Self-transcendent positive emotions increase spirituality through basic world assumptions

Patty Van Cappellen[a], Vassilis Saroglou[a], Caroline Iweins[a], Maria Piovesana[a]
& Barbara L. Fredrickson[b]

[a] Department of Psychology, Université Catholique de Louvain, Louvain-la-
Neuve, Belgium

[b] Department of Psychology, University of North Carolina, Chapel Hill, NC,
USA
Published online: 13 May 2013.

PLEASE SCROLL DOWN FOR ARTICLE

Self-transcendent positive emotions increase spirituality through basic world assumptions

Patty Van Cappellen[1], Vassilis Saroglou[1], Caroline Iweins[1], Maria Piovesana[1], and Barbara L. Fredrickson[2]

[1]Department of Psychology, Université Catholique de Louvain, Louvain-la-Neuve, Belgium
[2]Department of Psychology, University of North Carolina, Chapel Hill, NC, USA

Spirituality has mostly been studied in psychology as implied in the process of overcoming adversity, being triggered by negative experiences, and providing positive outcomes. By reversing this pathway, we investigated whether spirituality may also be triggered by self-transcendent positive emotions, which are elicited by stimuli appraised as demonstrating higher good and beauty. In two studies, elevation and/or admiration were induced using different methods. These emotions were compared to two control groups, a neutral state and a positive emotion (mirth). Self-transcendent positive emotions increased participants' spirituality (Studies 1 and 2), especially for the non-religious participants (Study 1). Two basic world assumptions, i.e., belief in life as meaningful (Study 1) and in the benevolence of others and the world (Study 2) mediated the effect of these emotions on spirituality. Spirituality should be understood not only as a coping strategy, but also as an upward spiralling pathway to and from self-transcendent positive emotions.

Keywords: Positive emotions; Spirituality; Elevation; Admiration; Basic world assumptions.

Now in passing from fear through awe to admiration and reverence man advances from the state of a beggar asking for protection to that of a bestower of praises.

Leuba (1912)

Spirituality as resulting from positive emotions

Spirituality can be defined as the "tendency to orient oneself toward a larger transcendent reality that binds all things into a unitive harmony. It reflects the personal search for connection with a larger sacredness" (Piedmont, 1999).

Spirituality has primarily and abundantly been studied by psychologists as implied in the process of overcoming adversity, i.e., as triggered by negative experiences and as a provider of positive outcomes. Thus, spirituality is usually studied as an effective coping strategy in response to distress (Pargament, 1997). Indeed, research shows that the death of a loved one, among other negative life events, increases people's interest or

involvement in spirituality as well as in religion (Hood, Hill, & Spilka, 2009). In addition, spirituality (along with religiosity) has been modestly but consistently associated with physical and mental health outcomes and with positive emotions (Koenig, King, & Carson, 2012). Plus, research has shown that spiritual practices, such as meditation, induce positive emotions (Davidson et al., 2003; Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008).

This is not the whole picture, however. Anecdotal evidence from biographical sources (Keltner & Haidt, 2003; Sundararajan, 2002) and preliminary experimental evidence (Sargolou, Buxant, & Tilquin, 2008) suggests that the reverse causal path may also exist; positive emotions, or at least some of them, may be conducive of higher spirituality.

Self-transcendent positive emotions

We argue that perhaps not all positively valenced emotions promote spirituality. It may be that only those positive emotions that share a common appraisal—that is, seeing something or someone greater or better than the self—do so. These emotions have been studied as the self-transcendent positive emotions (see Haidt, 2003b; Schindler, Zink, Windrich, & Menninghaus, 2013). Common elicitors are displays of talent or of physical and moral beauty. Elevation, awe, or admiration are considered to be prototypical self-transcendent positive emotions.

These emotions are distinct from other positive emotions in that they do not primarily concern the self, or the self's goals or normal petty concerns (Haidt & Keltner, 2004). Compared to other positive emotions such as pride or amusement, self-transcendent positive emotions are triggered by events that are not directly relevant to one's own current goal pursuit (Algoe & Haidt, 2009; Keltner & Haidt, 2003; Schindler et al., 2013) and perhaps as such lead to more stimulus-focused attention (Shiota, Keltner, & Mossman, 2007). Self-transcendent positive emotions also promote prosocial behaviour and a desire to become a better person (Cox, 2010; DeSteno, Bartlett,

Baumann, Williams, & Dickens, 2010; Rudd, Vohs, & Aaker, in press; Schnall, Roper, & Fessler, 2010). Finally, it is important to clarify that these emotions can be studied in secular contexts and in all people, independent of their religiosity.

In the present paper, we argue that transient self-transcendent positive emotions have the power to shape lasting spiritual beliefs. Preliminary experimental evidence in favour of this assumption comes from Saroglou et al. (2008). Using videos to induce specific emotions, these authors showed that awe, but not amusement, led participants (undergraduate students from Belgium) to perceive themselves as being more spiritual. Yet, as acknowledged by the authors themselves, these findings may not be so surprising given that awe is known to be a prototypical emotion of conversion and religious experience (Keltner & Haidt, 2003). Therefore, the question remains as to whether other self-transcendent positive emotions can make people more spiritual or whether the above findings were specific to awe. In the present paper, we hypothesise that other positive emotions that share a family resemblance to awe, namely, the self-transcendent positive emotions, may have similar effects on spirituality.

Here we investigate two key self-transcendent positive emotions, i.e., elevation and admiration, whose relations to spirituality are less obvious than for awe. *Elevation* is the positive emotional response to moral exemplars (Haidt, 2000). Witnessing good deeds, acts of charity, or acts of gratitude gives a pleasant and warm feeling in the chest called elevation. Whereas elevation is produced by exemplars of kindness and virtue, *admiration* is produced by exemplars of talent and skill. Both are characterised by the appraisals of the self-transcendent emotions, that is, seeing something or someone greater or better than the self (Haidt, 2003).

To show the specificity of self-transcendent positive emotions, we compared them with two distinct control groups, i.e., a neutral state condition and a non self-transcendent positive emotion condition, mirth. We thus hypothesised that

induced elevation and admiration, two self-transcendent emotions, but not another positive emotion that is not characterised by the same appraisals (such as mirth), would push people to positively reconsider their surrounding world and open a path to embrace a spiritual belief, as defined above.

Mirth is the positive emotion associated with humour (Martin, 2007). Research on mirth provides evidence that this emotion does not share the self-transcendent positive emotions characteristics of reverence towards something or someone greater or better than the self. Indeed, in mirth/humour, the triggering event is appraised as a sudden awareness of an incongruity (Campos, Shiota, Keltner, Gonzaga, & Goetz, 2013; Morreall, 1989) and as a diminishment of reality; something must be evaluated as less important or smaller than it appeared to be (Wyer & Collins, 1992). As argued by Strohminger, Lewis, and Meyer (2011) the appraisal tendency of amusement/humour is to increase irreverence, particularly towards topics that usually afford deep respect. These same authors showed that induced amusement, but not elevation, leads people to accept moral violations to a greater degree. In addition, even if humour has been shown to promote social bonding with other people (Martin, 2007), it is not characterised by self-disinterestedness and therefore different from the self-transcendent positive emotions. Indeed, amusement is associated with self-esteem, positive self-concept (Kuiper & Martin, 1993), and even narcissism (Freud, 1928). Given these correlates, we did not expect amusement to lead to increased spirituality, which is characterised by the elevation of reality and meaning (Saroglou & Anciaux, 2004).

Religiosity as a possible moderator

In Study 1, we investigated whether and to what degree self-transcendent positive emotions can open up all people to spirituality, independently of their previous level of religiousness. Emotions in general may have the power of both supporting the formation of new beliefs and strengthening existing beliefs (Fiedler & Bless, 2000; Frijda & Mesquita, 2000). The hypothesised effect could apply to both believers and non-believers. Among the former, induction of self-transcendent positive emotions may intensify the existing interest and investment in spirituality (see also Malhotra, 2010; Van Cappellen & Saroglou, 2012, for the role of contextual factors in activating religion- and spirituality-related attitudes and behaviours). In addition, one can also expect that positive emotions might push everyone, even non-believers, to consider spirituality as one, possibly important, way of thinking of and experiencing connection with a transcendent reality. Indeed, positive emotions have been shown to promote creative and flexible thinking and to push people to consider new possibilities (Fredrickson, 1998, in press). We therefore hypothesised that the effect of self-transcendent positive emotions on spirituality would work for all participants independent of their initial level of religiousness.

Basic world assumptions as possible mediators

In Study 1, and more systematically in Study 2, we investigated the as yet unexplored question of the mechanisms underlying the effect of induced self-transcendent emotions on spirituality. It is indeed important to know what is at play in the observed effects and to show that they constitute a purely positive process. The latter is critical if we wish to move beyond the more traditional approaches that understand spirituality as a means to overcome negative experiences.

According to Janoff-Bulman (1992), at the core of our beliefs reside three main assumptions about the self, others, and the world. In everyday life, people believe they are good (belief in self-worth), that the world and the others are benevolent, and that the world is meaningful. These three positive assumptions are held to be broad and abstract basic beliefs that everybody holds to one degree or another. Theoretically and empirically, spirituality and basic beliefs are associated, whether basic beliefs are taken separately through corresponding self-related

constructs (self-esteem: Benson & Spilka, 1973; meaning: Park, 2005; and trust: Daniels & von der Ruhr, 2010) or as parts of a global beliefs system (see Buxant, Saroglou, Casalfiore, & Christians, 2007).

Very few studies have examined the impact of *positive* experiences on these beliefs. A notable exception is Catlin and Epstein's (1992) study, where the experience of a positive event was found to generally relate to more positive beliefs. For example, people reporting a romantic love relationship, compared to those reporting no such relation, differed on their scores on belief in love worthiness, global self-esteem, value of relationships to others, and personal competence. They also found that positive events were differentially associated with different basic beliefs.

Theorists have hypothesised that people feeling self-transcendent positive emotions find more ways to connect deeply with others and to find meaning in their lives (Haidt & Keltner, 2004), however no empirical research to date has tested this assumption. In the present research, we expected the self-transcendent emotions of elevation and admiration to make people positively appraise their basic beliefs in meaningfulness and benevolence of people and the world. By contrast, we did not expect self-transcendent emotions to have a strong effect on the basic belief in self-worth because these emotions promote self-disinterestedness. Indeed, research has shown that self-transcendent emotions elicit a desire in the self to become better and more like other remarkable persons, but it hasn't been shown that self-transcendent emotions elicit the idea that the self is in fact better or more remarkable (Algoe & Haidt, 2009).

Moreover, we also expected that high endorsement of basic beliefs in meaningfulness and benevolence of others and the world would consequently lead participants to more strongly endorse a spiritual belief. In other words, we expected that these basic world assumptions may mediate the proposed relationship between self-transcendent positive emotions and increased spirituality.

Overview of the studies

Here, we present two studies in which we examined how, and for whom, self-transcendent positive emotions promote spirituality. In Study 1, elevation, one of the self-transcendent positive emotions, was induced. We gathered pre-test data on individual differences in religiosity to test for possible moderation. Also, we took a first step in the study of the mediators by investigating meaning in life. Study 2, intended to replicate, solidify, and extend the findings of Study 1, focused on two representatives of the self-transcendent positive emotions, namely, elevation and admiration, and assessed all three basic beliefs (meaning, benevolence, and self-worth) as possible mediators. To expand generalisability, we also used a different method of emotional elicitation, a sample of distinct nationality and age, and alternative measures of our key constructs. Across the two studies, self-transcendent positive emotions were compared with two separate control groups, a neutral state condition and a positive emotion condition (i.e., mirth).

STUDY 1

Method

Participants and procedure

Participants were 90 adults (65 women; $M_{age} = 30.9$ years, $SD = 10.3$) from Spain and Italy. The majority self-identified as Catholics (70%) and the rest of the participants reported being atheists or agnostics. They were requested by e-mail to participate in an experiment "about emotions". Recruitment was accomplished through the snowball sampling technique, beginning with relatives of one of the authors. Participants were asked to immediately answer a first questionnaire intended to measure trait religiousness, and after a minimum of seven days, a second questionnaire that included the emotional elicitation, the mediator, and spirituality questions. All participants answered both questionnaires. The first questionnaire was the same for all participants, but for the second part of the experiment, participants were randomly assigned to one of

three conditions: (i) elicitation of elevation, a self-transcendent positive emotion; (ii) mirth, a non-self-transcendent positive emotion (positive emotion control condition); and (iii) a neutral state control condition.

Material and questionnaires

Questionnaires were translated into Spanish and Italian using the forward and back translations method. All participants completed a preliminary questionnaire aimed to assess their general religiosity. This construct was measured by the following two items: "God is important in my life" and "Religion is important in my life" (7-point Likert scale, from $1 = $ *Not at all important* to $7 = $ *Very important*). Reliability was satisfactory ($\alpha = .86$). These items were mixed with other filler items asking for opinions on topics of general social interest (e.g., "The environment is a sensitive theme for me" and "I think that the means to fight against the economic recession are appropriate"), to conceal the fact that our study was concerned with religion and spirituality.

At least seven days after taking the first questionnaire, participants were re-contacted and asked to recall a particular event (emotional elicitation) that varied across conditions. In the *elevation* condition, participants received the following instructions: "We would like you to remember a specific time when you saw a manifestation of humanity's 'higher' or 'better' nature, an act of virtue or moral beauty. This could be by having seen somebody helping a person in need or in a difficult situation, in real life or on television" (adapted from Haidt, 2000). In the *mirth* condition (positive emotion control), the instructions were as follows: "We would like you to remember a specific situation or time during which you laughed a lot". In both these conditions, these instructions continued with the following sentence: "Try now, for a few moments, to immerse yourself again in this event, to remember what you felt and how you lived this experience. Describe in three to six lines, in the space below, this event and the [feeling or amusement, depending on the condition] you felt". In the *neutral state control* condition, parti-

cipants received the following instructions: "We would like you to remember the last time you went to the movie theatre, and to describe in a few lines, in the space below, the path you followed from the time you left your home to the moment when you sat down in the movie theatre. Try to remember how you got to the theatre and describe it in three to six lines". Two judges reviewed participants' descriptions in order to verify that they followed instructions correctly, which was always the case.

Following the experiment, we measured *spirituality* and *meaning in life*. One single item was used to measure spirituality: "Spirituality is important in my life". Although brief, this index has often been found to predict spirituality-related constructs meaningfully and well in a way that is equivalent to multi-item measures of spirituality, and to both relate to and be distinct from religiosity (e.g., Saroglou & Munoz-Garcia, 2008; Saroglou, Pichon, Trompette, Verschueren, & Dernelle, 2005). For meaning in life, we selected three items from Hicks and King (2007), which were adapted from the Purpose in Life Test (Crumbaugh & Maholick, 1964). These items were: "In life, I have very clear goals and aims"; "My personal existence is very purposeful and meaningful"; and "I have clear goals and a satisfying purpose in life" ($\alpha = .78$).

Results

The means and standard deviations of all measures are detailed by condition in Table 1. We ran planned comparisons contrasting the self-transcendent positive emotion condition with each of the two control conditions. Participants scores on spirituality were marginally significant higher in the elevation condition than in the neutral state control condition, $t(58) = 1.88$, $p = .06$, and significantly higher than in the positive emotion control condition, $t(58) = 2.06$, $p = .04$. In addition, participants in the positive emotion control condition did not differ from those in the neutral state control condition, $t(58) = -0.12$, *ns*.

Table 1. *Descriptive statistics by condition for the variables measured in Study 1*

	Self-transcendent positive emotions	Positive control	Neutral control
	Elevation	Mirth	Neutral
	M (SD)	M (SD)	M (SD)
Religiousness (measured prior to the experiment)	3.83 (2.04)	3.70 (1.95)	4.13 (1.88)
Spirituality	5.30 (1.51)	4.30 (2.18)	4.37 (2.27)
Meaning in life	5.34 (0.98)	4.93 (1.18)	4.91 (1.02)

Participants in the elevation condition also reported higher meaning in life than participants in the neutral state control condition, $t(58) = 1.88$, $p = .06$, but, even if results were in the same direction, they were not significant compared to those in the positive emotion control condition, $t(58) = 1.47$, $p = .14$. Again, however, participants in the positive emotion control condition did not differ from those in the neutral state control condition, $t(58) = 0.08$, ns.

We next examined whether the effect of the self-transcendent emotion on spirituality was mediated by beliefs in the meaning in life. To lend sufficient strength to our analyses, and given that the two control conditions, positive or neutral, never differed from each other but both differed similarly from the self-transcendent condition, here we contrasted the self-transcendent condition against the two control conditions taken together. The contrast was dummy coded −1 for control conditions; 1 for elevation. We assessed indirect effects of the predictor variable via the proposed mediator using the bootstrapping method

(Preacher & Hayes, 2008). All results were based on 5,000 bootstrap samples. We report data parameters and bias corrected and accelerated 95% confidence intervals (BCa CI). Compared to the Sobel test, these bootstrapped confidence intervals provide a more accurate estimate of the indirect effect with small to moderate sample sizes (Shrout & Bolger, 2002). Indeed, the Sobel test relies on the assumption of a normal sampling distribution, which is unlikely to be met in small samples.

The total effect of control conditions versus elevation on spirituality, $\beta = 0.48$, $t(88) = 2.16$, $p = .03$, became non-significant when controlling for meaning in life, $\beta = 0.36$, $t(88) = 1.65$, ns. Furthermore, the bootstrap analysis revealed that the 95% bias-corrected and accelerated confidence interval (BCa CI) for the size of the indirect effect excluded zero [0.34, 1.11], which suggests a significant indirect effect (see Figure 1).

Finally, we examined whether personal religiousness, measured prior to the experiment, moderated the effect of the self-transcendent
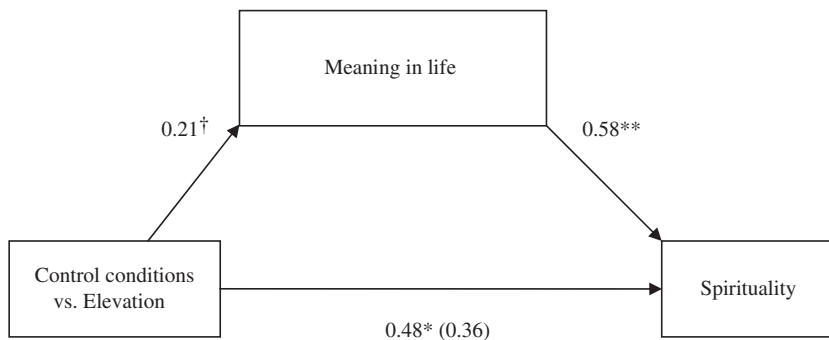

Figure 1. *Simple mediation of the effect of elevation on spirituality through meaning in life (Study 1). Numbers on paths represent unstandardised regression coefficients.* †$p < .10$; *$p < .05$; **$p < .01$.

emotion on spirituality. We regressed spirituality (centred) on our contrast (1 = control conditions vs. 1 = elevation), personal religiousness measured prior to the experiment (centred), and their interaction. There was of course a main effect of personal religiousness, $\beta = 0.53$, $p < .001$ (the more religious participants before the experiment also reported being more spiritual after the experiment), and condition, $\beta = 0.50$, $p = .01$ (the self-transcendent condition led participants to report being more spiritual). In addition, we obtained a significant interaction between personal religiousness measured prior to the experiment and condition, $\beta = -0.25$, $p = .01$. Simple slope analyses (see Figure 2) showed that for participants scoring 1 SD below the mean, i.e., participants low in personal religiousness before the experiment, the self-transcendent condition made them feel more spiritual, $\beta = 0.98$, $p < .001$; whereas for participants scoring 1 SD above the mean, i.e., participants high in personal religiousness before the experiment, there was no effect of the conditions, $\beta = 0.02$, $p > .93$.

Discussion

Elevation, a self-transcendent emotion, made participants more spiritual than participants in the positive emotion control condition, mirth. This was also true when compared to the neutral
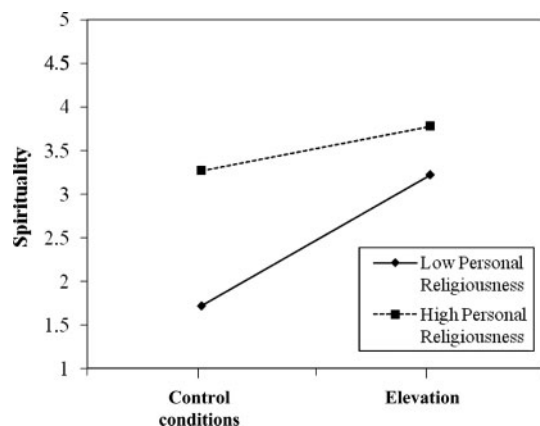

Figure 2. Spirituality as a function of conditions and personal religiousness measured prior to experiment, 1 SD below and above the mean, for the high and low on personal religiousness (Study 1).

state control condition, but only marginally. Study 1 extends and consolidates findings of a previous study in which lab induction of awe led to participants' increased reports of spirituality (Saroglou et al., 2008). Study 1 shows for the first time that the effects are not specific to awe, but can be generalised to at least one other self-transcendent positive emotion, that of elevation. Moreover, the effect of elevation on spirituality could be explained by an increased belief in the meaning of life. Also, a pre-test allowed us to distinguish between religious and non-religious people. These analyses showed that the induction of elevation increased the perceived importance of spirituality among the less religious but less so among the more religious. It may be that in traditionally religious countries such as Italy or Spain, religious young adults are also high in their scores of spirituality and, thus, there is no room for "more" spirituality even after relevant contextual influences (a ceiling effect). Interestingly, the findings regarding the low or the non-religious suggest that interest in spirituality is malleable even among non-believers and that, more broadly speaking, some positive emotions may lead people to modify broad motivational and ideological dispositions.

Initial evidence was found that elevation, in addition to the self-transcendent emotion of awe, may also increase spirituality. Study 2 was designed to replicate these findings and to induce a third self-transcendent positive emotion, admiration, in order to strengthen the argument that self-transcendent positive emotions as a family are conducive to spirituality. Finally, Study 2 aimed to address the mediators more extensively by investigating all three basic world assumptions (meaning, benevolence, and self-worth).

STUDY 2

Study 2 was designed to replicate and extend Study 1 in several ways. First, we tested two distinct self-transcendent positive emotions, namely elevation and admiration. Second, we used a different emotion induction method (video clips), a different

measure of spirituality (the Spiritual Transcendence Scale; Piedmont, 1999), and a sample different in nationality and age (Belgian students). Third, we investigated all three of the previously mentioned basic world assumptions as possible mediators. We hypothesised (see introduction) that two distinct self-transcendent positive emotions would increase belief in the meaning of the world and in the benevolence of others and the world. We did not predict self-transcendent positive emotions to have an impact on self-worth. Third, a scale of religiousness was added to see if the effects of self-transcendent positive emotions could extend to more institutionalised and organised belief systems.

Method

Participants and procedure

Ninety-five students (64 women; $M_{age} = 17.6$ years, $SD = 0.7$) in their last year of a Belgian secondary school participated in the experiment in the context of their Catholic religion class. The majority had grown up in the Catholic tradition (65.3%) and 32.6% of them still identified themselves as Catholic. The rest of the participants reported being atheists or agnostics.

Four classes were randomly assigned to four different conditions, using four separate videos during which we respectively induced elevation ($n = 27$), admiration ($n = 19$), mirth (positive emotion control; $n = 24$), and no emotion in particular (neutral state control; $n = 25$). Then participants completed a questionnaire composed of manipulation checks, measures of basic world assumptions and spirituality (our French translation). To minimise possible demand characteristics, the teacher (the same for all the students) simply introduced the experimenter, but said nothing about the object and purpose of the study. The experimenter did not discuss the object and purpose of the study either.

Material and questionnaire

Videos and manipulation checks. All video clips were short in duration (2.5–7 minutes). The video for the elevation condition featured the moral exemplar of a founder of a charity that fights racism and hunger by concrete actions. The admiration video depicted the extraordinary talent of Susan Boyle on the TV show *Britain's Got Talent*. These two first video clips were selected to elicit two distinct self-transcendent positive emotions and we refer to them as "self-transcendent" videos. The positive emotion control video consisted of sketches of a stand-up comedian depicting an old man trying to understand the menu in a fast-food restaurant. This video was selected to elicit the non-self-transcendent positive emotion of mirth; it will subsequently be labelled the positive emotion control video. Finally, in the neutral state control video, an expert described the many stages necessary for the production of beer. The positive emotion and neutral state control videos were taken from Saroglou et al. (2008).

Immediately after watching each video, participants rated the overall intensity of emotions and levels of overall positive and negative emotions felt during the video clip (three items). Then a list of different discrete positive and negative emotions was given. The list contained a total of 17 positive (*inspiration, happiness, love, amusement, pride, feeling moved, respect, admiration, awe, gratitude, joy, interest, enthusiasm, feeling attentive, feeling active, humility,* and *pleasure*) and five negative emotions (*anger, fear, shame, boredom,* and *sadness*), adapted from the Positive and Negative Affect Scales (PANAS; Watson, Clark, & Tellegen, 1988) and extended with emotions taken from Algoe and Haidt (2009). These measures served as manipulation checks.

We performed a one-way analysis of variance (ANOVA) on all these manipulation check measures and Tukey's post hoc tests (see Table 2 for means on relevant emotions). The three video clips that were intended to elicit positive emotions (elevation, admiration, and mirth) were higher than the neutral state control condition on emotional intensity, overall score on positive emotions, and, more specifically, enthusiasm and joy (all $ps < .027$), meaning that all three manipulations elicited positive affect. However, there

Table 2. *Descriptive statistics by condition for relevant manipulation checks in Study 2*

	Self-transcendent positive emotions		Positive control	Neutral control
	Elevation	Admiration	Mirth	Neutral
	M (SD)	M (SD)	M (SD)	M (SD)
Emot. intensity	4.33 (0.96)	5.16 (1.30)	4.29 (0.91)	2.88 (1.56)
Overall positivity	6.11 (0.80)	6.26 (0.87)	6.00 (1.18)	4.67 (1.49)
Interest	5.11 (1.54)	4.53 (1.26)	4.79 (1.47)	4.92 (1.32)
Admiration	5.89 (0.80)	**6.11** (1.20)	4.79 (1.72)	4.56 (1.69)
Respect	5.78 (0.93)	5.95 (1.31)	3.67 (1.76)	4.76 (1.79)
Moved	4.22 (1.74)	5.47 (1.39)	2.08 (1.21)	2.00 (1.19)
Inspiration	4.00 (1.44)	3.37 (1.64)	3.00 (1.44)	2.76 (1.71)
Awe	4.56 (1.12)	5.37 (1.54)	4.08 (1.41)	3.76 (1.69)
Gratitude	4.63 (1.08)	3.61 (1.69)	3.33 (1.37)	2.84 (1.72)
Love	4.11 (1.34)	3.47 (1.90)	2.17 (1.40)	1.88 (1.45)
Amusement	3.19 (1.42)	4.42 (1.61)	**5.92** (1.14)	3.84 (1.89)
Negative emot.	2.13 (0.84)	2.09 (0.90)	1.58 (0.93)	1.57 (0.47)

Note: Figures in **bold** are relevant emotion label for admiration and mirth.

were no differences among the conditions in interest, feeling attentive, and feeling active (all $ps > .22$). In the admiration condition, words related to admiration (admiration, respect, feeling moved, inspiration, and awe; see Algoe & Haidt, 2009) were always rated higher than in the positive emotion and neutral state control conditions, all $ps < .05$, except for inspiration. As there is no specific and unique word for elevation, Algoe and Haidt (2009, p. 115) suggested that words related to admiration, plus words related to warmth (gratitude and love), are a good approximation. In the elevation condition, these emotions were indeed rated higher than for the positive emotion and neutral state control conditions except for awe and inspiration, all $ps < .07$. Finally, in the positive emotion control condition of mirth, amusement was rated higher than all the other conditions (all $ps < .011$; the French translation of *mirth* is *amusement*).

Spirituality and religiousness. Participants next completed measures of self-reported spirituality and religiousness. To measure spirituality, we used the *Spiritual Transcendence Scale* (Piedmont, 1999; French translation by Saroglou et al., 2008). The scale consists of three subscales. *Universality* includes nine items assessing the "belief in the unitive nature of life", a sense of interconnectedness among all forms of life and all people. *Connectedness* includes six items assessing the "belief that one is part of a larger human orchestra", a sense of connection across time and place. The third subscale, *Prayer Fulfilment*, was not included because this measure of spirituality is not clearly distinct from religion. Indeed, it has an explicitly religious content (reference to God and religious practices such as prayer or meditation) and has been found to relate positively to traditional religious attitudes and behaviours (Piedmont, 1999). Reliability for both subscales was satisfactory ($\alpha = .89$). Personal religiousness was measured through two items (7-point Likert scale) measuring the importance of God in life and the importance of religion in life ($r = .87$).

Basic world assumptions. To measure basic word assumptions (BWA), we used the *Moderate Impact on Beliefs Questionnaire* (Corsini & Rimé, 2010). This questionnaire was especially created to assess the impact of less intense emotional experiences, which is more relevant for our study than using a classic measure created for post-traumatic experiences. This questionnaire measures three typical beliefs, also known as BWA (Janoff-Bulman, 1992): (i) belief in *benevolence* (of others and of

the world; six items, α = .87), sample item: "I see people in a more positive way"; (ii) belief in *meaningfulness of the world* (three items, α = .71), sample item: "The world seems to make a lot of sense to me"; and (iii) belief in *self-worth* (three items, α = .71), sample item: "I feel capable" (7-point Likert scale).

Results

Effects of the conditions and mediation by basic word assumptions

The means and standard deviations of all measures are detailed by condition in Table 3. As in Study 1, we ran planned comparisons contrasting each self-transcendent positive emotion condition with each control condition. For spirituality, as expected, participants scored significantly higher in the elevation condition than in the neutral state control condition, $t(50) = 2.47$, $p = .02$, and than in the positive emotion control condition, $t(49) = 2.42$, $p = .02$. The same trends were found for admiration compared to neutral state control condition, $t(42) = 1.90$, $p = .06$, and to the positive emotion control, $t(41) = 1.87$, $p = .06$. In addition, participants in the positive emotion control condition did not differ from those in the neutral state control

condition, $t(47) = -0.10$, *ns*. Concerning religiousness, although the pattern of means was in the same direction, the results did not reach significance, all $ps > .14$.

Moreover, participants in the elevation and admiration conditions reported higher belief in the benevolence of others and the world than participants in the neutral state control condition, $t(50) = 3.34$, $p = .002$, $t(42) = 1.64$, $p = .10$, respectively, and than in the positive emotion control condition, $t(49) = 4.19$, $p < .001$, $t(41) = 2.50$, $p = .02$, respectively. In addition, participants in the positive emotion control condition did not differ from those in the neutral state control condition, $t(47) = -1.40$, *ns*. Participants were not different across conditions on belief in meaningfulness of the world and self-worth, all $ps > .12$ (see Table 3).

We next examined whether the effects of elevation and admiration on spirituality were mediated by the basic belief in benevolence of others and the world. As in Study 1, we tested a model with our contrast (dummy coded -1 = positive emotion and neutral state control conditions taken together vs. $+1$ = self-transcendent emotion: elevation *or* admiration) as a predictor variable, spirituality as the dependent variable, and benevolence as the mediator (see Figure 3). The total effect of control conditions (combined) vs. elevation on spirituality, $\beta = 0.33$, $t(76) = 2.73$, $p = .008$, became non-significant when controlling for benevolence of others and the world, $\beta = -0.01$, $t(76) = -0.09$, *ns*. Furthermore, the bootstrap analysis revealed that the 95% bias-corrected and accelerated confidence interval (BCa CI) for the size of the indirect effect excluded zero [.17, .56], which suggests a significant indirect effect. The same conclusion was drawn when contrasting the control conditions (combined) with admiration. Indeed, the total effect of admiration on spirituality, $\beta = 0.30$, $t(68) = 2.09$, $p = .04$, became non-significant when controlling for benevolence of others and the world, $\beta = 0.06$, $t(68) = 0.56$, *ns*. Furthermore, the 95% BCa CI was [.04, .50], which suggests a significant indirect effect.

Table 3. *Descriptive statistics by condition for the variables measured in Study 2*

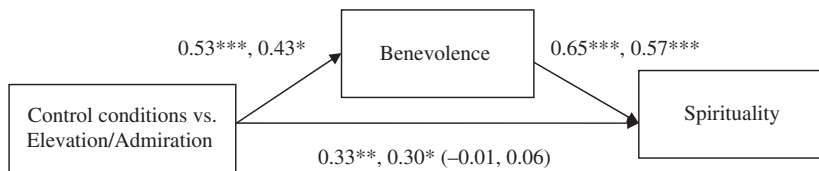|	Self-transcendent positive emotions		Positive control	Neutral control
	Elevation	Admiration	Mirth	Neutral
	M (SD)	M (SD)	M (SD)	M (SD)
Spirituality	4.30 (0.83)	4.24 (0.94)	3.62 (1.18)	3.65 (1.07)
Religiousness	3.50 (2.01)	3.33 (1.83)	2.71 (1.68)	3.02 (1.67)
Benevolence	4.27 (0.72)	4.06 (1.44)	2.96 (1.44)	3.45 (1.02)
Meaningfulness	3.73 (1.03)	3.67 (1.39)	3.51 (1.45)	3.64 (1.26)
Self-worth	3.64 (0.91)	3.95 (1.23)	3.26 (1.08)	3.36 (1.08)

Figure 3. *Effects of elevation or admiration on spirituality through benevolence (Study 2). The first numbers refer to the results for elevation and the second for admiration. Numbers on paths represent unstandardised regression coefficients.* *$p < .05$; **$p < .01$; ***$p < .001$.

Emotions as active ingredients of the experimental effects

Are emotions active ingredients? Video clips are complex stimuli involving emotional, but also cognitive and motivational aspects. We therefore sought to verify that the effects obtained not only constituted a cognitive process, but were also due to the self-transcendent positive emotions induced by the "self-transcendent" videos of elevation and admiration. By running another mediational analysis, we tested whether it was indeed the specific self-transcendent positive emotions and not the non-self-transcendent positive emotions that explained our effects. To this end, we divided the positive emotions, which participants had rated for the purpose of manipulation check, into two groups (see Haidt, 2003), i.e., the self-transcendent emotions—inspiration, love, feeling moved, respect, admiration, awe, gratitude, and humility ($\alpha = .85$); and the non-self-transcendent emotions—happiness, amusement, pride, joy, interest, enthusiasm, feeling attentive, feeling active, and pleasure ($\alpha = .87$). Mean scores were calculated for these two groups. We tested two models with each contrast as a predictor variable (as before, dummy coded -1 for control conditions combined); $+1$ for elevation *or* admiration), spirituality as a dependent variable, and the self-transcendent and non-self-transcendent emotions simultaneously as proposed mediators. The bootstrapping method was again used because it is one of the most powerful and valid methods for testing indirect effects for a single-step multiple mediator model (see Preacher & Hayes, 2004). More importantly, it also allowed us to test each mediator's unique ability to mediate, beyond the other plausible mediator in the model. This was done by testing whether the sizes of the indirect effects via different mediators differed significantly from each other.

The total effect of control conditions (combined) vs. elevation on spirituality, $\beta = 0.33$, $t(76) = 2.73$, $p = .008$, became non-significant when controlling for the mediators, $\beta = -0.01$, $t(76) = -0.03$, *ns*, suggesting that positive emotions mediate the link. Furthermore, the analyses showed that the total indirect effect is significant, with a point estimate of .34 and a 95% BCa CI of [.11 to .61]. However, a closer look at the specific indirect effects indicated that only self-transcendent positive emotions constituted a significant mediator, with a point estimate of .34 and a 95% BCa CI of [.12 to .63]. The non-self-transcendent emotions did not mediate, with a point estimate of .001 and a 95% BCa CI of [$-.05$ to .03]. Moreover, contrasting the two indirect effects revealed that self-transcendent positive emotions mediated the effect of the elevation video on spirituality beyond non-self-transcendent positive emotions (point estimate of contrast = .34 95% BCa CI [.13, .66]). The same conclusion was drawn for the contrast between control conditions (combined) and admiration. We report here the results for the same analyses for admiration: $\beta = 0.30$, $t(68) = 2.09$, $p = .04$; $\beta = -0.02$, $t(68) = -0.12$, *ns*; total indirect effect: point estimate of .32 and a 95% BCa CI of [.13 to .56]; specific indirect effect for self-transcendent positive emotions: point estimate of .30 and a 95% BCa CI of [.10 to .59]; specific indirect effect for non-self-transcendent positive emotions: point estimate of .02 and a 95% BCa CI of [$-.04$ to .14]; and contrast between the two indirect effects: point estimate of .28 and a 95% BCa CI of [.03 to .63].

Final model. The mediational analyses showed two mediators: self-transcendent positive emotions and belief in benevolence. We ran two last mediational analyses to verify that the effect of the elevation and admiration videos on spirituality was explained by these two mediators (self-transcendent videos → self-transcendent emotions → benevolence → spirituality). We followed the prescriptions of Hayes, Preacher, and Myers (2011) for these kinds of mediation. Based on 5,000 bootstrap samples, the total effect of the control conditions (combined) versus elevation on spirituality, $\beta = 0.33$, $t(93) = 2.73$, $p = .007$, became non-significant when controlling for the two mediators, $\beta = -0.12$, $t(93) = -1.04$, *ns*. The 95% BCa CI for the indirect effect of elevation video on spirituality through self-transcendent positive emotions and benevolence was [.10, .37], supporting our predictions (see Figure 4). The same was verified when contrasting the control conditions (combined) with admiration, $\beta = 0.30$, $t(93) = 2.09$, $p = .04$; $\beta = -0.07$, $t(93) = -0.58$, *ns*; 95% BCa CI was [.08, .33].

DISCUSSION

The results from Study 2 showed that elevation makes people more spiritual compared to both a neutral state and a positive emotion (mirth) control condition. Admiration, another self-transcendent positive emotion, was also shown to increase spirituality compared to the two control conditions, although it was only margin-ally significant ($p = .06$). Study 2 replicated Study 1 with an additional self-transcendent positive emotion (admiration), a different method of emotional elicitation, a different sample in nationality and age, and a more extensive measure of spirituality. Specifically, people's experiences of self-transcendent positive emotions induced through the elevation and admiration video clips increased spirituality. However, this was not the case for non-self-transcendent positive emotions (as measured for the purpose of manipulation check). Moreover, results showed that an in-creased belief in the benevolence of people and the world is one mechanism that explains the effect of self-transcendent positive emotions on spirituality. Thus, self-transcendent positive emotions make people perceive others and the world as more benevolent, which in turn encourages people to endorse spirituality.

Surprisingly, in contrast to Study 1, the basic belief in the meaningfulness of the world failed to be a significant mediator. This may be due to the simultaneous assessment of this belief with the one of benevolence of the world. It is also possible that the slight wording change, from meaning in life in Study 1 to meaning of the world in Study 2, is not inconsequential. Given the paucity of research on the consequences of positive emotions for basic beliefs, we cannot speculate on an explanation for this unexpected finding. Also, although the results regarding religiousness went in the same direction (religiousness in-creased following elevation and admiration), they were not significant. It may be that changes
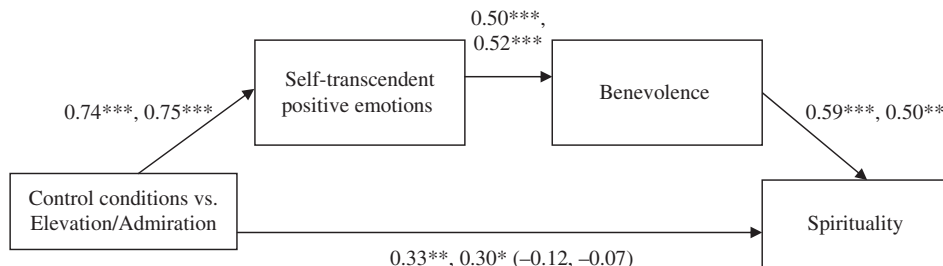

Figure 4. *Multiple mediation of the effect of elevation or admiration on spirituality through self-transcendent emotions felt during the video and belief in benevolence (Study 2). The first numbers refer to the results for elevation and the second for admiration. Numbers on paths represent unstandardised regression coefficients. *p < .05; **p < .01; ***p < .001.*

towards higher religiousness (attachment to religious beliefs, practices, and attitudes in reference to a religious institution) presuppose more effort, motivation, and engagement than changes towards higher spirituality (feeling connected with a sacred external transcendence). This may especially be true in a sample like the one used in our study, in which participants were on average very low on religiousness (see also Saroglou et al., 2008).

A limitation of the present study as well as Saroglou et al.'s (2008) study might be the use of video stimuli rich in content. In addition, in the positive emotion control condition of mirth, the comedian was laughing at other people, which cannot be generalised to all types of humour and mirth. Mitigating this concern, however, we have shown that our effects are, at least partially, due to the self-transcendent positive emotions felt by the participants during the videos, which suggests that the results are not mere effects of video content. Moreover, Study 2 replicates Study 1, using a different method of emotion induction, i.e., the recollection of a specific event, a procedure that allows for a variety of contents across participants.

GENERAL DISCUSSION

When considering the interplay between emotions and religion/spirituality, substantial previous research has established that negative emotions are the antecedents of religion/spirituality and positive emotions are the consequences or the correlates. Put differently, religion and spirituality are usually studied as excellent candidates for an effective coping strategy in the face of stress and adversity. The present studies, however, suggest that this is not the whole story.

Indeed, we consistently argued and found across two experiments that people may also endorse increased spirituality after experiencing certain positive emotions. More specifically, we hypothesised that only a specific family of positive emotions held this power: That family being the self-transcendent positive emotions, which are elicited by stimuli appraised as demonstrating

higher good and beauty (see Algoe & Haidt, 2009; Haidt, 2003). In these two experiments we used different methods of emotional elicitation, different measures of spirituality, and culturally different samples and found that self-transcendent positive emotions, elevation (Studies 1 and 2) and admiration (Study 2), increased participants' spirituality compared to a neutral state control condition and a positive emotion control, mirth.

Importantly, the cognitive and emotional mechanisms through which these effects occurred were also identified. In Study 1, meaning in life was a significant mediator of the effect of self-transcendent memories on increased spirituality. In addition, in Study 2, the latter effect passed through a cluster of self-transcendent positive emotions elicited by the videos and then through an increased belief in the benevolence of people and the world, which may suggest an increased feeling of invulnerability (Janoff-Bulman, 1992). Taken together, these results suggest that the core of the effect of self-transcendent positive emotions on spirituality reside within at least two positive and "secular" (not necessarily religious/ spiritual) mechanisms: a belief in life as meaningful and a belief in the benevolence of others and the world. Previous research (see Hood et al., 2009) has suggested that the mechanism through which positive emotions increase spirituality is through the need for a defence mechanism, to protect individuals from nonsense and from a world or others that are harmful. By sharp contrast, the present research suggests that positive emotions increase spirituality through the positive visions of the world as benevolent and of life as meaningful.

Interestingly, as found in Study 1, those who were less or non-religious were more prone to show the effects of self-transcendent positive emotions on spirituality. This confirms that these effects are not restricted to those individuals who are already somewhat religious.

According to Fredrickson's broaden-and-build theory (1998, 2001), positive emotions broaden thought–action tendencies to include novel and creative ways of thinking, which over time build consequential positive resources for the individual.

Thus, generally speaking, positive emotions may have the power to open people up to something greater than themselves, perhaps even including a sense of transcendence. However, to understand the specificity of our results, the appraisal tendency framework (ATF; Lerner & Tiedens, 2006; Winterich, Han, & Lerner, 2010) is an interesting complementary theory. The ATF assumes that specific cognitive appraisals not only elicit specific emotions (Neumann, 2000; Roseman & Evdokas, 2004), but also shape perceptions of subsequent, unrelated situations and guide behaviours. In the present research, we have argued that a particular family of positive emotions shares the same core appraisals. These appraisals not only give rise to specific emotions but also produce specific effects. We therefore suggest that the thought–action tendencies (to use Fredrickson's phrasing) or the appraisals (to use the phrasing of the ATF) activated by some specific positive emotions may be particularly conducive to higher spirituality.

These results have multiple implications for the study of positive emotions in relation to spirituality. Indeed, they reverse the traditionally studied causal path of religion and spirituality implying positive emotions as compensatory for previous negative experiences. Rather, it seems that positive emotions are not merely the consequences of spirituality, but also antecedents leading to a positive pathway. The induction of positive emotions via an experimental design and the examination of relevant mediators allowed us to test for the latter causal direction.

Moreover, we know that religion/spirituality hold strong connections with prosociality, and experimental research has often shown that an increase in the former leads to the latter (see Saroglou, 2013, for a review). In Study 2, participants observed the good deeds of the founder of a charity, in an elevation video clip, which upheld prosociality as a virtue. Interestingly, this video increased spirituality, which suggests for the first time that an inverse causal direction of prosociality preceding increases in spirituality also exists.

Finally, these results suggest that the capacity of humans to feel self-transcendent positive

emotions is conducive to higher spirituality. Taking a larger perspective, the latter results provide a new perspective on the accoutrements of religion and spirituality (such as architecture, stories of charismatic and/or virtuous leaders, rituals, and music) that, through their abilities to elicit self-transcendent emotions, may provide one of the means through which religion and spirituality endure.

These studies certainly have some limitations that warrant discussion and should be addressed in future research. One limit of the present studies is the small effect size and the fact that some results were only marginally significant. This was for example the case for admiration's effect on spirituality in Study 2. Therefore, these results should be taken as preliminary and in need of replication. However, knowing that beliefs, and particularly spiritual beliefs, are generally considered to be rather stable, even a small increase in spirituality following a short emotional elicitation may be consequential over the long run. Still, we would suggest using stronger emotional elicitation in future research. Our results add to a growing body of research that shows more generally that beliefs may be particularly sensitive to affective influences (see Boden & Berenbaum, 2010; King, Hicks, Krull, & Del Gaiso, 2006, for effects of emotion on meaning in life; or see Frijda, Manstead, & Bem, 2000). They put a renewed emphasis on the power of positive emotions in shaping our beliefs, even very basic and important beliefs such as meaning in life, world and other's benevolence, and spirituality. This may be particularly important given the role of beliefs in shaping human behaviour. As Frijda and colleagues put it, "The influence of emotions upon beliefs can be viewed as the port through which emotions exert their influence upon human life" (2000, p. 1).

Another limit is that effects of positive emotions on spirituality were tested in the very short term and it is therefore impossible to know if they only affected spirituality as a state or as a more enduring trait. Future research should investigate whether self-transcendent positive emotions may affect spirituality over time as a

trait and consequently promote sustained spiritual behaviour. Furthermore, although the findings were consistent across three different cultural contexts, they all come from Christian countries and in particular from the Catholic tradition. There is therefore need for research in other cultural and religious contexts before generalisation. One related limitation of the present studies is that questionnaires were administered in three different languages. We cannot rule out the possibility that constructs are understood somewhat differently in different languages. Even so, our results were in the same direction independent of the language used. Finally, future research should also elucidate whether self-transcendent positive emotions may also increase religiosity, a term defined as more organised and institutionalised beliefs which implies various motivations and is, to some extent, less socially desirable today than is spirituality in many Western countries.

To conclude, we suggest that certain specific positive emotions generate an upward spiral toward greater spirituality, which in turn leads to subsequent experiences of positive emotions. In the present paper, we showed one direction, i.e., from self-transcendent positive emotions to spirituality; and previous literature has shown the other causal direction, from spirituality to positive emotions. Putting the results from the present studies together with those from previous work, we suggest that spirituality can be the result of two very different trajectories. The first is a coping trajectory that goes from negative emotions to positive emotions and health through religiousness and spirituality. The second is a positive growth trajectory, an upward spiral wherein self-transcendent positive emotions help people see the world and others as more benevolent and life as more meaningful, which, in turn, makes them more spiritual and, therefore, more prone to feel positive emotions, perhaps especially in dire circumstances, and to achieve better health outcomes.

Showing that certain positive emotions can elicit spiritual beliefs is crucial, but this is only the beginning. It is important to go further for a deeper understanding of this effect and the underlying processes, which we have only started to investigate in the studies presented. The field is wide open for future research on this scantly explored consequence of positive emotions.

REFERENCES

Algoe, S. B., & Haidt, J. (2009). Witnessing excellence in action: The "other-praising" emotions of elevation, gratitude, and admiration. *The Journal of Positive Psychology*, 4, 105–127.

Benson, P. L., & Spilka, B. (1973). God image as a function of self-esteem and locus of control. *Journal for the Scientific Study of Religion*, 13, 297–310.

Boden, M. T., & Berenbaum, H. (2010). The bidirectional relations between affect and belief. *Review of General Psychology*, 14, 227–239.

Buxant, C., Saroglou, V., Casalfiore, S., & Christians, L.-L. (2007). Cognitive and emotional characteristics of New Religious Movement members: New questions and data on the mental health issue. *Mental Health, Religion & Culture*, 10, 219–238.

Campos, B., Shiota, M. N., Keltner, D., Gonzaga, G. C., & Goetz, J. L. (2013). What is shared, what is different? Core relational themes and expressive displays of eight positive emotions. *Cognition and Emotion*, 27, 37–52.

Catlin, G., & Epstein, S. (1992). Unforgettable experiences: The relation of life events to basic beliefs about self and world. *Social Cognition*, 10, 189–209.

Corsini, S., & Rimé, B. (2010). *Everyday emotional events and basic beliefs*. (Unpublished raw data). Université catholique de Louvain, Louvain-la-Neuve, Belgium.

Cox, K. S. (2010). Elevation predicts domain-specific volunteerism 3 months later. *The Journal of Positive Psychology*, 5, 333–341.

Crumbaugh, J. C., & Maholick, L. T. (1964). An experimental study in existentialism: The psychometric approach to Frankl's concept of noogenic neurosis. *Journal of Clinical Psychology*, 20, 200–207.

Daniels, J. P., & von der Ruhr, M. (2010). Trust in others: Does religion matter? *Review of Social Economy*, 68, 163–186.

Davidson, R. J., Kabat-Zinn, J., Schumacher, J., Rosenkranz, M., Muller, D., Santorelli, S. F., . . . Sheridan, J. F. (2003). Alterations in brain and immune function produced by mindfulness meditation. *Psychosomatic Medicine*, *65*, 564–570.

DeSteno, D., Bartlett, M. Y., Baumann, J., Williams, L. A., & Dickens, L. (2010). Gratitude as moral sentiment: Emotion-guided cooperation in economic exchange. *Emotion*, *10*, 289–293.

Fiedler, K., & Bless, H. (2000). The formation of beliefs and the interface of affective and cognitive processes. In N. H. Frijda, A. S. R. Manstead & S. Bem (Eds.), *Emotions and beliefs: How feelings influence thoughts* (pp. 144–170). Paris: Oxford University Press.

Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology*, *2*, 300–319.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, *56*, 218–226.

Fredrickson, B. L. (in press). Positive emotions broaden and build. In E. Ashby Plant & P. G. Devine, *Advances in experimental social psychology* (Vol. 47). New York, NY, Elsevier.

Fredrickson, B. L., Cohn, M. A., Coffey, K. A., Pek, J., & Finkel, S. M. (2008). Open hearts build lives: Positive emotions, induced through loving-kindness meditation, build consequential personal resources. *Journal of Personality and Social Psychology*, *95*, 1045–1062.

Freud, S. (1928). Humor. *International Journal of Psychoanalysis*, *9*, 1–6.

Frijda, N. H., Manstead, A. S. R., & Bem, S. (2000). *Emotions and beliefs: How feelings influence thoughts*. Paris: Oxford University Press.

Frijda, N. H., & Mesquita, B. (2000). Beliefs through emotions. In N. H. Frijda, A. S. R. Manstead & S. Bem (Eds.), *Emotions and beliefs: How feelings influence thoughts* (pp. 43–54). Paris: Oxford University Press.

Haidt, J. (2000). The positive emotion of elevation. *Prevention and Treatment*, *3*.

Haidt, J. (2003). The moral emotions. In R. J. Davidson, K. R. Scherer & H. H. Goldsmith (Eds.), *Handbook of affective sciences* (pp. 852–870). Oxford: Oxford University Press.

Haidt, J., & Keltner, D. (2004). Appreciation of beauty and excellence. In C. Peterson & M. Seligman (Eds.), *Character strengths and virtues: A handbook and classification* (pp. 537–552). Washington, DC: American Psychological Association.

Hayes, A. F., Preacher, K. J., & Myers, T. A. (2011). Mediation and the estimation of indirect effects in political communication research. In E. P. Bucy & R. L. Holbert (Eds.), *Sourcebook for political communication research: Methods, measures, and analytical techniques* (pp. 434–465). New York, NY: Routledge.

Hicks, J. A., & King, L. A. (2007). Meaning in life and seeing the big picture: Positive affect and global focus. *Cognition and Emotion*, *21*, 1577–1584.

Hood, R. W., Jr., Hill, P. C., & Spilka, B. (2009). *The psychology of religion: An empirical approach* (4th ed.). New York, NY: Guilford Press.

Janoff-Bulman, R. (1992). *Shattered assumptions: Towards a new psychology of trauma*. New York, NY: Free Press.

Keltner, D., & Haidt, J. (2003). Approaching awe, a moral, spiritual, and aesthetic emotion. *Cognition and Emotion*, *17*, 297–314.

King, L. A., Hicks, J. A., Krull, J. L., & Del Gaiso, A. K. (2006). Positive affect and the experience of meaning in life. *Journal of Personality and Social Psychology*, *90*, 179–196.

Koenig, H., King, D., & Carson, V. B. (2012). *Handbook of religion and health* (2nd ed.). New York, NY: Oxford University Press.

Kuiper, N. A., & Martin, R. A. (1993). Humor and self-concept. *Humor: International Journal of Humor Research*, *6*, 251–270.

Lerner, J. S., & Tiedens, L. Z. (2006). Portrait of the angry decision maker: How appraisal tendencies shape anger's influence on cognition. *Journal of Behavioral Decision Making*, *19*, 115–137.

Leuba, J. H. (1912). The development of emotion in religion. *The Harvard Theological Review*, *5*, 524–543.

Malhotra, D. (2010). (When) are religious people nicer? Religious salience and the "Sunday Effect" on pro-social behavior. *Judgment and Decision Making*, *5*, 138–143.

Martin, R. A. (2007). *The psychology of humor: An integrative approach*. Amsterdam: Elsevier.

Morreall, J. (1989). Enjoying incongruity. *Humor: International Journal of Humor Research*, *2*, 1–18.

Neumann, R. (2000). The causal influences of attributions on emotions: A procedural priming approach. *Psychological Science*, *11*, 179–182.

Pargament, K. I. (1997). *The psychology of religion and coping: Theory, research, practice*. New York, NY: Guilford Press.

Park, C. L. (2005). Religion and meaning. In R. F. Paloutzian & C. L. Park (Eds.), *Handbook of the psychology of religion and spirituality* (pp. 295–314). New York, NY: Guilford Press.

Piedmont, R. L. (1999). Does spirituality represent the sixth factor of personality? Spiritual transcendence and the five-factor model. *Journal of Personality, 67,* 985–1013.

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, and Computers, 36,* 717–731.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40,* 879–891.

Roseman, I. J., & Evdokas, A. (2004). Appraisals cause experienced emotions: Experimental evidence. *Cognition and Emotion, 18,* 1–28.

Rudd, M., Vohs, K. D., & Aaker, J. L. (in press). Awe expands people's perception of time and enhances well-being. *Psychological Science.*

Saroglou, V. (2013). Religion, spirituality, and altruism. In K. I. Pargament, J. J. Exline & J. W. Jones (Eds.), *APA handbook of psychology, religion, and spirituality* (Vol. 1, pp. 439–457). Washington, DC: American Psychological Association.

Saroglou, V., & Anciaux, L. (2004). Liking sick humor: Coping styles and religion as predictors. *Humor: International Journal of Humor Research, 17,* 257–277.

Saroglou, V., Buxant, C., & Tilquin, J. (2008). Positive emotions as leading to religion and spirituality. *The Journal of Positive Psychology, 3,* 165–173.

Saroglou, V., & Munoz-Garcia, A. (2008). Individual differences in religion and spirituality: An issue of personality traits and/or values. *Journal for the Scientific Study of Religion, 47,* 83–101.

Saroglou, V., Pichon, I., Trompette, L., Verschueren, M., & Dernelle, R. (2005). Prosocial behavior and religion: New evidence based on projective measures and peer ratings. *Journal for the Scientific Study of Religion, 44,* 323–348.

Schindler, I., Zink, V., Windrich, J., & Menninghaus, W. (2013). Admiration and adoration: Their different ways of showing and shaping who we are. *Cognition and Emotion, 27,* 85–118.

Schnall, S., Roper, J., & Fessler, D. M. T. (2010). Elevation leads to altruistic behavior. *Psychological Science, 21,* 315–320.

Shiota, M. N., Keltner, D., & Mossman, A. (2007). The nature of awe: Elicitors, appraisals, and effects on self-concept. *Cognition and Emotion, 21,* 944–963.

Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods, 7,* 422–445.

Strohminger, N., Lewis, R. L., & Meyer, D. E. (2011). Divergent effects of different positive emotions on moral judgment. *Cognition, 119,* 295–300.

Sundararajan, L. (2002). Religious awe: Potential contributions of negative theology to psychology, "positive" or otherwise. *Journal of Theoretical and Philosophical Psychology, 22,* 174–197.

Van Cappellen, P., & Saroglou, V. (2012). Awe activates religious and spiritual feelings and behavioral intentions. *Psychology of Religion and Spirituality, 4,* 223–236.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scale. *Journal of Personality and Social Psychology, 54,* 1063–1070.

Winterich, K. P., Han, S., & Lerner, J. S. (2010). Now that I'm sad, it's hard to be mad: The role of cognitive appraisals in emotional blunting. *Personality and Social Psychology Bulletin, 36,* 1467–1483.

Wyer, R. S., & Collins, J. E. (1992). A theory of humor elicitation. *Psychological Review, 99,* 663–688.