

# Psychology of Religion and Spirituality

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Online First Publication, October 24, 2011. doi: 10.1037/a0025986

### CITATION

Van Cappellen, P., & Saroglou, V. (2011, October 24). Awe Activates Religious and Spiritual Feelings and Behavioral Intentions. *Psychology of Religion and Spirituality*. Advance online publication. doi: 10.1037/a0025986

# Awe Activates Religious and Spiritual Feelings and Behavioral Intentions

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In two experiments, we investigated the role of awe in activating the association between religiosity/spirituality and related feelings and behavioral intentions. In Experiment 1, the induction of awe (through the recall of a relevant event), but not the induction of pride or a neutral condition, led religious and spiritual participants to endorse a spiritual (Tibet) but not a hedonistic (Haiti) travel destination. In Experiment 2, the induction (through relevant video clips) of (a) awe of nature and (b) awe at childbirth, but not the induction of humor led religious/spiritual people to express, respectively, feelings of oneness with (a) others in general and (b) friends. Implications of these findings, for instance in understanding the role of self-transcendent positive emotions in religious rituals, are discussed.

*Keywords:* positive emotions, awe, religion and spirituality related behavior and feelings

In the psychological research of religion, there is often an implicit tendency to think as if the effects, or at least the associations of religion/spirituality (R/S) with relevant constructs, are relatively stable in time and across situations. For instance, researchers often investigate whether R/S is positively related to prosocial attitudes and behaviors, value hierarchies, moral reasoning, prejudice, or personality traits (Hood, Hill, & Spilka, 2009). Researchers also implicitly presume that once people define themselves as religious or spiritual (R/S), they would, rather invariantly across situations, express R/S feelings, thoughts, and behaviors.

However, studies using social experimental designs with varying experimental conditions suggest that many of the correlates or effects of R/S depend on the specific context, such as the characteristics of the target in the prosocial in-

teraction (Saroglou, in press), the proscribed character of prejudice (or lack thereof), or the cost of a moral action (Batson, Schoenrade, & Ventis, 1993). Other studies have shown that religious expressions become (more) manifest when religious norms, expectations, or beliefs are made salient. For instance, religious people were found to be charitable on Sunday but not on weekdays (Malhotra, 2010); and, extension of prosociality to people in need occurred after activation of a religious but not a secular context (Pichon & Saroglou, 2009). Similarly, religious people subscribe less than nonreligious people to porn sites only on Sunday (Edelman, 2009).

The aim of the present work is to focus on another important contextual factor, that is, the role of positive emotions, in particular awe, in facilitating the expression of relevant feelings and behaviors as a function of R/S. More specifically, we hypothesized that awe facilitates (increases or activates) religious and spiritual people's propensity for spiritual behaviors (Experiment 1) and feelings of closeness with others (Experiment 2). We also hypothesized that these effects are limited to awe and do not extend to two other (non self-transcendent) positive emotions, that is, pride (Experiment 1) and amusement (Experiment 2). We will detail below the rationale for these hypotheses.

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### **Positive Emotions and Religion/Spirituality**

Contrary to substantial research that has focused on the ways negative experiences and emotions (e.g., guilt, anxiety, insecurity of attachment, loss of loved ones, illness, deprivation, terror) lead to R/S, shape R/S experiences, or are regulated by R/S (Hood et al., 2009; Watts, 2007), little is known about the way positive emotions influence R/S. A variety of positive emotions, such as joy, gratitude, awe, wonder, or hope, may result from R/S experiences (Emmons, 2005), and this may explain the connection between R/S and well-being (Fredrickson, 2002; Fredrickson, Cohn, Cofeey, Pek, & Finkel, 2008). Moreover, reversing the causal direction, Saroglou, Buxant, and Tilquin (2008) found in two experiments that the induction of positive emotions (awe in particular) increased participants' level of reported religiosity and spirituality.

In the present paper, we argue that positive emotions may also facilitate the way R/S relates and leads to relevant feelings and behavioral intentions: more specifically, feelings of oneness with others and willingness to undertake a trip to a spiritual destination such as Tibet. Indeed, positive emotions have been found to increase a manner of thinking that is integrative, flexible, and open to information (Isen, Daubman, & Nowicki, 1987), to enhance people's feeling that life is meaningful (King, Hicks, Krull, & Del Gaiso, 2006), to increase the feeling of oneness with others (Waugh & Fredrickson, 2006), and to see both ingroup and outgroup members as belonging to one superordinate group (Dovidio, Gaertner, Isen, & Lowrance, 1995). Religion too, and especially spirituality, implies an alternative perception of reality (Berger, 1997), the belief that life is meaningful (Park, 2005), and empathetic emotions and the feeling that we all belong to large human communities (Fehr et al., 2009; Saroglou, in press). Biographical sources on conversion and religious vocation also suggest that positive emotions play a role in facilitating, if not activating, R/S motives, aspirations, and decisions (Keltner & Haidt, 2003; Sundarajan, 2002).

Positive emotions may thus reasonably be suspected to enhance and facilitate, if not activate the propensity of R/S people to undertake behaviors that express their spiritual aspirations

(such as a spiritual journey) or experience feelings of oneness with others, either proximal or distal.

### **Awe as a Specific Self-Transcendent Positive Emotion**

The above expectations need though to be specified. A recent series of studies suggests that positive emotions should not be treated as a single construct or as similar in valence. Like negative emotions, positive emotions are discrete and differ from (and eventually conflict with) one another with regard to respective elicitors, appraisals, and bodily expressions; they seem to have distinct adaptive functions and lead to different cognitive, emotional, and behavioral outcomes (Fredrickson & Branigan, 2005; Griskevicius, Shiota, & Neufeld, 2010a; Griskevicius, Shiota, & Nowlis, 2010b; Keltner & Lerner, 2010; Shiota, Keltner, & John, 2006). For instance, positive emotions of enthusiasm and amusement tend to facilitate greater acceptance of weak persuasive messages, whereas awe and nurturant love reduce persuasion by weak messages (Griskevicius et al., 2010a). From a personality perspective, dispositional awe mainly reflects cognitive flexibility and openness, whereas dispositional joy or pride primarily reflects emotional stability (Shiota et al., 2006; Shiota, Keltner, & Mossman, 2007).

A possible key distinction between positive emotions lies between self-transcendent emotions (e.g., awe, love, admiration) and those that are self-oriented (e.g., pride, amusement, joy). A key ingredient of the former, among which awe may be considered a prototype, is the positive evaluation of realities other than the self. The latter emotions, rather, put the emphasis primarily on self-enhancement. We therefore advance here a more specific hypothesis than the expectation presented in the previous section: it is not positive emotions in general, but only those that include self-transcendence as a major component that should be relevant for R/S' connection with, and effects on, spiritual behavioral intentions and feelings of oneness with others. We tested this hypothesis by focusing on the emotion of awe and comparing the effects of awe with the effects of the emotions pride and amusement. The specific rationale for focusing on each of these three emotions is provided below.

*Awe* is a feeling of wonder experienced by the self when facing something vaster, greater, beyond current understanding (Keltner & Haidt, 2003). Prototypical elicitors of awe include panoramic views and nature, childbirth, and great works of art (Keltner & Haidt, 2003; Shiota et al., 2007). Awe translates into a distinct facial expression (Shiota, Campos, & Keltner, 2003) and has different elicitors and appraisals from those of pride and amusement as well as a different focus, that is, the stimulus rather than the self (Shiota et al., 2007). This emotion shares many aspects of R/S and related feelings, thoughts, and behaviors, since self-transcendence (including that at the emotional level) seems to be the most central motivation of personal religiousness and spirituality (Batson & Stocks, 2004; Demoulin, Saroglou, & Van Pachterbeke, 2008). Moreover, awe is hypothesized to have the power to transform the self and to bind the individual with broad social entities such as the nation or the human community (Keltner & Haidt, 2003). Based on the above theoretical and empirical evidence, we expected awe to facilitate, if not activate, tendencies to undertake an action in accordance with R/S aspirations (visiting a spiritual destination such as Tibet) and to enhance the experience of feelings of oneness with others.

*Pride* is what we feel after a valued achievement; it functions to facilitate public displays that draw positive attention to oneself and increase one's social status (Tracy & Robins, 2007a and b). Its bodily expressions indicate dominance among animals. It is related to high self-esteem, and in some cases, when pride becomes arrogant, it reflects narcissism and may contribute to interpersonal problems and hostility (Tracy & Robins, 2007a and b). In a way, contrarily to awe, pride's source is not an external stimulus, but personal accomplishments or abilities. There is thus no reason to expect pride to facilitate R/S openness to self-transcending experiences such as undertaking a spiritual journey or feeling oneness with others. If anything, the opposite could be true: pride implies a sense of self-sufficiency, thus possibly preventing R/S people from being willing to participate in self-transcending experiences, be it

through connection with the sacred (travel to Tibet) or humanity (oneness with people).

Finally, *amusement* is the positive emotion experienced during social and cognitive play, most often through humor. Humor can, a priori, be considered as implying self-transcendence since it is typically defined by the enjoyment of incongruity (Morreall, 1989) and implies a different perception of everyday life (Berger, 1997) and the promotion of social bonding with other people (Martin, 2007). However, as already argued (Saroglou, 2002a; Saroglou & Anciaux, 2004), contrary to religion, which elevates reality, humor's incongruity diminishes it (Wyer & Collins, 1992), and several forms of humor establish social barriers and lead to social exclusion (Martin, 2007). Moreover, as Freud (1927/1961) argued, humor is the manifestation of a glorified self. Not surprisingly thus, in previous research, amusement has been found, similarly to pride, to constitute a self-oriented emotion (Shiota et al., 2007). In addition, the spontaneous creation of humor and self- and peer-rated use of humor have been found to negatively relate to religiosity (Saroglou, 2002b, 2004). We thus did not expect amusement to strengthen the association of R/S with endorsement of a spiritual destination and expression of oneness with others.

## Experiment 1

The objective of Experiment 1 was to investigate the hypothesis that awe but not pride will strengthen, if not lead to, the connection between R/S and the behavioral intention to travel to a spiritual destination, that is, Tibet. Buddhism in general is attractive to Westerners with R/S aspirations, even when they come from Christian religious background (Obadia, 1999). Tibet, being the "capital" of Buddhism, is thus a popular spiritual destination. This is especially the case with people from countries with high scores on secularization, like Belgium (Saroglou & Dupuis, 2006), where the two experiments were conducted. In order to guarantee that the "arousal" role of awe, among R/S people, will be specific to a spiritual destination and not an activation of a general willingness to travel to any exotic destination, we also included a measure of willingness to visit Haiti. The study was conducted in Fall, 2009, that is,

before the earthquake of Haiti (January 2010). Therefore, at the moment of the experiment, Haiti was considered a typical destination for enjoyable vacations.

## Method

### Participants

Participants were 86 adults (33 male, 53 female) from the French-speaking part of Belgium. Their ages ranged from 19 to 64 years (mean [ $M$ ] = 35.28, standard deviation [ $SD$ ] = 14.63). They were requested by e-mail to participate in an experiment "about emotions." Recruitment was achieved through the snowball sampling technique beginning with relatives of the first author. The majority of participants were Christians (Catholics) or of a Christian upbringing. Participants were asked to provide, in a single session, responses to an electronic questionnaire available on the University's server and were informed that this would take a maximum of 15 min.

### Procedure

Participants were randomly assigned to one of three conditions. The two experimental conditions were planned to elicit either awe or pride. The control condition was neutral regarding positive emotions. At the start of the online questionnaire, participants were asked to remember a particular event that varied across conditions. In the awe condition, they received the following instruction: "We would like you to remember a particular event during which you were in the presence of a natural landscape that was really beautiful. This might have been a sunset, a prestigious view, or any other moment when, in nature, you felt awe" (instructions adapted from Shiota et al., 2007). In the pride condition, the instruction was as follows: "We would like you to remember a particular event during which you felt pride resulting from an act, a speech or something else that you did by yourself." In both experimental conditions, these instructions were completed by 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 3–6 lines, in the space below, this event and the [awe or pride, depend-

ing on the condition] you felt." In the neutral control condition, participants received the following instruction: "We would like you to remember the last time you went to the movie theater, and to describe in a few lines, in the space below, the path you followed between the time you left your home and the moment when you were seated in the movie theater. Try to remember how you got to the theater and describe it in 3–6 lines." (Note that five additional people took part in the study but they were not included in the analyses either because they recalled an event that was obviously not in correspondence with the instructions or because the event included a strong negative component.) After this recalling and writing, participants, in all conditions, filled in measures of (a) behavioral intentions for travel destinations, (b) religiosity, and (c) spirituality, and were finally thanked for their participation.

### Measures

**Travel destinations.** Participants received the following instructions: "Imagine the following fictitious scenario: you have just won a trip, what destination would you choose?" Then, participants had to rate in two items their willingness to visit Tibet and Haiti, respectively, using a 7-point Likert scale (ratings varied from 1 = *not willing at all* to 7 = *totally willing*). In a pretest we made on 13 different destinations, Tibet was found to be qualified as the most spiritual destination ( $M = 4.93$ ,  $SD = 0.27$ ) and Haiti as the least ( $M = 1.93$ ,  $SD = 1.21$ ), the difference being significant,  $t(13) = 9.54$ ,  $p < .001$ . However, the two destinations were equally attractive (respectively,  $M = 4.14$ ,  $SD = 1.29$ , and  $M = 3.64$ ,  $SD = 1.50$ ),  $t(13) = 0.78$ , nonsignificant ( $ns$ , in all evaluations, a 5-point Likert scale was used). The two behavioral intentions, that is, willingness to visit Tibet and willingness to visit Haiti) were unrelated to each other,  $r = .09$ ,  $ns$ .

**Religiosity.** Participants filled in a measure of personal religiousness composed of the following six items (7-point Likert scale): "Religion is important to me"; "Without God the world would be meaningless"; "The great religions of the world give a message that is useful for everyday life"; "God is important to me"; "God does not exist" (reverse-scored); "Only a nonscientific approach can give a true sense to

the world and to the living being.” This measure (the first five out of the six items) was used in a previous study on religion and positive emotions (Saroglou et al., 2008). Reliability was satisfactory ( $\alpha = .87$ ).

**Spiritual transcendence scale (Piedmont, 1999; french translation by Saroglou et al., 2008).** In that scale, spirituality is understood 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, p. 989). The scale consists of three subscales: universality (a belief in the unitive nature of life; nine items), connectedness (a belief that one is part of a larger human orchestra whose contribution is indispensable in creating life’s continuing harmony; six items), and prayer fulfillment (feelings of joy and contentment that results from personal encounters with a transcendent reality; nine items). We did not include in this study the third subscale because we were interested in a measure where spirituality is distinct from institutional religion. Indeed, prayer fulfillment 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 behaviors (Piedmont, 1999). Reliability was satisfactory ( $\alpha = .88$ ).

**Results**

In order to test for the effect of awe, which we hypothesized would uniquely, with respect to pride, moderate the association between religiosity (or spirituality) and willingness to travel to a spiritual destination (Tibet), we carried out a series of four moderated multiple regressions. In each of them, the three conditions were represented by two dummy-coded variables using the neutral condition as the reference group (for the first dummy variable, awe was assigned a value of 1, and the other conditions 0; for the second dummy variable, pride was assigned a value of 1, and the other conditions 0). We regressed the willingness to travel to Tibet on both dummy-coded variables, religiosity (or spirituality), and the two interaction terms (see Table 1). To ensure that the effects were unique for the spiritual destination, we did the same regression analyses distinctly for willingness to travel to Haiti (see also Table 1).

The results confirmed the hypotheses. Although overall there was no main effect of the induced emotions on willingness to visit Tibet, the latter was predicted by a significant interaction between religiosity and awe ( $\beta = .41, p < .001$ ). Willingness to visit Tibet was also predicted by a significant interaction between spirituality and awe ( $\beta = .30, p < .05$ ). On the

Table 1  
*Moderated Multiple Regression of Emotions, Religious Measures, and Their Interaction on Travel Destinations (Study 1)*

Predictors	Travel destination			
	Tibet		Haiti	
	<i>B</i>	<i>t</i> -test	<i>B</i>	<i>t</i> -test
Religiosity	-.26	-2.08*	-.34	-2.68**
Awe	-.14	-1.42	-.09	-0.89
Pride	-.01	-0.10	-.01	-0.08
Awe × Religiosity	.41	3.69***	.09	0.74
Pride × Religiosity	.13	1.24	.01	1.12
<i>R</i> <sup>2</sup> = .14, .08				
Spirituality	-.01	-0.09	-.16	-1.11
Awe	-.15	-1.52	-.08	-0.76
Pride	.00	0.01	-.03	-0.29
Awe × Spirituality	.30	2.34*	.03	0.25
Pride × Spirituality	-.01	-0.10	.16	1.40
<i>R</i> <sup>2</sup> = .11, .03				

*Note.* *N* = 86. For each emotion, a dummy variable is computed with the target emotional condition coded as 1 and the other two conditions coded as 0.  
\* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

contrary, the interaction of the pride condition with either religiosity or spirituality had no effect on the willingness to visit Tibet; the pride condition acted as the neutral condition. The above significant interactions were unique in predicting willingness to visit Tibet and were not found when computing similar regressions on the willingness to visit Haiti (all  $ps > .16$ ). Finally, for willingness to visit Tibet and Haiti, a main effect of religiosity was found (respectively for Tibet and Haiti  $\beta_s = -.26, -.34$ ;  $ps < .05, .01$ ).

Simple slope analyses clarified the meaning of the significant interactions. As can be seen in Figure 1, in the awe condition, religiosity (up) and spirituality (bottom), as hypothesized, were positively and significantly related to willingness to visit Tibet respective  $\beta_s = .46, .47$ ;  $ps < .01$ . They were unrelated to this outcome in the neutral condition (respective  $\beta_s = -.18, .11$ ;  $ns$ ). Religiosity was even negatively related to the same outcome in the pride condition (respective  $\beta = -.35$ ;  $p = .04$ ).

### Discussion

The hypothesized moderating role of a positive self-transcendent emotion was confirmed. In comparison to an emotionally neutral control condition, elicitation of awe, through the recall of a relevant experience, pushed participants scoring high in religiosity and/or spirituality to express willingness to undertake traveling to Tibet, which is a spiritual destination. This activation effect was not extended to a nonspiritual travel destination (Haiti) and was not independent of participants' religiosity. This finding confirms the inherent affinity theorists have postulated between awe (strictly speaking, a secular emotion) and religion/spirituality, and is in favor of awe's causal or facilitating role with regard to religious and spiritual expressions.

Moreover, as suspected, induction of pride, a nonself-transcendent positive emotion, did not follow awe in the above mentioned effects. This confirms our suspicion that positive emotions which do not imply transcendence of the self, and might even glorify the self at the expense of others (like pride), may have no effects on religious and spiritual attitudes and expressions. In the present study, pride actually had an effect on the nonspiritual destination: it increased, as compared with awe, but also to the neutral

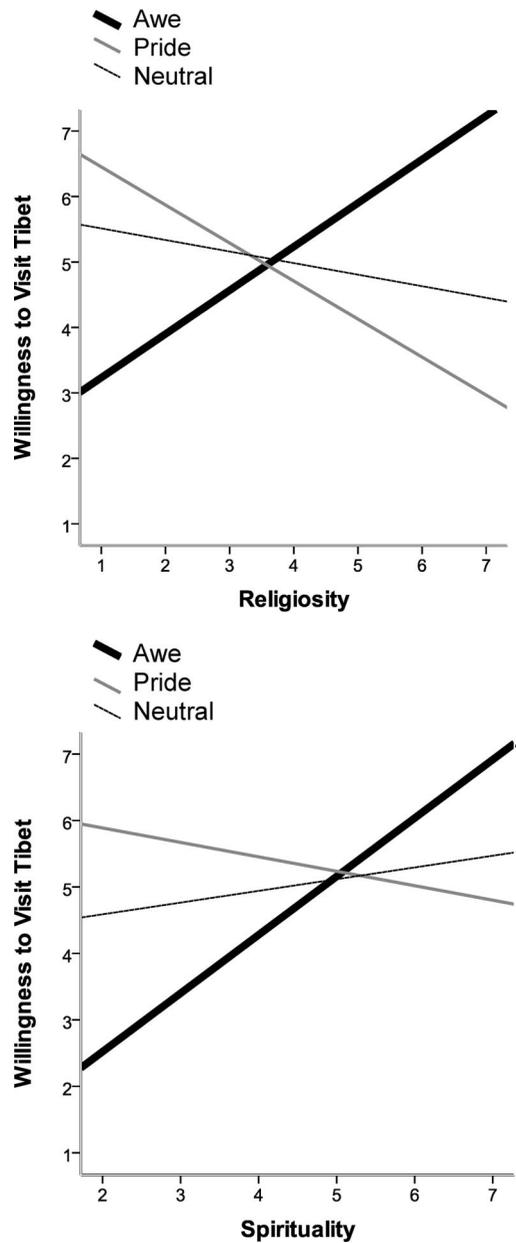


Figure 1. Spiritual behavioral intention (willingness to visit Tibet) as a function of emotions and religiosity (up) or spirituality (bottom)—Study 1.

condition, willingness to visit Haiti. Thus, lack of humility and self-transcendent aspirations seem to be in conflict.

Note, finally, that across conditions, there was a tendency of religiosity to be negatively

associated with willingness to visit Haiti (global  $r = -.24, p = .006$ ). This country was known to be a pleasant, or even hedonistic, destination for vacations (remember that the data were collected previous to the 2010 Haiti earthquake). This may suggest a contrast between religious and spiritual behavioral intentions (activated by awe) and other behavioral intentions (activated by pride) implying hedonistic and materialistic values that are known not to be highly endorsed by religious and spiritual people (Saroglou, Delpierre, & Dernelle, 2004; see also Dy-Liacco, Piedmont, Murray-Swank, Rodgerson, & Sherman, 2009).

## Experiment 2

The aim of Experiment 2 was to replicate and extend Experiment 1 in several ways. First, we focused on another relevant outcome, that is, feelings of closeness with others, a construct that is related less directly to R/S in comparison to spiritual journey. We used a more projective measure of this outcome. Second, we distinguished between two kinds of targets of feelings of oneness: (a) friends, who are proximal targets, and (b) people in general. Such a distinction is particularly important regarding the issue of whether R/S implies empathy and prosociality limited to one's ingroup and proximal targets or extended to humanity as a whole (Saroglou, in press).

Third, we compared induction of awe with induction of a different (from pride) self-focused positive emotion, that is, amusement (humor). Moreover, we distinguished between two kinds of self-transcendent positive emotions: awe of nature and awe at childbirth. These two emotional experiences, despite their strong similarities, differ in some ways (Keltner & Haidt, 2003; Saroglou et al., 2008). The former does not really imply perception of, and interaction, with specific others; this, on the contrary, is the case with the latter. In parallel, in the analyses we distinguished between two components of spirituality, that is, universality, which includes connection to humankind as a whole, and connectedness, which includes commitment to specific others in the community and in the circle of interpersonal relations (Piedmont, 1999).

Finally, the method for inducing emotions and the nature of the sample differed from those

of Experiment 1. In the present experiment, emotions were elicited through relevant videos and the sample was composed of students.

On the basis of the rationale developed in the introduction as well as the results of Experiment 1, we expected the induction of awe to augment or activate the relationship between R/S and oneness with friends and others. Such an arousal effect regarding the connection between R/S and oneness should not be observed when participants were exposed to a humorous video. Finally, given the direct interpersonal character of awe at childbirth and the more holistic, in a way impersonal, character of awe of nature, greater, if not exclusive, affinities were expected (a) between awe at childbirth, connectedness, and oneness with friends, and (b) between awe of nature, universality, and oneness with humankind.

## Method

### Participants

A total of 133 students (15 male, 116 female, 2 not reporting gender) of first- and second-year psychology courses at a French-speaking Belgian University participated in this experiment in exchange for course credit (age:  $M = 19.2, SD = 2.7$ ). The majority of participants were Christians (Catholics) or of Christian upbringing. The study was advertised as an investigation on friendship relations.

### Procedure

Participants arrived at the lab individually and were randomly assigned to one of four conditions, that is, specific emotions induced by the respective video clips: (1) *awe of nature* ( $n = 44$ ), (2) *awe at childbirth* ( $n = 45$ ), and (3) *amusement* ( $n = 44$ ). After being given instructions for the study, participants were left alone to watch one of the video clips; each was of 3-min duration. After the video had finished, participants completed a questionnaire which was left face-down on the table in front of them. Once completed, participants were debriefed and thanked for their participation.

All video clips were taken from Saroglou et al. (2008) where they have been pretested for the emotions elicited. The awe of nature video

included panoramic views of beautiful landscapes with waterfalls, deserts, oceans, large rivers, and high mountains. With no reference to any living being, this video was in a way “impersonal.” The awe at childbirth video depicted a young heterosexual couple that was filmed at many points during the woman’s pregnancy. There were images of both parents during the first sonogram, the birth of the baby in the maternity hospital, and the mother holding her infant in the first minutes after childbirth. This awe video was focused on humans and interpersonal relations. Finally, the amusement video included sketches with a French humorist imitating an old man trying to understand the menu at a fast food restaurant.

The pretest by Saroglou et al. (2008) showed that all three positive emotion videos (amusement and two kinds of awe) induce more pleasure, enjoyment, and emotional intensity as compared with a neutral video. However, the awe of nature and awe at childbirth videos, but not the amusement video, induced, in addition, the emotions of ecstasy, respect, wonder, and humility. Awe at childbirth elicited more tender feelings and affection than awe of nature.

## Measures

**Oneness with friends and people in general.** We used the Inclusion of the Other in the Self Scale (Aron, Aron, & Smolan, 1992) that is a pictorial measure of interpersonal interconnectedness. The scale is composed by diagrams, each representing different degrees of overlap of two circles representing the self and the other. The overlap progresses linearly in seven steps starting with no overlap and ending in almost total overlap. We used this scale in two versions in order to assess oneness of the self with (a) friends and (b) people in general. Participants were told: “Choose the best diagram that describes your relationship between you and your friends,” and “between you and people in general.”

**Religiosity and spirituality.** The same measures of religiosity and spirituality as in Study 1 were administered. Five-point Likert scales were used in this study. Reliability for all scales was satisfactory, that is, for religiosity ( $\alpha = .86$ ), universality ( $\alpha = .71$ ), and

connectedness ( $\alpha = .54$ ). Because of our interest on outcomes that could be specifically related to one dimension of spirituality or the other, we ran separate analyses for the two subscales of spirituality. Indeed, according to the respective definitions and content of the items, the subscale of universality refers to the belief in the unity and purpose of life, and connection with the humankind as a whole. On the contrary, the subscale of connectedness refers to a sense of personal responsibility and commitment to specific others in one’s own community.

## Results

A series of six multiple regression analyses were computed, distinctly for each outcome (oneness with friends and oneness with people in general), and for each religious/spiritual measure (religiosity, spirituality–universality, and spirituality–connectedness). As in Experiment 1, the three conditions were represented by two dummy-coded variables using the amusement condition as the reference group (for the first dummy variable, awe at childbirth was assigned a value of 1, and the other conditions 0; for the second dummy variable, awe of nature was assigned a value of 1, and the other conditions 0). We thus regressed either oneness with friends or oneness with people in general on both dummy-coded variables, the relevant R/S measure, and the two interaction terms (see Table 2).

In line with expectations, oneness with friends was predicted by the interaction between awe at childbirth and religiosity ( $\beta = .22, p < .05$ ) but also connectedness ( $\beta = .19, p = .06$ ). Oneness with people was negatively predicted by the interaction between universality and awe at childbirth ( $\beta = -.19, p = .06$ ). All other regression terms were not significant (all  $ps > .08$ ).

Simple slopes analyses clarified the direction of the significant interactions. As can be seen in Figure 2, in the awe at childbirth condition, religiosity (up left), and connectedness (up right) were positively related to oneness with friends (respective  $\beta$ s = .30, .28;  $ps = .025, .03$ ). They were unrelated to this outcome in the other two conditions. Universality, in the awe at childbirth condition, (see Figure 2, bottom) was unrelated to oneness with people in general

Table 2  
*Moderated Multiple Regression of Emotions, Religious Measures, and Their Interaction on Feelings of Oneness (Study 2)*

Predictors	Oneness with:			
	Friends		People in general	
	<i>B</i>	<i>t</i> -test	<i>B</i>	<i>t</i> -test
Religiosity	-.08	-0.53	.14	0.87
Awe of nature	.09	0.94	.09	0.94
Awe at childbirth	.13	1.28	.07	0.73
Awe of nature × Religiosity	.22	1.66*	.08	0.60
Awe at childbirth × Religiosity	.02	0.19	.01	0.06
<i>R</i> <sup>2</sup> = .04, .05				
STS-connectedness	-.07	-0.43	-.01	-0.02
Awe of nature	.07	0.66	.09	0.81
Awe at childbirth	.12	1.10	.07	0.66
Awe of nature × STS-connectedness	-.08	-0.53	-.03	-0.18
Awe at childbirth × STS-connectedness	.19	1.53 <sup>†</sup>	.08	0.66
<i>R</i> <sup>2</sup> = .05, .01				
STS-universality	.11	0.75	.17	1.14
Awe of nature	.09	0.90	.11	1.12
Awe at childbirth	.13	1.25	.08	0.76
Awe of nature × STS-universality	-.11	-0.82	.04	0.30
Awe at childbirth × STS-universality	-.17	-1.46	-.19	-1.56 <sup>†</sup>
<i>R</i> <sup>2</sup> = .03, .05				

*Note.* *N* = 133. For each emotion, a dummy variable is computed with the target emotional condition coded as 1 and the other two conditions coded as 0. STS: Spiritual Transcendence Scale (Piedmont, 1999).

<sup>†</sup> *p* = .06. \* *p* < .05.

(β = -.19, *ns.*): however, in the awe of nature condition, universality was positively related to oneness with people in general (β = .24, *p* = .06).

### Discussion

As expected, in comparison to the neutral and/or amusement conditions, induction of awe (through relevant video clips) pushed religious and spiritual participants to express high feelings of oneness with others. This is in line with Experiment 1, since it was the self-transcendent positive emotion (awe), but not the nonself-transcendent one (amusement) that had the expected effects on religion- and spirituality-related feelings.

The results in this experiment were more specific, with respect to the results from Experiment 1, to the kind of awe and the religious/spiritual dimension concerned. Awe at childbirth seemed to activate, among religious people, feelings of oneness with proximal targets (friends) but not necessarily oneness with people in general. This was also the case for people scoring high in connectedness, a dimension of spirituality that fo-

cuses on our relations with specific others and known people, alive or dead (see two sample items: “I am a link in the chain of my family’s heritage, a bridge between past and future”; “It is important for me to give something back to my community”). Religiosity, and probably specific forms of spirituality, is particularly concerned with feelings of warmth toward relatives and members of our extended, cultural kinship (Saroglou, in press). Awe at childbirth may thus be powerful in activating such feelings as a function of religion/spirituality.

Awe of nature (induced through video presentation of beautiful landscapes) functioned in a slightly different way. It seemed to activate among people scoring high in universality, feelings of oneness with people in general, but not necessarily oneness with friends. Very likely, awe of nature is powerful in activating the connection between the universalistic dimension of spirituality and closeness with humankind, the world, and life taken as a whole. Here are two powerful sample items of the universality subscale: “Although individual people may be difficult, I feel an emotional bond with all of

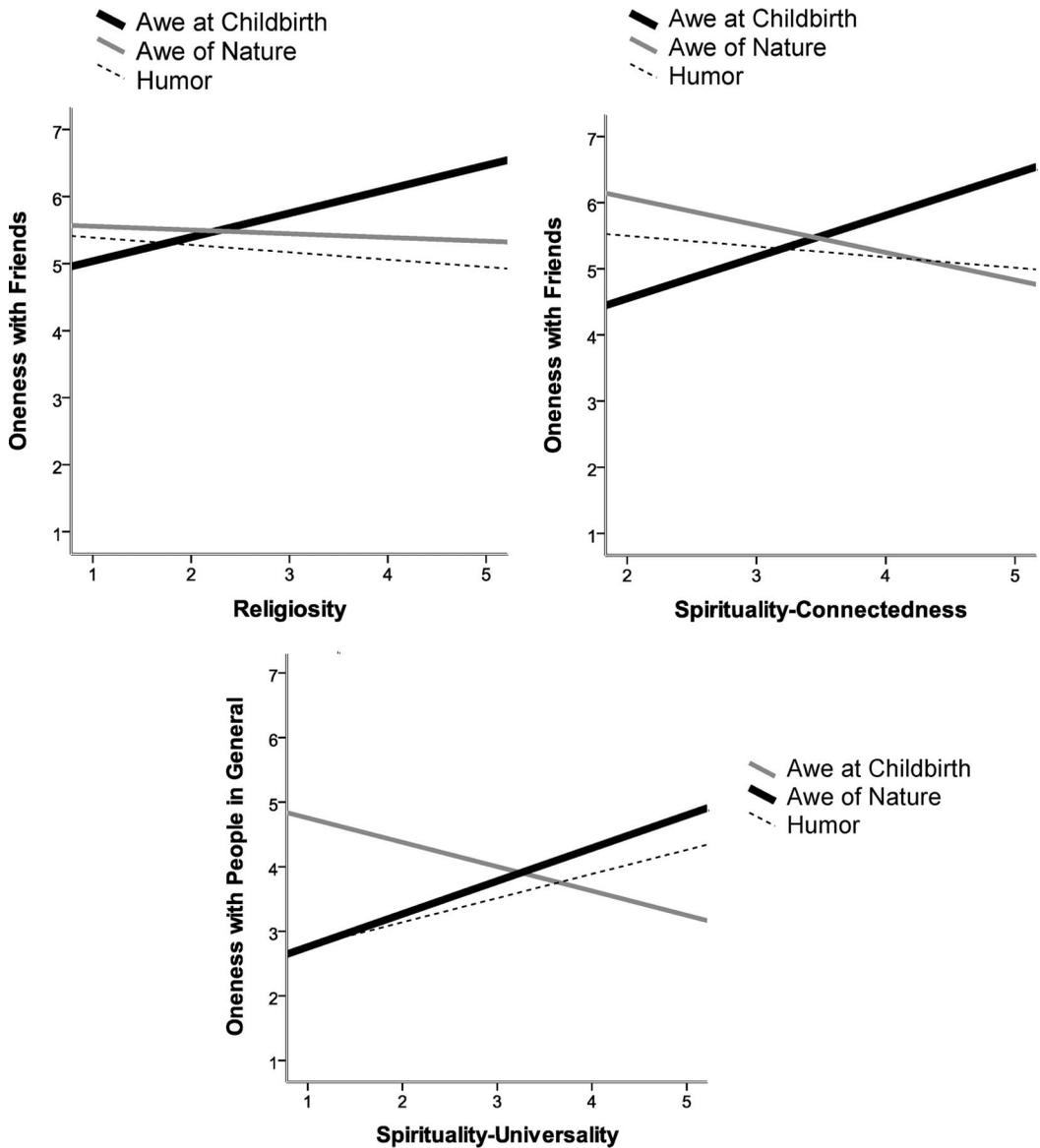


Figure 2. Oneness with others as a function of emotions and religiosity–spirituality: oneness with friends as a function of emotions and religiosity (up left) or spirituality–connectedness (up right); oneness with people in general as a function of emotions and spirituality–universality (bottom)—Study 2.

humanity”; “I feel that on a higher level all of us share a common bond.”

In sum, our results suggest a correspondence between impersonal versus interpersonal forms of awe and universalistic (in a way impersonal) versus embodied in interpersonal relations forms of religious and spiritual attachment to others.

Amusement does not seem to play a role with respect to the connection between religion/spirituality and oneness with proximal or distal others. This, as argued in the introduction, can be attributed to the fact that amusement does not necessarily mean openness to a broader or greater reality.

## General Discussion

Across two experiments, and using different positive emotions, methods of inducing emotions, populations, and study environments, evidence was provided for awe's power with regard to religion and spirituality-related feelings and behavioral intentions. It was only when awe, a self-transcendent emotion, was induced, but not in the neutral condition (Experiment 1) or when nonself-transcendent emotions (pride or humorous amusement, Experiments 1 and 2) were induced, that religion and spirituality were positively related to the willingness to visit a spiritual destination (Tibet) and feelings of self-other overlap with friends or humanity.

This study provides experimental evidence in favor of the hypothesized transformative power of awe (Keltner & Haidt, 2003) and strengthens previous anecdotal evidence from biographical sources (Keltner & Haidt, 2003; Sundarajan, 2002). It also confirms our additional hypothesis that, with respect to R/S, not all positive emotions are effective in shaping related thoughts, aspirations, and behaviors. This inclusion of a self-transcendent dimension, that is, the focus on realities which are perceived as vaster and greater than the self (awe) rather than a focus on, and glorification of, the self (pride, humor), seems to be a necessary condition for a positive emotion to effectively lead to specific outcomes that are a function of religiosity and spirituality.

Note that we had hypothesized that awe will facilitate (increase or activate) the connection between R/S and relative feelings and behavioral intentions. In fact, in both experiments, awe activated these connections. This study suggests that some of the well-known correlates or effects of religion (which are most often of modest size) may be highly dependent on contextual features. This is in line with two recent studies. In the first one, religious Christian people were not found to be prosocial in general, but only after having attended Sunday mass (Malhotra, 2010). In the second one, similarly, it is on Sunday, but not on other weekdays that religious service attendees differ from nonreligious peers by subscribing less to porn sites (Edelman, 2009).

The present experiments indicate the important role of (some) positive emotions in activating, among R/S people, aspirations and feelings

that are in correspondence with, if not resulting from, their faith and spirituality. These findings may be of interest for understanding the specific role religious rituals (chants, sermons, symbols, prayer, ritual acts, reading sacred texts) have in activating not only intellectually, but also emotionally, R/S motivations, projects, and decisions. This can explain why, although God is believed to be everywhere, and spiritual decisions can be taken at any moment, humans, across religions, have created formal moments and spaces that provide emotional arousal to R/S aspirations. In a similar vein, the present experiments suggest that religiosity and spirituality, like other individual differences (see Leary & Hoyle, 2009; Rhodewalt, 2008), may not constitute fixed attitudes and stable "ways of being," but are importantly sensitive to the context, including emotion.

Interesting additional information was provided in Experiment 2, when we distinguished between two dimensions of spirituality, that is, universality and connectedness (as defined in the Spiritual Transcendence Scale; Piedmont, 1999), between two kinds of awe elicitors (nature and childbirth), and between two kinds of feelings (oneness with all human beings, and oneness with proximal targets, i.e., friends). Two pathways were attested. On one hand, participants endorsing universality (belief in the unitive nature of life and attachment to humankind as a whole) showed high feelings of oneness with all humans (but not necessarily friends) after they were exposed to the awe video of pure nature. On the other hand, participants endorsing connectedness (belief in life's harmony through responsibility toward familiar others and the community) showed high feelings of oneness with friends (but not necessarily with humans in general) after being exposed to the awe of childbirth video. Although the two spirituality dimensions are interrelated (Piedmont, 1999), they may translate specific forms/components of spirituality (i.e., a more impersonal and universalistic version vs. a more embodied to concrete interpersonal relationships version), and thus have distinct consequences.

An important limitation of these experiments is that, although the induction of emotions was efficient, religiosity, behavioral intentions to travel, and feelings of oneness were not measured both pre- and postexperimentally. Thus, although we adopted a description of the results

that highlights how emotions shape religious/spiritual people's behavioral intentions and feelings, a different causal pathway is not excluded. Awe may push people who have high spirituality-like aspirations (e.g., willingness to visit Tibet), or are predisposed to feel close to others, to orient themselves to be religious and spiritual. Another limitation was that some findings of Experiment 2 were only marginally significant at  $p = .06$ . Nevertheless, we accepted them rather than taking the risk of Type II error (rejecting true findings), because they importantly replicate findings of Experiment 1.

Finally, future research should go deeper and investigate the specific cognitive, evaluative, and motivational processes that can explain the present findings. One possible explanation is that, if positive emotions facilitate holistic attentional processing and enhance the individual's ability to see the "big picture" (Basso, Scheff, Ris, & Dember, 1996; Fredrickson & Branigan, 2005), awe may be particularly effective in evoking "big picture" thinking among people who, by their R/S, are prone to holistic thinking (Colzato et al., 2010). A second, complementary, explanation could be related to the fact that current emotions lead individuals to more quickly categorize stimuli that are congruent with the current emotional state, but not those that are incongruent (Niedenthal, 2008). Under the emotion of awe, R/S people may thus be quicker in categorizing stimuli as Tibet, friends, and humanity as congruent with that emotion and their faith/spirituality. This could explain why, in Experiment 1, the irrelevant stimulus of visiting Haiti was not affected, among R/S participants, by the emotion of awe.

Investigating the role positive emotions play in shaping R/S experiences and R/S-related thoughts, feelings, and behaviors constitutes a fascinating research agenda for disciplines such as psychology of emotions, positive psychology, and psychology of religion and spirituality. The present work suggests that it is worthy to pursue this direction if we want to fully understand the interaction between individual dispositions and contextual factors, including emotion.

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Received October 12, 2010

Revision received July 14, 2011

Accepted August 22, 2011 ■