .001$
Moral ingroup	3.38 (0.91) _a	3.49 (.85) _a	3.36 (.90) _a	$F(2, 236) = 0.42, p = .66$
Moral authority	3.16 (0.92) _a	3.31 (.83) _a	3.10 (.94) _a	$F(2, 236) = 0.92, p = .40$
Moral purity	3.18 (0.97) _a	3.28 (.84) _a	2.90 (.77) _b	$F(2, 236) = 3.22, p = .042$

Notes. For the moral foundations of fairness and purity, post hoc tests showed that Protestants were significantly less optimistic about the future. Within rows, means with different subscripts differ significantly at $p < .05$.

^a $n = 116$.

^b $n = 60$.

^c $n = 63$.

Next we looked at the strength of religious faith measure as a dependent variable. Of interest, we obtained a marginally significant interaction effect, $F(2, 233) = 2.61, p = .076, \eta_p^2 = .022$. Although there was no effect for Catholics (their faith remained unchanged), the Protestant participants displayed a marginally significant increase in their faith, $F(1, 62) = 2.95, p = .091, \eta_p^2 = .046$. Protestants' faith in the mortality salience condition ($M = 31.54, SD = 7.44$) was somewhat higher than in the dental pain condition ($M = 27.86, SD = 8.95$). Unexpectedly, strength of religious faith among the unaffiliated participants in the mortality salience condition ($M = 14.09, SD = 5.60$) was also somewhat higher compared to the dental pain condition ($M = 12.31, SD = 4.44$), $F(1, 115) = 3.66, p = .058, \eta_p^2 = .031$. Although these means are very low (the scale ranged 10–40), this is still an interesting effect and might point to a somewhat “promiscuous” response to mortality salience among unaffiliated participants that runs counter to their beliefs under control conditions (as compared to the other two groups).

Finally, we compared seculars, Catholics, and Protestants on the morality expectations items (see Table 3). There were no significant interaction effects of mortality salience and affiliation. However, we did obtain significant main effects of affiliation on the fairness and purity expectations (but not on the other morality expectations); LSD post hoc tests in both cases showed that, again, Protestants held more gloomy expectations than seculars and Catholics (the latter two groups did not differ from each other).

DISCUSSION

The current research investigated the existential function of belief in progress. As expected, it was found that belief in social-moral—but not technological—progress is bolstered by participants low—but not high—in religious faith as a buffer against existential threat. In our study, which featured a representative sample of the Dutch population, participants were asked to indicate their belief in social-moral and technological progress for the coming decade. A mortality salience induction led participants to bolster beliefs in social-moral progress, but the manipulation had no effect on belief in technological progress. Content analysis of participants'

descriptions of the type of progress to which they were referring to with the term social-moral progress revealed themes such as cooperation, social cohesion, and tolerance (see the appendix). These results suggest that a prerequisite for belief in progress to serve as a buffer against existential threat is that it must concern *ourselves*; in other words, we need to believe that the essence of humanity will get better. The mere notion of things improving (i.e., technological advances) does not seem to provide a potent existential source to draw from.

These findings thus show that for progressive faith to provide a psychological shield against existential anxiety, it has to entail more than technological advances (which could increase our ability to predict and control the environment or provide optimism, e.g., in the case of combating environmental problems or disease; Meijers & Rutjens, 2014; Rutjens et al., 2010). Rather, to imbue the course of history with meaning and purpose, and thus facilitate protection against mortality concerns, people need to believe that humankind itself will continue to improve in socially and morally significant ways. These findings resonate with Gray's (2004, 2007) observation that technological progress is an observable characteristic of contemporary society that is assumed to be relatively stable, whereas belief in human progress (i.e., moral, ethical, societal) requires faith and is of considerable existential significance to many people (see also Bury, 1920/1955). Social-moral progress thus might be qualitatively different from technological progress in people's minds.

Previous research, however, has shown that both human social and technological progress beliefs are enhanced when *personal control* is low (Rutjens et al., 2010) and that affirming belief in scientific progress enhances perceptions of the world as orderly (Meijers & Rutjens, 2014). It is not hard to imagine how observing technological and scientific—and indeed some forms of social—progress may provide people with the assurance that things will be under control in the future (Rutjens, van der Pligt, & van Harreveld, 2012). Existential threat, however, triggers a need for existential comfort (e.g., Rutjens & Loseman, 2010; Shepherd, Kay, Landau, & Keefer, 2011, but see Fritsche et al., 2008; Heine et al., 2006), and so the current findings suggest that a belief in social-moral progress has qualitatively different psychological functions than belief in technological progress. The notion of technological advance may foster a sense of control over the environment, but the current results suggest that it does not provide existential meaning like belief in an advancing *humanity* does (Gray, 2004).⁴

The idea that belief in social-moral progress functions as an existential-psychological crutch for secular individuals (i.e., those low in religious belief) in particular was supported by the interaction effect of mortality salience and strength of religious faith on belief in social-moral progress. It is important to note here that we do not claim that religious individuals do not believe at all in progress while their secular counterparts display a more optimistic view on human advancement. Rather, we predicted a *threat-induced* increase in belief in social-moral progress and expected this increase to occur primarily among seculars. The current research confirmed this prediction by showing no main effects but only an interaction effect of mortality

⁴Previous work that looked at the existential function of belief in progress (Rutjens et al., 2009) found that affirming a general belief in progress eliminated the effects of mortality salience on subsequent measures. This affirmation addressed belief in scientific-technological progress but also mentioned “human progress” and the vision of a “better world for our children.” An unpublished study was later run in an attempt to experimentally tease apart technological and social-moral progress. In this study, two essays were presented to participants; one essay challenged the notion of social-moral progress and the other questioned technological progress. Death-thought accessibility was significantly higher in the condition where social-moral progress was questioned (Rutjens et al., unpublished).

salience and strength of religious faith on belief in social-moral progress. Of interest, follow-up analyses revealed a somewhat more complicated picture and actually lend support to the idea that, indeed, some religious people actually do bolster belief in social-moral progress upon mortality salience. Although we found no main effect of specific religious affiliation (secular vs. Catholic vs. Protestant) on belief in social-moral progress, we did find—again—only an interaction effect with mortality salience (see Fig. 3). This interaction shows that secular *and* Catholic, but not Protestant, individuals use faith in social-moral progress as a means of coping with existential threat. As described in the Results section, this interaction effect remained significant when controlling for strength of religious faith and belief in inherent sin. We discuss these findings in more detail in the next section.

PROTESTANTS VERSUS THE REST

Perceiving faith in progress as functioning to a certain extent as a psychological replacement for afterlife beliefs among nonbelievers makes sense when noticing the parallels with Christian beliefs in salvation and providence. Human progress has been argued to entail a secular version of such beliefs (Bury, 1920/1955; Gray, 2004, 2007); afterlife beliefs often entail the notion of moving toward a better plane of being, and a similar upward movement can be found in the notion of humanity progressing toward a more perfect state here on earth.

However, the current results clearly show that the moderating effect of religiosity primarily reflects the diverging response pattern among the Protestant participants. In other words, whereas for secular and Catholic participants mortality salience pushed what could be described as a baseline belief in human decline toward a modest belief in progress, for Protestants belief in decline became marginally more pronounced. Simultaneously, Protestants held stronger religious beliefs (as measured with the Santa Clara Strength of Religious Faith questionnaire) and expressed the stronger beliefs in inherent sin as well as the least optimistic views on future morality (i.e., fairness and purity). Whereas Catholics and unaffiliated participants seemed akin in their use of social-moral progress as a defense against existential threat, it appears that this was not a viable option for Protestants.

It is important to note here that these findings may be specific to Protestants and Catholics in the Netherlands, where the majority of Protestants are Calvinists who belong to the Dutch reformed church. Whether these results generalize to other parts of the world where the ideologies and worldviews common among these denominations are different is an open question for future research. Along these lines, a distinction between secular and religious individuals might also not necessarily apply to all other religious affiliations. For example, it remains to be seen to what extent mortality salience would increase belief in social-moral progress (vs. other worldviews) among Hindus, Muslims, Jews, or Buddhists. This would be a fruitful avenue for future research.

How do (Dutch) Protestants quell mortality-related concerns? Although the current work does not provide conclusive answers to this question, some insight might be derived from the marginally significant interaction effect of religious affiliation and mortality salience on reported religious belief. Strength of religious faith, which was already highest for Protestants, increased even more for this group as a result of mortality salience. This fits earlier work showing that religious individuals, particularly those with an intrinsic orientation, turn to religious sources of

meaning when facing existential threat (e.g., Jonas & Fischer, 2006; Norenzayan et al., 2009).⁵ Protestants have been shown to score higher on intrinsic religiousness than Catholics (Cohen et al., 2005) and to have greater belief in the soul (Li et al., 2012). It also fits with work on coping with stressful life events (Park, Cohen, & Herb, 1990; Tix & Frazier, 1998) and grief (Wojtkowiak, Rutjens, & Venbrux, 2010), where more explicit comparisons of Protestants versus Catholics indicate that Protestants rely more on their religious convictions and on religious coping strategies than Catholics (see also Cohen et al., 2005). Moreover, Wojtkowiak et al. (2010) found that in coping with loss, Dutch Catholics did not differ from Dutch seculars in their search for meaning, which is in line with the current pattern of results.

CODA

Whereas many religious individuals might focus on the promise of a better world in the form of a supernatural hereafter, those not adhering to a religion must find solace in earthly existence. The current study shows that a belief in the social-moral progress of humankind indeed harbors an existential function and formulates an answer to “the human need for meaning” (Gray, 2007). Seculars’ (as well as Catholics’) bolstering of belief in social-moral progress to cope with death concerns suggests that they focus on a better future here on earth. From this perspective, the secularization of most Western countries might in itself not lead to a better world,⁶ but when people are motivated to search for existential meaning it at least triggers a motivated tendency to *believe* in a better world. Perhaps those adhering to or promoting a politics of progress can benefit from this idea, by providing people with the tools to find meaning in building a better future and seeking moral and societal progress. Moreover, viewing the course of history as linear and not cyclic or chaotic might prove to be an effective way to cope with extreme historic as well as more recent examples of human moral failure (see also Greenaway & Louis, 2010); acceptance of their occurrence might perhaps be facilitated by realizing that people can learn from the past.

To conclude, in order to assuage existential anxiety by affirming a secular belief in progress, people have to convince themselves that humankind can improve and that history indeed reflects “a march to a better world.”

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The title of this article is based on Gray (2007, p. 35).

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⁵Generally, religious variables such as belief in an afterlife have been found to correlate negatively with death anxiety (Cohen et al., 2005; see also Dechesne et al., 2003).

⁶Although it is worth mentioning that some thinkers have argued that secularization actually *has* resulted in a morally advanced world (see Dawkins, 2006).

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APPENDIX

What Constitutes Social-Moral Progress According to Participants?

Upon completion of the belief in progress measures, participants were asked to indicate, in one or two sentences, which domain they had in mind when thinking about human moral and societal progress, and when thinking about technological progress. Of particular interest to the current research is the content of the social-moral progress measure. Inspection of participants' answers revealed a number of themes that were frequently mentioned. Of these answers, 65% fell into one of the following four categories: Norms and values brought by civilization versus the blurring of moral and social standards (19%); tolerance, acceptance, and cooperation versus violence, intolerance, and intercultural conflict (14%); altruism and social cohesion versus individualism, egocentrism, and polarization (24%); sustainability and care for the environment versus profit seeking and exploitation of natural resources (8%). Of interest, two of the larger categories (14% and 24%) revolve around the theme of cooperation and social cohesion versus individualism and intolerance, thus mapping onto what according to Bloom (2010) is one of the most important facilitators of moral progress: associating with other humans and sharing common goals. Other themes that were mentioned less frequently were mankind's arrogance, economic progress, greed, righteousness, and spirituality.