

# Religiosity and Desired Emotions: Belief Maintenance or Prosocial Facilitation?

Personality and Social Psychology Bulletin  
2020, Vol. 46(7) 1090–1106  
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DOI: 10.1177/0146167219895140  
journals.sagepub.com/home/pspb



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## Abstract

We assessed how religiosity is related to desired emotions. We tested two competing hypotheses. First, religiosity could be associated with a stronger desire for emotions that strengthen foundational religious beliefs (i.e., more awe and gratitude and less pride). Second, religiosity could be associated with a stronger desire for emotions that promote prosocial engagement (e.g., more love and empathy and less anger and jealousy). Two cross-cultural studies supported the first hypothesis. Religiosity was related to desire for emotions that strengthen religious beliefs, but not to desire for socially engaging or socially disengaging emotions. These findings held across countries and across several different religions. A third study investigating the mechanisms of both hypotheses using structural equation modeling supported only the first hypothesis. This research extends prior work on desired emotions to the domain of religiosity. It demonstrates that the emotions religious people desire may be those that help strengthen their religious beliefs.

## Keywords

religion, emotion, emotion regulation

Received July 27, 2018; revision accepted November 1, 2019

If religion is to mean anything definite for us, it seems to me that we ought to take it as meaning this added dimension of emotion, this enthusiastic temper of espousal

—(James, 1902, p. 48)

Williams James identified emotional rigor as the hallmark of religion. Subsequent evidence linking religiosity with a unique profile of emotion experience supports this assertion (Van Cappellen et al., 2016). What underlies such links? Some have argued that links between religiosity and emotional experiences reflect differences in how more (vs. less) religious people react emotionally to events (e.g., Burris & Petrican, 2011; Kim-Prieto & Diener, 2009; Van Cappellen et al., 2016), while recent work suggests that religiosity may also be linked to unique patterns of emotion regulation (Vishkin et al., 2014). To date, evidence for links between religiosity and emotion regulation has focused on the means with which people regulate their emotions, such as cognitive reappraisal (Vishkin et al., 2016). In this investigation, we test whether religiosity may also be linked to the end-states people desire to attain when regulating their emotions.

## Desired Emotions and Religion

Desired emotions refer to the desired end-states of emotion regulation (Tamir, 2016). Although desired emotions are often

linked to experienced emotions, the two are conceptually and empirically distinct. Desired emotions refer to what people *want* to feel, whereas experienced emotions refer to what people actually feel (Tsai et al., 2006). Regardless of the emotions people actually feel, the emotions they want to feel can vary dramatically across people and contexts (Tamir, 2016).

People are motivated to experience emotions that maximize pleasure or utility. Across contexts, people desire emotions that are consistent with their values (Tamir et al., 2016). In specific contexts, people desire emotions that help them attain their goals (Tamir, 2009). People may be motivated to experience emotions that support a variety of goals, including behavioral (to do), social (to relate), and epistemic (to know or believe; Tamir, 2016). In this investigation, we build on these ideas to understand desired emotions and religiosity. We test two non-mutually exclusive accounts. According to the belief maintenance account, religiosity is associated with desiring emotions that promote the recognition of supernatural beings. According to the prosocial facilitation account,

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religiosity is associated with desiring emotions that promote and maintain positive interpersonal relations. We describe each of these accounts in turn.

### The Belief Maintenance Account

The most common characteristic in definitions of religion is the belief in supernatural beings (Sosis & Alcorta, 2003). The recognition of supernatural beings is central to Buddhism (Spiro, 1966), and the religious imperative to recognize a supernatural being has been codified in Christian scripture (“The work of god is this: to believe in the one he has sent”; John 6:29), Jewish law (“The foundation of foundations and pillar of wisdoms is to know that there is a first cause and He created all that exists . . . The knowledge of this matter is a positive commandment”; Laws of the Foundation of the Torah, 1:1-5, Maimonides), and the *Shahada* declaration of faith in the first of the five pillars of Islam (“There is no god but *Allah* . . .”). In all these instances, recognizing a supernatural being is a religious imperative. Moreover, as a type of attachment figure, people actively seek to be close to god (Kirkpatrick, 2005). In many religious traditions, being close to god is a reflection of believing and recognizing god (e.g., “But ye that did cleave unto the Lord your God are alive,” Deuteronomy 4:4; “Draw nigh to God, and he will draw nigh to you,” James 4:8, King James Version). Thus, a foundational religious belief that is common across religions is the recognition of, and connection to, beings whose stature is elevated relative to humankind. These beings are frequently attributed characteristics more encompassing than those of humanity (Metcalf, 2004), such as being omnipotent, omniscient, omnipresent, or omnibenevolent.

Fostering and maintaining such a belief can be facilitated by emotions that are elicited in response to other’s positive attributes. Conversely, such a belief may be hindered by emotions that are elicited in response to one’s own positive attributes. Haidt (2003) distinguished between these two classes of emotions, referring to them as other-praising and self-praising emotions, respectively. Other-praising emotions are responsive to the positive attributes of others, whereas self-praising emotions are responsive to the positive attributes of oneself.<sup>1</sup> We adopt this classification to identify emotions that may facilitate or hinder the recognition of higher beings.

Recognizing higher beings may be facilitated by emotions that signal praise for others (e.g., gratitude) and impaired by emotions that signal praise for the self (e.g., pride). To the extent that other-praising emotions can facilitate recognition of higher beings and self-praising emotions can impair it, religious individuals may be motivated to seek the former and avoid the latter. According to this account, religiosity is associated with a stronger desire for other-praising emotions and a weaker desire for self-praising emotions. Below, we expand on each category of emotions and its link to religiosity.

### Other-Praising Emotions

These emotions focus attention on the positive or expansive aspects of another agent. For instance, they may occur in response to good deeds and moral exemplars (Haidt, 2003). In a religious context, the other agent is often a supernatural being. Other-praising emotions comprise awe, elevation, and gratitude (Haidt, 2003).

Awe is elicited when people encounter something that is larger than themselves, whether in power, size, or prestige (Keltner & Haidt, 2003). Consequently, awe can lead to less self-focus, or to feeling small or insignificant (Shiota et al., 2007). Awe can also lead people to attribute personal accomplishments to external causes (Stellar et al., 2017). Moreover, the experience of awe can affect the self-concept by increasing one’s sense of being part of a greater whole (Shiota et al., 2007; Van Cappellen & Saroglou, 2012). Thus, awe is both other-praising and non-self-praising. In this respect, awe may foster an awareness of a divine agent and, in doing so, potentially promote the recognition of a supernatural being.

Existing evidence links religiosity to the experience of awe. Awe plays a central role in Judaism (Wettstein, 1997) and appears in Christian and Hindu scriptures (Keltner & Haidt, 2003). Furthermore, there is evidence that awe can actively promote religious experiences. Inductions of awe in experimental conditions, such as by watching videos about childbirth and natural wonders, has been found to increase religiosity (Saroglou et al., 2008). Given that awe promotes religiosity, and assuming that people who are more (vs. less) religious are more motivated to promote religiosity, the belief maintenance account posits that more (vs. less) religious individuals should find awe more desirable, regardless of how much awe they actually feel.

Elevation is highly similar to awe, except that it is elicited by exposure to moral virtue, such as acts of kindness and self-sacrifice (Algoe & Haidt, 2009; Haidt, 2003). Research on elevation is scarce, perhaps owing to the lack of a lay term by which it can be identified (Algoe & Haidt, 2009). Because elevation is difficult to assess, especially in diverse cultural contexts, we focused exclusively on awe in the present investigation.

Gratitude is another other-praising emotion. It accompanies the recognition of having benefited from another’s actions (McCullough et al., 2002). Gratitude leads to acknowledgment of the source of these benefits (Algoe & Haidt, 2009). As such, gratitude leads one to attribute one’s personal successes and well-being to an external, rather than an internal, source. Thus, gratitude may cultivate and sustain an awareness of an omnibenevolent agent and thereby promote the recognition of a supernatural being.

Existing evidence links religiosity to the experience of gratitude. Gratitude is common across several religions, including Buddhism (Berkwitz, 2003), Judaism (Schimmel, 2004), Christianity, and Islam (Emmons & Crumpler, 2000). There is empirical evidence for the positive association

between gratitude and religiosity (McCullough et al., 2002). To the extent that gratitude promotes religiosity, and assuming that people who are more (vs. less) religious are more motivated to promote religiosity, the belief maintenance account posits that more (vs. less) religious individuals should find gratitude more desirable, regardless of how much gratitude they actually feel.

### Self-Praising Emotions

Pride is the only emotion in the self-praising category (Haidt, 2003). In contrast to gratitude, pride is an emotion that accompanies the attribution of one's personal achievements to one's self (Tracy & Robins, 2004). Pride is associated with status (Tiedens et al., 2000) and personal control (Smith & Ellsworth, 1985). As such, the internal attributions of pride may supersede the attribution of one's personal achievements to an external source. These self-praising characteristics may serve to devalue or to make superfluous the existence of a divine agent. Therefore, pride could theoretically impair the recognition of supernatural beings.

Religiosity has indeed been linked to less pride. According to the Bible, pride leads to downfall (Proverbs 16:18). The medieval Jewish scholar Nachmanides encouraged his followers to abstain from any semblance of pride because it is an expression of defiance to god (*Iggeret Haramban*). In Christianity, pride is listed among the seven deadly sins (St. Aquinas, 1273/1947). To the extent that gratitude promotes religiosity, and assuming that people who are more (vs. less) religious are more motivated to promote religiosity, the belief maintenance account posits that more (vs. less) religious individuals find pride less desirable, regardless of how much pride they actually feel.

In summary, the belief maintenance account posits that more (vs. less) religious individuals find awe and gratitude more desirable, and pride less desirable, regardless of their actual emotional experiences. Moreover, these associations should hold across religions and cultures.

### The Prosocial Facilitation Account

The prosocial facilitation account of religion suggests that the primary function of religion is to create communities (Graham & Haidt, 2010) or enable large-scale cooperation in societies (Norenzayan et al., 2016). According to this account, belief in supernatural beings is not the central tenet of religion. Instead, it may serve as a uniting element around which people bind themselves into moral communities (Graham & Haidt, 2010). Alternatively, supernatural beings may serve as moralizing agents that ensure that people behave cooperatively, such as by behaving altruistically, not cheating, and not freeloading (Norenzayan & Shariff, 2008). If this account is correct, people who are more religious should desire emotions that affirm and maintain positive interpersonal relations and should be averse to emotions that

affirm individual autonomy and independence. Such emotions are referred to as socially engaging emotions and socially disengaging emotions, respectively (Kitayama et al., 2000, 2006).

### Socially Engaging Emotions

Socially engaging emotions include love, sympathy, guilt, and shame (Kitayama et al., 2000, 2006). These emotions may be elicited in a variety of situations, but collectively they serve a similar relationship-enhancing function. For example, love and trust promote closeness to others (Shaver & Mikulincer, 2006), whereas the anticipation of feeling guilty leads people to avoid interpersonal transgressions (Baumeister et al., 1994).

Religious teachings and practices direct adherents to experience socially engaging emotions. The Bible explicitly commands to love members of one's community (Leviticus 19:18) and to treat others with compassion (Zechariah 7:9). Furthermore, empirical studies have found that people who self-identify as belonging to a religion were more likely to report experiencing love relative to other emotions, irrespective of religious affiliation (Kim-Prieto & Diener, 2009, Study 1).

### Socially Disengaging Emotions

Socially disengaging emotions include anger, jealousy, frustration, and pride (Kitayama et al., 2000, 2006). These emotions may be elicited in a variety of situations, but collectively they serve a similar autonomy-enhancing function. For example, anger is elicited in response to violations of individual rights (Rozin et al., 1999) and frustration is elicited in response to interference with a goal that an individual is striving for (Berkowitz, 1989). Both anger and frustration lead to self-assertion, such as via aggression toward others.

Religious teachings and practices direct adherents to avoid socially disengaging emotions. The 10 commandments include a prohibition on feeling jealous or envious. Both envy and anger are enumerated among the seven deadly sins in Catholicism (St. Aquinas, 1273/1947). Furthermore, empirical studies have found that, across religious affiliations, people were least likely to report that their religion values anger and jealousy relative to other negative emotions (Kim-Prieto & Diener, 2009, Study 2).

To summarize, according to the belief maintenance account, religiosity should be associated with desire for emotions that foster the recognition of supernatural beings, including a stronger desire for other-praising emotions and a weaker desire for self-praising emotions. According to the prosocial facilitation account, religiosity should be associated with a stronger desire for emotions that promote positive social interactions and weaker desire for emotions that promote negative social interactions. According to both accounts, these associations should not vary by religion or

country. We tested these two non-mutually exclusive accounts.

## Challenges in Assessing Religiosity and Desired Emotions

### Challenges Related to Religiosity

We have reviewed two accounts regarding the central feature of religion across time and place: the recognition of supernatural beings and the facilitation of interpersonal relations. Therefore, it is incumbent upon us to assess links between desired emotions and religiosity across specific religions and national contexts. This raises various challenges. First, religiosity reflects the degree of adherence to religious beliefs, but these beliefs can vary dramatically as a function of religion. Therefore, when assessing associations between religiosity and desired emotions, it is necessary to test whether such associations hold across (or are moderated by) religion. One study to date has examined links between desired emotions and religion. The study (Kim-Prieto & Diener, 2009, Study 2) examined desired emotions as a function of religion (e.g., desirability of love in Christianity versus Buddhism). It asked participants to rate the degree to which they deemed different emotions to be desirable according to their own religion and then analyzed whether adherents of one religion deem a particular emotion to be more desirable relative to adherents of another religion. The authors did not compare the desirability of different emotions, although the reported means appear to favor the belief maintenance account. In particular, gratitude was more desirable and pride less desirable than other emotions. These findings, however, do not bear directly on the association between desired emotions and religiosity more generally. Indeed, that study did not assess religiosity.

Second, religion is a culture that is typically nested within a different (e.g., national) culture (A. B. Cohen et al., 2016), such that the particular expression of a religion can vary by national culture (e.g., Sasaki & Kim, 2011). In addition, the status of belonging to a minority or majority religious group within a particular country can affect outcomes (May & Smilde, 2016). Therefore, when assessing associations between religiosity and desired emotions, it is necessary to test whether associations hold across (or are moderated by) other cultural contexts. An association between religiosity and desired emotions among adherents of several religions in one national context may not generalize to other national contexts. Therefore, in the present investigation, we examined associations between religiosity and desired emotions in samples that differ both in religion and nationality.

### Challenges Related to Desired Emotions

Assessing links between religiosity and desired emotions involves distinguishing between desired and experienced

emotions. Desired and experienced emotions are conceptually and empirically distinct (Tsai et al., 2006), though they may be causally related. In particular, desired emotions set goals in emotion regulation, which may affect experienced emotions. Alternatively, experienced emotions may affect desired emotions to the extent that people desire emotions that are familiar to them (Ford & Tamir, 2014). Therefore, to establish the unique links between religiosity and desired emotions, we controlled for experienced emotions.

## The Current Investigation

The current investigation tested the potential links between religiosity and desired emotions. We investigated two non-mutually exclusive accounts. First, according to the belief maintenance account, religiosity is related to a stronger desire for other-praising emotions and a weaker desire for self-praising emotions. Alternatively, according to the prosocial facilitation account, religiosity is related to a stronger desire for socially engaging emotions and a weaker desire for socially disengaging emotions. To rule out the role of emotion experience in shaping emotion desirability, we controlled for actual emotional experiences. In addition, we examined whether these associations hold across individuals' religion and country. In Study 1, we compared eight samples from distinct world regions including adherents to numerous different religions.<sup>2</sup> Study 2 was preregistered and limited its scope to monotheistic religions and selected participants based on a stratified sampling of religiosity in three national samples, including Catholics from the United States, Jews from Israel, and Muslims from Turkey. Study 3 tested whether the mechanisms of belief maintenance and of prosocial facilitation mediate the associations between religiosity and desired emotions.

## Study 1

The data for Study 1 were collected as part of a larger cross-cultural study on emotions and values. The study included participants from eight countries (i.e., United States, Brazil, China, Germany, Ghana, Israel, Poland, Singapore), selected to represent distinct regions that differ in their prevailing cultural values (Inglehart & Baker, 2000; Schwartz, 2006). The study tested the associations between four higher-order categories of values (Schwartz, 1992) and desired emotions while controlling for experienced emotions.

## Method

**Participants.** The original sample consisted of 2,328 university students. After dropping cases due to missing data for religiosity and religion, the remaining sample consisted of 2,283 participants. Participants were from Brazil ( $N = 630$ , 63% female,  $M_{\text{age}} = 24.38$ ), China ( $N = 208$ , 53% female,  $M_{\text{age}} = 20.83$ ), Germany ( $N = 200$ , 50% female,  $M_{\text{age}} = 25.03$ ), Ghana

( $N = 200$ , 59% female,  $M_{\text{age}} = 22.88$ ), Israel ( $N = 248$ , 53% female,  $M_{\text{age}} = 24.21$ ), Poland ( $N = 293$ , 53% female,  $M_{\text{age}} = 21.72$ ), Singapore ( $N = 201$ , 69% female,  $M_{\text{age}} = 21.23$ ), and the United States ( $N = 302$ , 54% female,  $M_{\text{age}} = 19.60$ ).

**Procedure.** The study was completed online or in paper-and-pencil format, in participants' native language or their language of instruction. Participants completed measures unrelated to this investigation, rated their desired emotions, completed a filler task, and rated their experienced emotions. They completed several additional questionnaires and, finally, provided demographic information, including their religiosity and religion.

## Materials

**Religiosity.** Religiosity was assessed using a single-item self-report measure on a scale of 0 (*not at all religious*) to 7 (*very religious*). Single-item religiosity measures are common and converge strongly with multi-item measures of religiosity (Gebauer et al., 2012).

**Religion.** Religion was assessed using a single item with the following answer choices: Roman Catholic (27.6%), Protestant (10.6%), Evangelical (5.7%), Muslim (1.1%), Buddhist (2.8%), Hindu (0.5%), Jewish (10.9%), none (30.8%), and other (10.0%).

**Desired emotions.** Participants rated how often they want to experience particular emotions in their daily life on a 5-point scale from *never* (coded as 1) to *most of the time* (coded as 5). Emotion terms were presented in a predetermined and fixed random order. Although multiple emotion terms were rated, we focus only on terms relevant to the belief maintenance account (awe, gratitude, and pride), or to the prosocial facilitation account (socially engaging emotions—guilt and shame (reverse-scored), love, affection, trust, empathy, sympathy, and compassion, excluding gratitude [ $\alpha = .58$ ] and socially disengaging emotions—anger, contempt, hostility, jealousy, envy, frustration, irritation, and hatred, excluding pride [ $\alpha = .80$ ]).

**Experienced emotions.** Participants rated how often they typically experience particular emotions in their daily lives, using the same items included when rating desired emotions. Again, we focused only on the items relevant to the belief maintenance account or to the prosocial facilitation account (socially engaging emotions:  $\alpha = .66$ ; socially disengaging emotions:  $\alpha = .79$ ).

## Analyses

Participants are nested both within samples and within religions. We therefore ran a cross-classified multilevel regression (Fielding & Goldstein, 2006). We used the Hierarchical

Linear Modeling program HLM 7.0 (Raudenbush et al., 2011) with two Level 2 variables: sample and religion. We predicted each desired emotion by religiosity, controlling for the corresponding experienced emotion. In addition, we controlled for age and gender by including them as covariates in the Level 1 regression model because age and gender have been linked to desired emotions (Reed & Carstensen, 2012; Timmers et al., 1998). In these analyses, experienced emotion, age, and religiosity were cell-mean centered. Below is an example of a Level 1 equation predicting desired emotion.

$$\begin{aligned} \text{Desired Emotion}_{ijk} = & \pi_{0,jk} + \pi_{4,jk} \times (\text{Religiosity}_{ijk}) + \pi_{2,jk} \\ & \times (\text{Experienced Emotion}_{ijk}) \\ & + \pi_{2,jk} \times (\text{Age}_{ijk}) + \pi_{3,jk} \times (\text{Gender}_{ijk}) + e_{ijk}, \end{aligned}$$

where  $\pi_{0,jk}$  is the mean level of the desired emotion across cells, the  $\pi_{ijk}$  are the average regression coefficients of the predictor variables across cells, and  $e_{ijk}$  is the Level 1 residual variance, which is the individual level variance in the desired emotion that the predictor variables do not explain.

## Results

Table 1 presents the means and standard deviations of religiosity, desired emotions, and experienced emotions, and the zero-order correlations among these variables across all participants in the entire sample.<sup>3</sup> Table 2 presents the results of the HLM analyses which tested whether religiosity predicted each desired emotion controlling for emotion experience, age and gender. The first row presents the overall mean for each emotion across samples. The second row provides the test of the hypotheses. In support of the belief maintenance account, religiosity predicted more desire for awe (95% confidence interval [CI] [0.008, 0.056]) and gratitude (95% CI [0.023, 0.064]) and less desire for pride (95% CI [-0.134, -0.056]). Results were inconsistent with the prosocial facilitation account, such that religiosity did not predict more desire for socially engaging emotions (95% CI [-0.004, 0.018]) or socially disengaging emotions (95% CI [-0.022, 0.001]).<sup>4</sup> The third row indicates that, across all emotions, desired emotions were positively associated with experienced emotions. The fourth row indicates that age did not predict desired emotions. The fifth row indicates that gender affected the desirability of socially engaging emotions and socially disengaging emotions, such that women desire socially engaging emotion more than men, whereas men desire socially disengaging emotions more than women.

Table 2 also presents the random effects for the Level 2 variables of sample (rows 6–10) and religion (rows 11–15). The seventh row reveals that the associations between religiosity and awe and religiosity and gratitude did not vary by sample, but the association between religiosity and

**Table 1.** Descriptive Statistics and Pairwise Correlations Among Study Variables (Study 1).

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1. Religiosity	2.84	2.40	—									
Desired emotions												
2. Awe	2.58	1.16	.04	—								
3. Gratitude	3.97	0.93	.21**	.13**	—							
4. Pride	3.28	1.19	-.24**	.00	-.01	—						
5. Socially engaging	4.07	0.49	.16**	.21**	.42**	.10**	—					
6. Socially disengaging	1.91	0.51	-.08**	.16**	-.12**	-.03	-.37**	—				
Experienced emotions												
7. Awe	2.64	0.89	.12**	.36**	.16**	-.04	.10**	.10**	—			
8. Gratitude	3.54	0.87	.23**	.10**	.42**	-.11**	.27**	-.05*	.20**	—		
9. Pride	2.85	0.91	-.08**	.04*	.03	.46**	.04*	.06**	.09**	.02	—	
10. Socially engaging	3.49	0.51	.20**	.22**	.28**	-.08**	.53**	-.11**	.11**	.45**	.06**	—
11. Socially disengaging	2.22	0.52	-.06**	.07**	-.05*	.15**	-.07**	.26**	.18**	-.16**	.16**	-.35**

\* $p < .05$ . \*\* $p < .01$ .

pride, religiosity and socially engaging emotions, and religiosity and socially disengaging emotions did vary by sample. The significant variation between samples for religiosity and desired pride is noteworthy because it qualifies the main effect. An examination of the raw correlations of the association between religiosity and desired pride revealed significant negative correlations in some samples (Brazil:  $r = -.24$ ; Ghana:  $r = -.27$ ; Israel:  $r = -.24$ ; Singapore:  $r = -.31$ ), nonsignificant negative correlations in other samples (China:  $r = -.06$ ; Germany:  $r = -.14$ ; Poland:  $r = -.04$ ), and a nonsignificant positive correlation in the United States ( $r = .01$ ). The 12th row reveals that the association between religiosity and desired emotions did not vary by religion. This shows that the findings were not moderated by religion.

## Discussion

The findings of Study 1 revealed that religiosity is associated with a greater desire for awe and gratitude and less desire for pride, but not with a greater desire for socially engaging emotions and a lesser desire for socially disengaging emotions. This supports the belief maintenance account but not the prosocial facilitation account. These findings were not moderated by differences in religion.

Study 1 had two important limitations. First, religiosity was assessed via a single-item measure. Second, the distribution of religiosity was not taken into account when selecting participants for each of the samples. Thus, the null findings regarding socially disengaging and socially engaging emotions may have resulted from a restricted range of religiosity. Study 2 sought to overcome these limitations.

## Study 2

In Study 2, we selected participants from three different countries representing three different monotheistic religions:

Catholics in the United States, Jews in Israel, and Muslims in Turkey. We chose to study Catholics in the United States because of their unified theology compared with the myriad Protestant denominations. Many Catholics in the United States belong to the Hispanic minority. To avoid the possibility that differences are due to ethnicity, we prescreened to exclude Hispanic participants. Finally, we controlled for socioeconomic status and political ideology in addition to controlling for age and gender as in Study 1. In light of the findings from Study 1, we hypothesized that religiosity is associated with a stronger desire for awe and gratitude and with a weaker desire for pride. We preregistered these hypotheses (see <https://aspredicted.org/g4qf6.pdf>), but did not preregister hypotheses regarding socially engaging and socially disengaging emotions because we initially focused only on the belief maintenance account and included items pertaining to social engagement on an exploratory basis.<sup>5</sup>

## Method

**Participants.** In each sample, we prescreened for affiliation with the target religion. In the Turkish and American samples, participants were prescreened based on their family's religious background. In addition, to rule out the possibility that the findings reflect associations with a limited range of religiosity, participants were selected to represent a broad spectrum of religiosity. In the Turkish and American samples, they were prescreened based on a 5-point scale of religiosity ("How important is religion in your life?"), from 1 (*I am not religious*) to 5 (*Center of my entire life*). In line with the preregistration, we obtained 20% of responses from each of the 5 scale points.<sup>6</sup> In the Israeli sample, participants were prescreened based on a 4-point proxy of Jewish religious affiliation (Halperin et al., 2008): *Secular* (30%), *Traditional* (30%), *Orthodox* (20%), and *Ultra-orthodox* (20%).

**Table 2.** Multilevel Models Explaining Desired Emotions by Religiosity, Controlling for Emotional Experience, Age, and Gender (Study 1).

Variable	Awe		Gratitude		Pride		Socially engaging		Socially disengaging	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
<b>Fixed effects</b>										
Overall emotion mean	2.90***	0.3	3.97***	0.15	3.07***	0.18	4.17***	0.11	1.63***	0.07
Religiosity slope	0.03**	0.01	0.04***	0.01	-0.09***	0.02	0.007	0.006	-0.01 <sup>†</sup>	0.006
Experienced emotion slope	0.37***	0.07	0.36***	0.05	0.47***	0.03	0.45***	0.02	0.27***	0.03
Age slope	-0.002	0.01	-0.01	0.01	-0.0004	0.01	-0.002	0.003	0.007 <sup>†</sup>	0.004
Gender slope	0.01	0.05	0.06	0.04	0.03	0.05	0.10***	0.02	-0.14***	0.03
<b>Random effect: sample</b>										
	Variance	$\chi^2$	Variance	$\chi^2$	Variance	$\chi^2$	Variance	$\chi^2$	Variance	$\chi^2$
Culture sample mean	0.62	1243***	0.18	199***	0.23	179***	0.10	463***	0.04	122***
Religiosity slope	0.0004	9.25	0.0002	6.10	0.002	19.27**	0.0001	15.69*	0.0001	14.60*
Experienced emotion slope	0.02	73.30***	0.005	15.48	0.002	10.42	0.0004	5.32	0.004	19.92**
Age slope	0.0002	7.17	0.0002	10.20	0.0002	4.86	0	10.85	0	8.09
Gender slope	0.008	7.97	0.002	8.49	0.007	6.64	0.0005	5.18	0.0002	3.41
<b>Random effect: Religion</b>										
	Variance	$\chi^2$	Variance	$\chi^2$	Variance	$\chi^2$	Variance	$\chi^2$	Variance	$\chi^2$
Religion sample mean	0.01	22.71**	0.004	11.17	0.02	26.92***	0.0003	6.59	0	11.59
Religiosity slope	0.0001	5.79	0.0001	4.58	0.0002	4.83	0	7.94	0	12.48
Experienced emotion slope	0.01	23.28**	0.008	22.33**	0.0001	4.43	0.0004	8.57	0	6.97
Age slope	0	9.43	0	7.16	0	9.02	0	8.16	0	7.20
Gender slope	0.005	8.91	0.003	7.18	0	4.30	0.0004	4.60	0.002 <sup>†</sup>	15.21
% variance explained	15		15		18		26		12	

Note. The table presents random effects for two Level 2 variables. The models are cross-classified, meaning that they have two non-nested Level 2 variables: sample and religion.

<sup>†</sup> $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

We preregistered a target sample size of 200 participants per sample, with the caveat that we would oversample by 10% and exercise quality control based on short completion times and failing two instructional attention checks (instructional manipulation checks [IMCs]; Oppenheimer et al., 2009). The panel that ran the Turkish sample automatically removed participants who completed the survey in less than 7 min and 38 s,<sup>7</sup> so we set this as the benchmark for all the samples. The final samples were: United States,  $N = 210$  (58.6% female,  $M_{\text{age}} = 40.6$ ); Israel,  $N = 203$  (52.7% female,  $M_{\text{age}} = 41.6$ ); and Turkey,  $N = 203$  participants (36.5% female,  $M_{\text{age}} = 34.4$ ).

**Procedure.** The surveys were completed online. The Turkish sample was recruited through the Qualtrics Panels service (<https://www.qualtrics.com/online-sample>). The American sample was recruited through Amazon's Mechanical Turk via TurkPrime (<http://www.mturk.com>). The Israeli sample was recruited through an Israeli online survey company (<http://www.panel4all.co.il/panel>).

After giving consent, participants first rated their desired emotions and then rated their experienced emotions. Participants also completed several measures that were unrelated to the present research question.<sup>8</sup> Religiosity was assessed at the end of the survey, followed by a demographic questionnaire.

## Materials

For the Israeli and Turkish samples, we relied on existing translations where possible. Measures without existing translations were translated and back-translated.

**Religiosity.** Based on the recommendation of a literature review on assessing religiosity (Hill & Edwards, 2013), we assessed religiosity via the Religious Commitment Inventory (RCI; e.g., "My religious beliefs lie behind my whole approach to life"; Worthington et al., 2003). Items were answered on a scale of 1 (*not at all true of me*) to 5 (*totally true of me*),  $\alpha = .97$ . The average religiosity of the American sample ( $M = 2.11$ ,  $SD = 1.20$ ) was lower than that of the Turkish sample ( $M = 2.43$ ,  $SD = 1.22$ ) and the Israeli sample ( $M = 2.47$ ,  $SD = 1.30$ ),  $F(2, 613) = 5.04$ ,  $p = .007$ . A factor analysis on the entire sample revealed a single dimension that explained 76.8% of the variance in the whole sample, contrary to the two-dimensional structure that Worthington et al. (2003) obtained. The structure was consistent across samples. The intrapersonal and interpersonal subscales of the RCI were highly correlated in each sample (United States:  $r = .85$ ; Israel:  $r = .91$ ; Turkey:  $r = .88$ ).

**Desired emotions.** Participants rated how often they want to experience particular emotions in their daily life on a 5-point

scale from *never* (coded as 1) to *most of the time* (coded as 5). The order of the emotion terms was randomized. Emotion terms included pride, gratitude, awe, admiration, and amazement. In addition, they included items for socially engaging emotions (guilt, shame, love, affection, trust, empathy, and compassion;  $\alpha = .71$ ) and socially disengaging emotions (anger, contempt, hostility, jealousy, and hatred;  $\alpha = .83$ ), as measured by Tamir et al. (2016).<sup>9</sup> Given that admiration and amazement have been considered by some as closely linked to awe (Keltner & Haidt, 2003; Shiota et al., 2007), we included them in the survey as potentially other-praising emotions. However, due to low internal consistency of the three items in Israel and Turkey ( $\alpha$ s = .62 and .44, respectively), relative to the United States ( $\alpha = .84$ ), we focused exclusively on awe. For the sake of transparency, we also report results with the three-item composite, as listed in the preregistration.

**Experienced emotions.** Participants rated how often they typically experience particular emotions in their daily lives, using the same scale and items described above for desired emotions (socially engaging emotions:  $\alpha = .73$ ; socially disengaging emotions:  $\alpha = .78$ ). The order of the emotion terms was randomized.

## Analyses

Given that both the belief maintenance account and prosocial facilitation account refer to characteristics common across religions, we expected that the associations would hold across samples. Therefore, we used effect coding to code the three samples, because effect coding provides coefficients of the average effects across groups (J. Cohen & Cohen, 1983).<sup>10</sup> We predicted each desired emotion by sample and religiosity, while controlling for the corresponding experienced emotion. In addition, because the samples differed in their distribution of age,  $F(2, 613) = 22.23, p < .001$ , gender,  $F(2, 613) = 11.12, p < .001$ , and socioeconomic status,  $F(2, 613) = 20.00, p < .001$ , we included these as covariates. Furthermore, because religiosity is often correlated with conservative political ideology (Jost et al., 2014), as was the case in the present study (United States:  $r = .45, p < .001$ ; Israel:  $r = .37, p < .001$ ; Turkey:  $r = .46, p < .001$ ), we controlled for political ideology. Finally, we added the interactions of all the predictors with the two effect-coded variables of samples. All non-categorical predictors were standardized within samples.

## Results

Table 3 presents the means and standard deviations of religiosity, desired emotions, and experienced emotions, and the zero-order correlations among these variables across all participants in the entire sample.<sup>11</sup> Table 4 presents the results of the regressions on desired emotions. Consistent with the

belief maintenance account, religiosity predicted the desire to experience awe (95% CI [0.024, 0.176]), gratitude (95% CI [0.068, 0.215]), and pride (95% CI [-0.274, -0.132]). When examining the three-item awe composite, the association with religiosity was only marginally significant,  $\beta = .07, SE = .04, t = 1.73, p = .085$ . Results were inconsistent with the prosocial facilitation account, such that religiosity did not predict more desire for socially engaging emotions (95% CI [-0.027, 0.126]) or socially disengaging emotions (95% CI [-0.083, 0.068]).<sup>12</sup> In all regressions, experienced emotion predicted desired emotion. Age, gender, and sample predicted desired emotions in some, but not all, regressions. Socioeconomic status and political ideology did not predict desired emotions.

Religiosity did not interact with sample, except for pride. Although the association between religiosity and desire for pride was negative in every sample, it was stronger in the Israeli sample,  $\beta = -.39, t = -6.49, p < .001$ , than in the Turkish sample  $\beta = -.09, t = -1.38, p = .17$ , or the American sample,  $\beta = -.09, t = -1.37, p = .17$ .

## Discussion

As in Study 1, the findings of Study 2 revealed that religiosity is associated with a stronger desire for awe and gratitude and a weaker desire for pride. Religiosity was not significantly associated with desire for socially engaging and socially disengaging emotions. These findings support the belief maintenance account but not the prosocial facilitation account. The findings were not qualified by sample, with the exception of pride. The present design confounds country characteristics with participants' religion. Thus, we cannot know whether this variance is due to differences between countries or to differences between religions. However, in line with the findings from Study 1, where sample and religion were crossed, we infer that the interaction between religiosity and sample on pride is probably due to country characteristics.

## Study 3

Studies 1 and 2 found that people who are more religious desire emotions in a manner consistent with the belief maintenance but not the prosocial facilitation account. However, these studies did not examine the mechanisms that could account for why people who are more religious desire these emotions. The belief maintenance account suggests that people who are more religious desire more awe and gratitude and less pride because they expect these emotions to strengthen the recognition of, and connection to, higher beings. The prosocial facilitation account suggests that people who are more religious desire more socially engaging emotions and less socially disengaging emotions because they expect these emotions to facilitate connections to other people. Study 3 investigated whether these two proposed mechanisms mediated the associations between



**Table 3.** Descriptive Statistics and Pairwise Correlations Among Study Variables (Study 2).

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1. Religiosity	2.33	1.25	—									
Desired emotions												
2. Awe	3.52	1.09	.17**	—								
3. Gratitude	4.11	0.95	.27**	.38**	—							
4. Pride	3.69	1.14	-.24**	.09*	.13**	—						
5. Socially engaging	4.30	0.53	0.07	.42**	.51**	.22**	—					
6. Socially disengaging	1.51	0.64	0.01	-.22**	-.26**	-.06	-.60**	—				
Experienced emotions												
7. Awe	2.94	0.96	.27**	.53**	.31**	0.01	.21**	-0.06	—			
8. Gratitude	3.61	0.93	.33**	.20**	.57**	0.07	.28**	-0.07	.39**	—		
9. Pride	3.17	0.96	-0.03	0.04	.20**	.56**	.12**	.11**	.16**	.30**	—	
10. Socially engaging	3.68	0.57	.16**	.25**	.37**	.14**	.47**	-.17**	.39**	.55**	.35**	—
11. Socially disengaging	2.18	0.63	-0.05	0.01	-.11**	.08*	-.16**	.40**	-0.08	-.27**	-0.04	-.46**

\* $p < .05$ . \*\* $p < .01$ .

religiosity and desired emotions. Specifically, does the motivation to be close to god (supporting the belief maintenance account) or the motivation to be close to others (supporting the prosocial facilitation account) mediate the association between religiosity and desired emotions?

## Method

**Participants.** Given that the central findings in Studies 1 and 2 supported the belief maintenance account, we conducted a power analysis based on whether religious motivations may mediate the association between religiosity and desire for emotions that facilitate belief maintenance. We used the power analysis calculator reported in Schoemann et al. (2017) to arrive at a required sample size of 304 to reach 80% power. Participants were Jews from Israel recruited through an Israeli online survey company (<http://www.panel4all.co.il/panel>) and were prescreened based on a 4-point proxy of Jewish religious affiliation as in Study 2. In total, 316 participants completed the survey. Participants were filtered for not passing the following preregistered criteria (see <https://aspredicted.org/se6nu.pdf>): completing the survey in less than one third of the median time, displaying zero variance in their ratings of 19 desired emotions, and failing a rigorous attention check that requires identifying three questions that they answered in the survey out of a list of 7. After implementing these filters, the final sample size comprised 272 participants (50.7% female,  $M_{age} = 41.3$ ).

**Procedure.** The survey was completed online. Participants first rated how often they want to experience 19 discrete emotions, presented in a randomized order. Next, they reported their religious and prosocial motivations in a counterbalanced order. Finally, they reported their religiosity.

## Materials

**Desired emotions.** We sought to assess the entire range of emotions that promote belief maintenance and prosocial

facilitation. To do so, we assessed all the emotions that promote belief maintenance, including awe, gratitude, and pride (reverse-scored), and all the emotions that promote prosocial engagement, including the eight socially engaging emotions and the eight socially disengaging emotions (reverse-scored) from Study 1 ( $\alpha = .84$ ). Desire for pride was not correlated with gratitude ( $r = .07$ ,  $p = .26$ ) and positively correlated with awe ( $r = .16$ ,  $p = .008$ ). Because we were interested in their functionality in maintaining religious belief, we followed our preregistered plan and averaged across these emotions.

**Motivations.** We assessed prosocial motivations via a five-item scale we developed (see Supplemental Materials). Participants were asked to indicate the extent to which they want to be close to other people (e.g., To what extent do you want to be close to other people; To what extent do you want to communicate with other people;  $\alpha = .82$ ) on a scale from 1 (*not at all*) to 7 (*to a great extent*). Motivation to be close to god was assessed via the same scale, except replacing “other people” with “god” ( $\alpha = .94$ ).

**Religiosity.** We assessed religiosity using the same scale as in Study 2 ( $\alpha = .96$ ).

## Analyses

Study 3 tested whether social and religious motivations mediate the association between religiosity and desired emotions. To assess this question, we specified a just-identified structural equation model with 0 degrees of freedom using the lavaan statistical package in R (Rosseel, 2012). In this model, religiosity was treated as a predictor variable, motivation to be close to others and motivation to be close to God as the mediating variables, and desire for emotions that promote prosocial engagement and desire for emotions that promote belief maintenance as the outcome variables (see Figure 1A). Next, we established specificity by removing insignificant paths. We used 5,000 bootstrapped samples to calculate

**Table 4.** Regression Coefficients in Predicting Desired Emotions (Study 2).

Variable	Awe		Gratitude		Pride		Socially engaging		Socially disengaging	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Religiosity	0.10*	0.04	0.14***	0.04	-0.20***	0.04	0.05	0.04	-0.01	0.04
Emotion experience	0.48***	0.04	0.47***	0.04	0.51***	0.03	0.47***	0.04	0.37***	0.04
Age	0.02	0.03	0.07*	0.03	-0.04	0.03	-0.03	0.04	-0.02	0.04
Gender	0.09	0.07	0.13*	0.07	0.08	0.07	0.14†	0.07	-0.17*	0.07
Socioeconomic	-0.05	0.03	0.03	0.03	0.06†	0.03	-0.02	0.04	0.03	0.04
Political ideology	-0.07†	0.04	-0.05	0.04	0.00	0.04	-0.04	0.04	-0.01	0.04
Israel (effect coded)	0.01	0.16	0.02	0.15	-0.47**	0.15	-0.14	0.16	-0.01	0.16
Turkey (effect coded)	0.00	0.15	0.01	0.14	0.03	0.14	-0.29†	0.15	0.45**	0.15
Religiosity × Israel	0.02	0.05	0.00	0.05	-0.24***	0.05	0.11†	0.05	-0.05	0.05
Religiosity × Turkey	-0.04	0.06	-0.03	0.05	0.12*	0.05	-0.07	0.06	0.05	0.06
Experience × Israel	-0.04	0.05	-0.19***	0.05	-0.02	0.05	-0.10†	0.05	-0.06	0.05
Experience × Turkey	0.25***	0.05	0.37***	0.05	0.04	0.05	0.14**	0.05	0.25***	0.05
Age × Israel	0.04	0.05	0.01	0.05	0.02	0.05	-0.01	0.05	0.07	0.05
Age × Turkey	0.04	0.05	-0.01	0.05	-0.02	0.05	0.01	0.05	-0.05	0.05
Gender × Israel	0.13	0.10	0.11	0.09	0.21*	0.09	0.15	0.10	-0.10	0.10
Gender × Turkey	-0.20*	0.10	-0.20*	0.09	0.01	0.09	-0.04	0.10	0.01	0.10
Socioeconomic × Israel	0.03	0.05	-0.01	0.05	-0.03	0.05	0.00	0.05	-0.02	0.05
Socioeconomic × Turkey	0.02	0.05	-0.04	0.05	0.01	0.05	-0.04	0.05	0.00	0.05
Ideology × Israel	-0.04	0.05	0.01	0.05	-0.01	0.05	-0.04	0.05	-0.06	0.05
Ideology × Turkey	0.03	0.05	0.03	0.05	-0.01	0.05	0.02	0.05	0.08	0.05
% variance explained	33		40		39		30		30	

†*p* < .10. \**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

standard errors. To evaluate overall model fit, we used the  $\chi^2$  test of exact model fit ( $\chi^2$ ), the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). Satisfactory global model fit is indicated by the following values:  $p(\chi^2)$  = insignificant, CFI > .95; RMSEA < .06; and SRMR < .08 (Hu & Bentler, 1999). To compare the relative goodness of fit of nested models, we used the  $\chi^2$  difference test.

**Results**

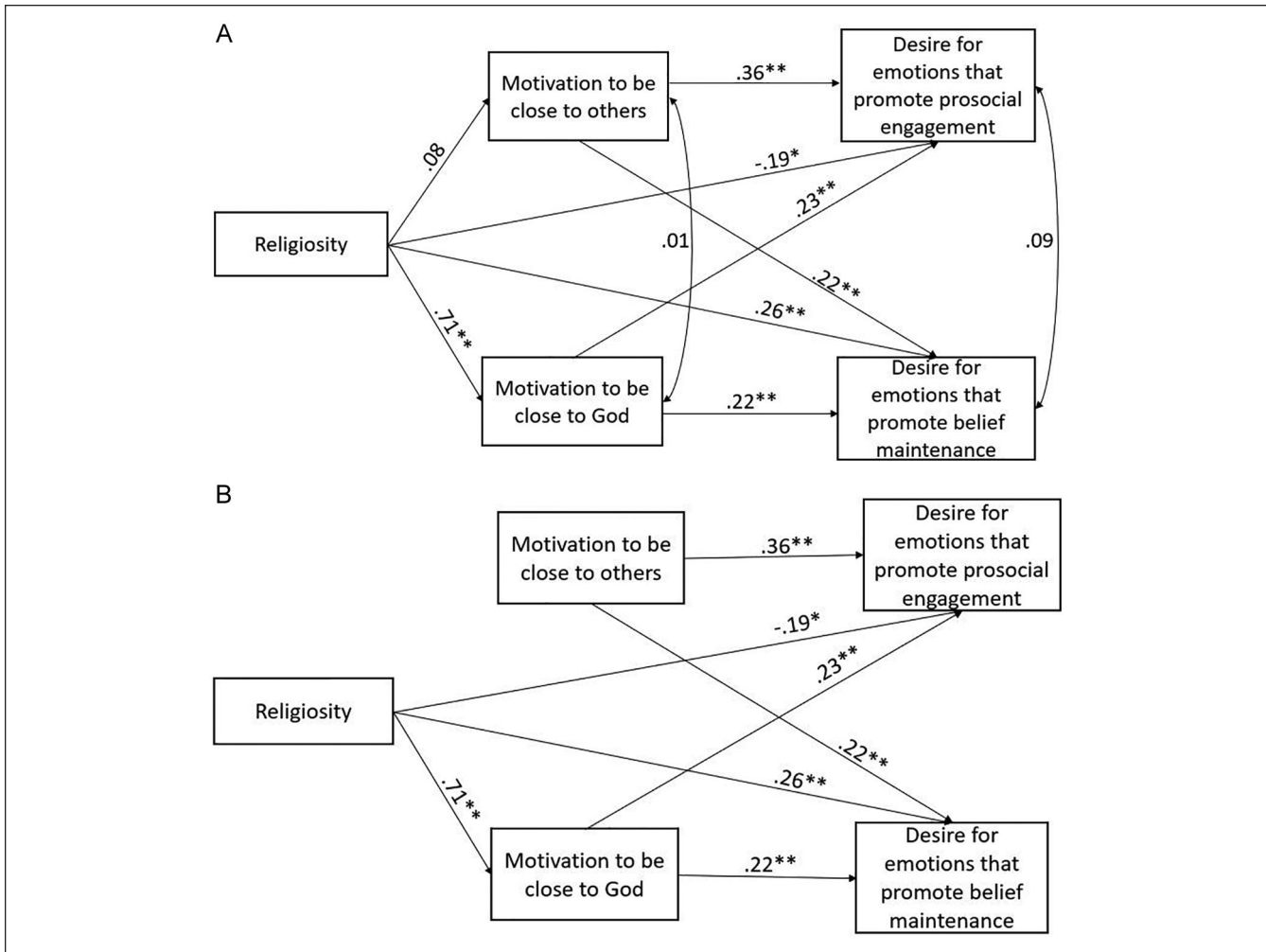
Table 5 presents the means and standard deviations of religiosity, motivation to be close to others and to god, the two types of desired emotions, and the zero-order correlations among these variables. Replicating findings from Studies 1 and 2, religiosity was associated with a stronger desire for emotions that promote belief maintenance, but not with emotions that promote prosocial engagement.

In the just-identified model with 0 degrees of freedom, three paths were insignificant: the path from religiosity to prosocial motivations ( $\beta = .084, p = .14$ ), the covariance between the two types of motivations ( $\beta = .008, p = .90$ ), and the covariance between belief-maintaining emotions and prosocial emotions ( $\beta = .094, p = .14$ ). The goodness of fit was not substantially worse when removing the path from religiosity to prosocial motivations,  $\Delta\chi^2(1) = 0.02, p = .89$ , or when removing all three paths,  $\Delta\chi^2(3) = 4.36, p = .23$ . Removing the next weakest path, between religiosity and prosocial emotions, resulted in significantly worse fit,  $\Delta\chi^2(1)$

= 5.57,  $p = .018$ . Consequently, we arrived at the model with best fit, in which three insignificant paths were removed (Figure 1B). The global fit statistics indicated adequate fit:  $\chi^2(3) = 4.36, p = .23$ , CFI = .996, RMSEA = .041, SRMR = .039. In this model, a direct effect still exists between religiosity and desire for emotions that promote belief maintenance,  $\beta = .26, p = .001$  (see Table 6 for path coefficient weights, standard errors, and confidence intervals), but part of that association is also mediated by the motivation to be close to god,  $\beta = .15, p = .002$ , 95% CI [.058, .251]. Interestingly, the direct effect between religiosity and desire for emotions that promote prosocial engagement is negative (just-identified model:  $\beta = -.19, p = .016$ , 95% CI [-.342, -.032]; model with best fit:  $\beta = -.19, p = .018$ , 95% CI [-.343, -.032]), whereas the indirect effect from religiosity to these emotions via motivation to be close to god is positive (just-identified model:  $\beta = .16, p = .006$ , 95% CI [.047, .276]; model with best fit:  $\beta = .16, p = .006$ , 95% CI [.046, .277]). The net effect, or sum of direct and indirect effects, between religiosity and these emotions is insignificant (just-identified model:  $\beta = .004, p = .95$ , 95% CI [-.111, .118]; model with best fit:  $\beta = -.03, p = .62$ , 95% CI [-.134, .081]), demonstrating that the negative association with religiosity is the result of a suppression situation (Tzelgov & Henik, 1991).

**Discussion**

The purpose of Study 3 was to replicate the findings from Studies 1 and 2 and examine belief maintenance and



**Figure 1.** The just-identified model with zero degrees of freedom (Figure 1A); the model with best fit (Figure 1B), Study 3. \**p* < .05. \*\**p* < .01.

**Table 5.** Descriptive Statistics and Pairwise Correlations Among Study Variables (Study 3).

Variable	<i>M</i>	<i>SD</i>	1	2	3	4
1. Religiosity	2.76	1.24	—			
2. Motivation to be close to god	5.39	1.88	.71**	—		
3. Motivation to be close to others	6.07	0.84	.08	.07	—	
4. Desire for belief-maintaining emotions	3.50	0.61	.43**	.41**	.25**	—
5. Desire for prosocial emotions	4.40	0.42	.00	.12	.36**	.18**

\**p* < .05. \*\**p* < .01.

prosocial facilitation as potential mediators. As in Studies 1 and 2, religiosity was associated with a greater desire for emotions that promote belief maintenance (i.e., closeness to god). As predicted, the proposed mediator of belief maintenance—namely, the motivation to be close to god—partially mediated the association between religiosity, a stronger desire for awe and gratitude, and weaker desire for pride. In contrast, religiosity was not significantly associated with the

proposed mediator of prosocial facilitation. In fact, when mapping the entire set of associations between religiosity, motivations, and desired emotions, the direct association between religiosity and desire for emotions that promote prosocial engagement was negative. One possible criticism is that the measures of religiosity and motivation to be close to god tapped the same theoretical construct. However, given that they predicted desire for emotions that facilitate

**Table 6.** Standardized Path Coefficients, Bootstrapped Standard Errors, and 95% Confidence Intervals (Study 3).

Paths	Just-identified model			Model with best fit		
	$\beta$	SE	95% CI	$\beta$	SE	95% CI
<b>Path loadings</b>						
Religiosity → Motivation god	0.71	0.02	[.664, .754]	0.71	0.02	[.663, .755]
Religiosity → Motivation others	0.05	0.04	[-.025, .133]	—	—	—
Religiosity → Belief maintenance emotions	0.26	0.08	[.110, .408]	0.26	0.08	[.104, .418]
Religiosity → Prosocial emotions	-0.19	0.08	[-.342, -.032]	-0.19	0.08	[-.343, -.032]
Motivation god → Belief maintenance emotions	0.22	0.07	[.081, .351]	0.22	0.07	[.080, .355]
Motivation god → Prosocial emotions	0.23	0.08	[.065, .390]	0.23	0.08	[.064, .391]
Motivation others → Belief maintenance emotions	0.22	0.05	[.123, .312]	0.22	0.05	[.122, .316]
Motivation others → Prosocial emotions	0.36	0.06	[.236, .483]	0.36	0.06	[.234, .484]
Motivation god ↔ Motivation others	0.01	0.07	[-.124, .141]	—	—	—
Belief maintenance emotions ↔ Prosocial emotions	0.09	0.06	[-.026, .214]	—	—	—
<b>Indirect effects</b>						
Religiosity → Motivation god → Belief maintenance emotions	0.15	0.05	[.056, .251]	0.15	0.05	[.058, .251]
Religiosity → Motivation god → Prosocial emotions	0.16	0.06	[.047, .276]	0.16	0.06	[.046, .277]
Religiosity → Motivation others → Belief maintenance emotions	0.02	0.01	[-.007, .044]	—	—	—
Religiosity → Motivation others → Prosocial emotions	0.02	0.02	[-.010, .048]	—	—	—
<b>Total effects</b>						
Religiosity → Belief maintenance emotions	0.43	0.05	[.337, .524]	0.42	0.05	[.321, .510]
Religiosity → Prosocial emotions	0.004	0.06	[-.111, .118]	-0.03	0.06	[-.134, .081]

Note. CI = confidence interval.

prosocial engagement in opposite directions, they are unlikely to tap the same underlying construct. Overall, these findings support the belief maintenance account, but not the prosocial facilitation account.

The significant negative association between religiosity and emotions that promote prosocial engagement was unexpected. This apparently resulted from a suppression effect, after controlling for the motivation to be close to god. This finding suggests that within the multidimensional construct of religiosity, it may be the desire to connect to god that promotes prosocial engagement. This is consistent with the notion that supernatural beings may serve as moralizing agents that ensure that people behave cooperatively, such as by not cheating or freeloading (Norenzayan & Shariff, 2008).

## General Discussion

The present investigation examined how religiosity is associated with desired emotions. According to the belief maintenance account, religiosity is associated with desiring emotions that promote recognition of supernatural beings, positively for other-praising emotions and negatively for self-praising emotions. According to the prosocial facilitation account, religiosity is associated with desiring emotions that promote positive interpersonal functioning, positively for socially engaging emotions and negatively for socially disengaging emotions. In two cross-cultural studies, results supported the belief maintenance account, such that religiosity was associated with a stronger desire for the other-praising emotions of awe and gratitude, a weaker desire for the self-praising emotion of pride, and no significant association

with a desire for socially engaging or socially disengaging emotions. These associations held when controlling for emotion experience. They were robust across countries and were not moderated by religion, with the possible exception of pride in Study 2. An additional study supported the role of belief maintenance, but not prosocial facilitation, as the underlying mechanism of these associations. Overall, the findings show that people who are more religious value emotions that are consistent with foundational religious beliefs.

## Implications for Understanding Religion and Emotion Regulation

Previous research suggests that religion can influence emotional experience (e.g., Emmons, 2005; Kim-Prieto & Diener, 2009). Yet little empirical attention has been devoted to the mechanisms by which religion influences emotional experience. One such mechanism may involve emotion regulation (for a review, see Vishkin et al., 2014). Religion may influence emotion regulation, in part, by facilitating the use of certain emotion regulation strategies. For instance, there is evidence that religiosity may be linked to the more frequent use of cognitive reappraisal (Vishkin et al., 2016).

The present study identifies an additional mechanism by which religiosity may affect emotions—namely, by establishing desired end-states in emotion regulation (see Tamir, 2016). By directing efforts in emotion regulation, desired end-states in emotion regulation can influence experienced emotions. Some have suggested that pleasant emotional experiences in religion are the by-product of pursuing personally meaningful goals (Emmons, 2005). We argue and show that

religiosity is linked not only to what people feel, but also to what they want to feel—and what they want to feel are emotions that affirm religious beliefs, including more other-praising emotions and less self-praising emotions.

A wide scope of religious behaviors and practices become de-mystified when understood in terms of the extent to which they orient people toward or away from emotions that foster religious beliefs. Contemplation may foster awe (Merton, 2007), daily prayers may foster gratitude (Vishkin et al., 2014), and placing less emphasis on one's personal accomplishments may diminish pride. Thus, the desirability of awe, gratitude, and pride in religion may influence the entire fabric of religious living. Future work should examine the particular mechanisms by which religions shape and sustain desired emotions.

### *Implications for Understanding Religion*

Some argue that the central tenet of religion is belief in supernatural beings (e.g., Tylor, 1871). Others argue that the central tenet of religion is to tie people together in a social community and strengthen social ties (Graham & Haidt, 2010; Norenzayan & Shariff, 2008). Given that emotions can help strengthen beliefs as well as social ties, we tested whether people who are more religious desire emotions that strengthen the belief in a supernatural being or emotions that strengthen social ties. We found that when it comes to desiring emotions, more religious people show a stronger desire for emotions that strengthen beliefs in supernatural beings but not those that strengthen social ties. We do not rule out the possibility that at least some aspects of religiosity may also be linked to desire for socially engaging emotions, as the results of Study 3 suggest. Future research should continue to explore this possibility.

### *Implications for Understanding the Interplay Between Religion and Culture*

In Study 1, the association between religiosity and desire for pride was weaker in some samples (i.e., the United States, China, Germany, and Poland) than in others (i.e., Brazil, Ghana, Israel, and Singapore). In Study 2, the association between religiosity and desire for pride was weaker in the United States and Turkey, relative to Israel. The variation in Study 1 was due specifically to country and not to religion, whereas in Study 2, country and religion were confounded and could not be teased apart. This finding suggests that the link between religiosity and desired emotions may be moderated by country-level norms. One possibility is that strong norms about pride may override the influence of religiosity on pride, irrespective of whether the norm is positive or negative. For example, the association between religiosity and the desire for pride was weaker in the United States (Studies 1 and 2) and Turkey (Study 2) than in other countries. The positive norm regarding pride in the United States (Mesquita

& Albert, 2007), as well as the norm of honor in Turkey (Ozgur & Sunar, 1982), may shape the desire for pride in these countries to such an extent that religiosity will not influence them. Consistent with this interpretation, in Study 2, pride was desired more in the United States and Turkey than in Israel.<sup>13</sup> Likewise, a strong negative norm regarding certain types of pride in China (Eid & Diener, 2001) may have overridden the potential effect of religiosity on pride. These possibilities, however, await further testing. Indeed, the numerous possible pairwise comparisons make it difficult to draw strong conclusions, so these differences should be interpreted with caution.

Studies 1 and 2 were consistent in showing that the effect of individuals' particular religion was limited. The associations between religiosity, awe, gratitude, socially engaging emotions, and socially disengaging emotions in both studies, and pride in Study 1, held across religions. This suggests that there may be some common ground in the desirability of certain emotions in different monotheistic religions. In the long-standing debate about whether religions have more in common (Armstrong, 1994) than differentiates them (Prothero, 2010), the present findings favor the former view. However, both the range of religions and the range of emotions that we sampled were limited. Future research could examine whether idiosyncratic features of particular religions foster different desired emotions.

### *Limitations and Future Directions*

Participants in all studies belonged predominantly (Study 1) or exclusively (Studies 2 and 3) to monotheistic faiths. We expect that the pursuit of desired emotions that promote the recognition of supernatural beings depends on the existence of supernatural beings within a belief system. However, the associations between religiosity and desired emotions that promote religious belief might be stronger the fewer and more powerful the gods (Big Gods; Norenzayan, 2013). If so, the associations might be stronger in religions that endorse the belief in a single god. It remains to be tested whether these associations replicate in faiths whose formal theology is not monotheistic.

In addition, the proposed mechanism of belief maintenance was assessed via motivation to be close to god. This allowed us to directly compare the two motivational accounts—the desire to be close to god and the desire to be close to others. Nonetheless, while motivation to be close to god is a critical component of religious belief, it is not the only component related to belief maintenance. Moreover, the proposed mechanisms of belief maintenance and prosocial facilitation were tested in Study 3 among adherents of a single religion. Given that the same emotion can have different social implications in cultures higher (vs. lower) in interdependence (Uchida & Kitayama, 2009), the same emotions may also have different social and religious implications among adherents of different religions. Therefore, future

research should examine whether belief maintenance also accounts for the association between religiosity and desired emotions among adherents of other religions.

In addition, the desire for specific emotions may vary widely across contexts. The desire for specific emotions should be greater in contexts where those emotions facilitate participation in religious events and ceremonies. For instance, guilt may be more desirable before the Catholic ritual of confession or during the Jewish day of atonement (*Yom Kippur*). Happiness may be more desirable during religious feasts and holidays. It remains to be tested whether the link between religiosity and desired emotions is moderated by context.

Religion can be considered as both an individual difference and a cultural variable (e.g., Gebauer et al., 2012). Accordingly, there may be two different, but not mutually exclusive, mechanisms by which people who are more religious come to desire emotions that align with religious beliefs. At the individual difference level, religious people want to believe in a supernatural being and, in so doing, they may seek emotions that are instrumental to that belief. At the cultural level, religious cultural institutions provide implicit or explicit instruction that their members should value awe and gratitude and not necessarily pride, to leverage these emotions to promote religious beliefs. Future research should examine the manner in which desired emotions in religion are instilled.

## Conclusion

Do religious people desire emotions that maintain belief in supernatural beings, or do they desire emotions that facilitate prosociality, or do they desire both? The present investigation shows that religiosity is positively associated with desiring emotions that promote belief in supernatural beings and negatively associated with desiring emotions that impair this belief. Furthermore, religiosity is not consistently related to emotions that facilitate positive interpersonal interactions. These findings extend to religiosity prior work on the association between desired emotions and cultural values. They show that the emotions religious people desire are those that are consistent with their foundational religious beliefs. The symbiotic relationship between religiosity and desired emotions is a testament to the manner in which cultural systems rely on and harness the value-laden aspects of emotions.

## Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported in part by Grant 794/11 from the Israel Science Foundation to the last author.

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## Supplemental Material

Supplemental material is available online with this article.

## Notes

1. The emotions that facilitate the recognition of higher beings are similar to hypo-egoic states in the sense that they involve less self-focused thought (Leary et al., 2006). However, these emotions also differ from hypo-egoic states in that they do not necessarily lead to concrete and present-focused thought.
2. The dataset was analyzed previously in Tamir et al. (2016), which investigated the association between values and emotions, and in Tamir et al. (2017), which investigated the implications of desired emotions for well-being. Neither of these prior investigations examined religiosity.
3. The zero-order correlation between religiosity and desired awe was not significant. This may be due to mean-level differences in desired awe between different groups in the Level 2 variables. After accounting for the nested structure of the data and before including any covariates, religiosity was significantly correlated with desired awe,  $\beta = .05$ ,  $SE = .02$ ,  $p = .004$ . All other emotions were also significantly associated with religiosity when accounting for the nested structure of the data (gratitude:  $\beta = .07$ ,  $SE = .01$ ,  $p < .001$ ; pride:  $\beta = -.10$ ,  $SE = .02$ ,  $p < .001$ ; socially engaging:  $\beta = .02$ ,  $SE = .01$ ,  $p = .002$ ; socially disengaging:  $\beta = -.02$ ,  $SE = .01$ ,  $p = .005$ ).
4. Associations between religiosity and desired emotions remained unchanged when excluding the demographic covariates from the analysis, with the exception of socially disengaging emotions,  $\beta = -.01$ ,  $se = .01$ ,  $p = .032$ .
5. This study collected additional measures concerned with other elements of emotion regulation that are analyzed in Vishkin et al. (2019). These measures were listed in the preregistration.
6. Characteristics of the sample pools required us to alter this criterion in two cases. In the Turkish sample, it was only possible to obtain 17% of the sample from answer point 2 (*Not important at all, although I consider myself religious*). In the American sample, it was only possible to obtain 13% of the sample from answer point 5. In both cases, we compensated by oversampling from adjacent answer points.
7. The panel determined this criterion independently during a pilot, by establishing one third of the median time participants took to complete the survey as the cutoff. This led to the removal of nine participants in total (four in the American sample, one in the Israeli sample, and four in the Turkish sample).
8. Scales assessing emotion regulation strategies were presented in a counterbalanced order, such that participants rated their desired and experienced emotions either before the other scales or after the other scales. All scales appeared in the preregistration.
9. Additional items assessed emotions not relevant to the present investigation, such as emotions relevant to openness and conservation values (Tamir et al., 2016).

10. HLM was inappropriate to use for the analyses in the present study because it requires a larger number of groups at Level 2. The current design would have resulted in only 2 degrees of freedom for the Level 2 variables.
11. After accounting for the nested structure of the data and before including any covariates, religiosity was significantly correlated with all desired emotions except disengaging emotions (awe:  $\beta = .18$ ,  $SE = .04$ ,  $p < .001$ ; gratitude:  $\beta = .28$ ,  $SE = .04$ ,  $p < .001$ ; pride:  $\beta = -.22$ ,  $SE = .04$ ,  $p < .001$ ; socially engaging:  $\beta = .09$ ,  $SE = .04$ ,  $p = .017$ ; socially disengaging:  $\beta = -.01$ ,  $SE = .04$ ,  $p = .70$ ).
12. Associations between religiosity and desired emotions remained unchanged when excluding the demographic covariates from the analysis, with the exception of awe,  $\beta = .06$ ,  $se = .03$ ,  $p = .091$ .
13.  $F(2, 613) = 3.53$ ,  $p = .030$  (United States:  $M = 3.81$ ,  $SD = 0.98$ ; Turkey:  $M = 3.74$ ,  $SD = 1.09$ ; Israel:  $M = 3.53$ ,  $SD = 1.32$ ).

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