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The Social Significance of Spirituality: New Perspectives on the Compassion–Altruism Relationship

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In the current research we tested a comprehensive model of spirituality, religiosity, compassion, and altruism, investigating the independent effects of spirituality and religiosity on compassion and altruism. We hypothesized that, even though spirituality and religiosity are closely related, spirituality and religiosity would have different and unique associations with compassion and altruism. In Study 1 and 2 we documented that more spiritual individuals experience and show greater compassion. The link between religiosity and compassion was no longer significant after controlling for the impact of spirituality. Compassion has the capacity to motivate people to transcend selfish motives and act altruistically toward strangers. Therefore, we reasoned that spirituality (but not religiosity) would predict altruistic behavior and that compassion would help explain this link. Indeed, in Studies 3, 4, and 5 we found that more spiritual individuals behaved more altruistically in economic choice and decision-making tasks, and that the tendency of spiritual individuals to feel greater compassion mediated the spirituality-to-altruism relationship. In contrast, more religious participants did not consistently feel more compassion nor behave more altruistically. Moreover, in Studies 3 and 4 we found that the broader traits of Agreeableness, Openness, and Extraversion did not help explain why more spiritual individuals behaved more altruistically. Our findings argue that spirituality—above and beyond religiosity—is uniquely associated with greater compassion and enhanced altruism toward strangers.

Keywords: spirituality, religion, compassion, altruism, behavioral economics

Spirituality . . . [is] concerned with . . . love and compassion, patience, tolerance, forgiveness, contentment, a sense of responsibility, a sense of harmony (*Ethics for the New Millennium* by the Dalai Lama; Lama, Norman, & Wong, 1999, p. 22).

"Compassion" means "to endure [something] with another person," to put ourselves in somebody else's shoes, to feel her pain as though it were our own, and to enter generously into his point of view. That is why compassion is aptly summed up in the Golden Rule, which asks

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> us to look into our own hearts, discover what gives us pain, and then refuse, under any circumstance whatsoever, to inflict that pain on anybody else. Compassion can be defined, therefore, as an attitude of principled, consistent altruism (*Twelve Steps to a Compassionate Life* by Karen Armstrong, 2010, p. 9).

Why do humans behave altruistically? Why do we stay up late comforting a friend or donate to charities? This is an ancient question, stretching back to Aristotle. Several different modern theories have attempted to explain altruism. Kin selection implies that we may be more likely to help individuals who are genetically similar to us (Hamilton, 1964). According to group selection accounts, groups with more altruists will fare better over time (Sober & Wilson, 1998). The theory of reciprocal altruism contends that altruism is evolutionarily beneficial because helping others, although costly, might benefit the altruist in the future. In other words, people give in order to receive; they are more likely to help those who can help them in the future (Trivers, 1971). According to indirect reciprocity, altruists advertise their inclination to cooperate and, thus, attract future help from others; people give in order to gain an altruistic reputation and thereby encourage future help from third parties (Alexander, 1987).

Although useful, these theories do not fully explain why individuals would behave altruistically toward strangers in anonymous contexts in which there is little chance of future reciprocity or reputational gain. Such situations, although seemingly artificial, are actually common events in modern life. For example, individuals anonymously donate to areas devastated by earthquakes or tsunamis, they offer advice and condolences to strangers online or in airports, and they donate blood. More recently, research has shown that people who hold prosocial values are more likely to behave altruistically under such anonymous circumstances, but more egotistical individuals are less likely to do so (Simpson & Willer, 2008). Thus, other-oriented individuals may be more altruistic even when there is no opportunity to give to a close relative, gain help from the target in the future, or enhance their own altruistic reputation.

As suggested in Karen Armstrong's quote above, compassion may be another important reason for altruism. In a sense, Darwin predicted this when he noted that altruistic acts may be due to the "strength of the social or maternal instincts" (Darwin, 1871, p. 75). People feel compassion after seeing another suffer and consequently feel motivated to help, even at a personal cost to themselves. Importantly, compassion is different from responding to others' suffering with personal distress. Distress makes individuals focus on their own needs, try to reduce their own suffering, and often makes it less likely that individuals will behave altruistically (Goetz, Keltner, & Simon-Thomas, 2010). Compassion, on the other hand, is an emotional response that tunes individuals into the needs of others and prompts selfless and helping behavior (Batson, Floyd, Meyer, & Winner, 1999; Batson & Shaw, 1991; Eisenberg et al., 1989). Not surprisingly, the self-reported experience of compassion predicts increased volunteerism (Bekkers, 2005; Omoto, Malsch, & Barraza, 2009), agreeing with policies aimed at helping the poor or needy (Smith, 2009), and more altruistic behavior in economic games (Batson et al., 1999). These findings converge on the notion that compassion, by prompting the tendency to care for and engage with others in need, underlies altruistic and prosocial behavior (Batson & Shaw, 1991). Taken together, these theories suggest that in situations in which tit-for-tat reciprocity and reputational benefits are absent, people who value prosociality or feel compassion should behave more altruistically toward strangers.

Religiosity, Compassion, and Altruism

Several lines of evidence suggest that more religious individuals are more prosocial, tend to feel more compassion, and, therefore, should behave more altruistically. In her survey of different religious traditions, historian Karen Armstrong (2006) contends that empathy and compassion are cornerstones of the world's religions. Central to the Judeo-Christian tradition is the teaching to "love your neighbor as yourself" (Leviticus 19:18) and to "do to others what you would have them do to you" (Matthew 7:12). The Jewish value of *tikkun olam* (repairing the world) is often interpreted to encompass the repairing of social bonds and the building of community. Mohammed is quoted as saying, "None of you really has faith unless he desires for his neighbor what he desires for himself" (Lutfiyya & Churchill, 1970, p. 58). Theorists also suggest that religions exist in order to make people prosocial. By subordinating our self-interest and encouraging kindness and generosity toward group members, religions improve the chances of survival for group members (Sober & Wilson, 1998; Wilson, 2003).

In agreement with the idea that religious individuals should be more prosocial, when asked how their religion influenced their behavior, people who identified as religious described that it encouraged them to be ethical, fair, helpful, and kind toward others (Woods & Ironson, 1999). More religious participants have also reported feeling more "compassionate love" for close others and strangers (Sprecher & Fehr, 2005), have a more altruistic loving style (agape; Hendrick & Hendrick, 1987), and, according to two meta-analytic reviews, are higher on Agreeableness (a trait defined by cooperativeness; Saroglou, 2002) and Benevolence (a value related to the desire to help others; Saroglou, Delpierre, & Dernelle, 2004). Scholars suggests that religions encourage the idea of behaving properly in front of God (Norenzayan & Shariff, 2008), and, therefore, might increase prosociality in situations in which individuals cannot enhance their reputation in the eyes of other people (but their behavior is under observation by God). Thus, these lines of evidence suggest religious individuals might feel more compassion and behave more altruistically, even in anonymous situations with strangers and without the opportunity for reciprocity or reputational advantages in the eyes of other people.

On the other hand, historical analyses often posit that religious differences may give rise to "us" versus "them" distinctions, which underlie conflict (Harris, 2005; Hitchens, 2008). Similarly, scholars have suggested that religion should encourage progroup solidarity and in-group altruism (Durkheim, 1915; Wilson, 2003), for example, by encouraging a shared identity with others (Graham & Haidt, 2010). According to Social Identity theory (Tajfel & Turner, 1986) if people categorize themselves into groups, they will then identify with their in-group, favorably compare their own group to other groups, and feel distinct from those outside their group. Unfortunately this group identification and in-group preference may then lead to prejudice toward out-group members. Thus, ironically, the ability of religion to help make groups more cohesive and cooperative and, therefore, more powerful against less

cohesive groups (Haidt, 2008), may make it less likely that religious individuals will behave altruistically toward strangers in an anonymous context. Similarly, more religious individuals are less likely to value Universalism, the interest in protecting all people and nature (Saroglou et al., 2004), and attending religious services predicted greater support for martyrdom and hostility toward an out-group (Ginges, Hansen, & Norenzayan, 2009). Research has found that more religious individuals do not leave larger tips at restaurants (Grossman & Parrett, 2010) and do not consistently behave in economically altruistic ways, although they do tend to have an in-group bias, behaving more altruistically toward other religious individuals (Ahmed & Salas, 2011). Other research suggests that helpfulness in religious participants is better explained by wanting to gain praise or avoid guilt, instead of being driven by greater compassion or prosocial motives (Batson et al., 1989; Batson, Schoenrade, & Ventis, 1993). Taken together, this evidence would predict that more religious individuals might not tend to feel more compassion and that they might not behave more prosocially toward strangers in an anonymous context with no chance of reciprocity or the ability to enhance their reputation.

Spirituality, Compassion, and Altruism

A concept that is closely tied to—but separate from—religion, is spirituality. Spirituality is derived from the Latin word *spiritus*, meaning breath, and often refers to the personal and emotional aspects of religion, or an emotional connection with something transcendent or sacred (Heelas & Woodhead, 2005; Johnstone, Yoon, Franklin, Schopp, & Hinkebein, 2009; Saucier & Skrzypinska, 2006; Vaillant, 2008; Zinnbauer, Pargament, & Scott, 1999). The religious experience, by contrast, is rooted in the rituals, behaviors, practices, and beliefs of the sacred within the traditions of a religious community (Saucier & Skrzypinska, 2006). As both spirituality and religiosity are concerned with sacredness and divinity, they have often been considered to be similar enough as not to warrant separate study (Hill & Pargament, 2003; Pargament, 1999). Indeed, it is common for people to identify themselves as both spiritual and religious; in five large surveys of people from the United States, over 60% of people identified themselves as both spiritual and religious (Marler & Hadaway, 2002), and in a large sample of American participants, the two concepts were quite correlated (Idler et al., 2009).

However, nonexperts do make meaningful distinctions between spirituality and religiosity (Hill et al., 2000; Walker & Pitts, 1998; Woods & Ironson, 1999; Zinnbauer et al., 1997). For example, some people identify themselves specifically as spiritual but not religious (Saucier & Skrzypinska, 2006). The idea that religiosity and spirituality are distinct is not a new one. William James (1902) described what we would now call spirituality as the first-hand, emotional experience of religion. What we would call religiosity he thought of as the second-hand experience of religion.

Although the evidence linking religiosity with compassion and altruism seems mixed, the preliminary evidence tying spirituality with compassion and altruism may be more consistent. In the opening quote above, the Dalai Lama suggests that spirituality is "concerned with . . . compassion" (Lama et al., 1999, p. 22). Similarly, George Valliant has hypothesized that spirituality is connected to "feelings of . . . sympathy, empathy, compassion, involvement, tenderness, and gratitude" (Valliant, 2008, p. 16). When defining what spirituality means to them, individuals use words that refer to notions of loving connection with others and altruism (Greenwald & Harder, 2003). Similarly, self-identified spiritual individuals describe that spirituality makes them feel loving and respectful toward others (Woods & Ironson, 1999), they feel more "compassionate love" for close others and strangers (Sprecher & Fehr, 2005), they report behaving more altruistically and feeling more empathy (Saroglou, Pichon, Trompette, Verschueren, & Dernelle, 2005), and they are more likely to hold Universal values (to believe that kindness and generosity should be extended to all people; Saroglou et al., 2005). In summary, these lines of evidence suggest that spiritual individuals value prosociality, might experience more compassion, and might behave in more altruistic ways, especially in contexts that are anonymous and do not allow for reciprocity or reputational advantages. Moreover, their tendency to feel compassion might then help explain why more spiritual individuals might behave more altruistically. Notably, a clear test of these ideas has not previously been advanced.

Separating Spirituality, Religiosity, and Prosociality

Research on religiosity and spirituality sometimes measures the two simultaneously. For example, a popular measure for indexing spirituality asks explicitly about both religion and spirituality with no items assessing spirituality only (Underwood & Teresi, 2002). Items include, "I find strength in my religion or spirituality" and "I find comfort in my religion or spirituality." Other items on the scale measure aspects of prosociality such as "I feel a selfless caring for others" and "I accept others even when they do things I think are wrong." Thus, although this measure has been associated with compassionate love for close others and strangers (Sprecher & Fehr, 2005) and prosocial behavior (Bonner, Koven, & Patrick, 2003; Smith, 2009), it is unclear if this effect is simply due to the fact that the measure of spirituality itself also assesses aspects of prosociality.

Similarly, several priming studies have found that exposing participants to spiritual and religious concepts leads to greater prosociality. The primes themselves, however, were a mix of spiritual and religious concepts. In one study, the words used were "spirit," "divine," "God," "sacred," and "prophet" (Norenzayan & Shariff, 2008). In the other study, participants were primed with sentences that included the words "spiritual," "divine," "holy land," "God," and "prophet" (Ahmed & Salas, 2011). By failing to prime spirituality and religiosity separately, this research leaves unanswered the question of whether the effects on prosociality were due to spirituality, religiosity, or both.

Therefore, we suggest that in order to clarify the links between spirituality, religiosity, compassion, and altruism, spirituality must be measured separately from religiosity. Furthermore, the unique and independent effects of spirituality and religiosity should be assessed. By examining spirituality, controlling for the effect of religiosity, we can gain a clearer understanding of any independent effects that spirituality might have on compassion and altruism. At the same time, we believe it is critical to better understand how religiosity, controlling for the effects of spirituality, might relate to compassion and altruism.

The Current Investigation

In the following research we test whether more spiritual or religious individuals tend to feel greater compassion and whether they are more likely to behave altruistically when the behavior is anonymous, the target of the altruism is unknown and cannot reciprocate, and there is little chance for the altruism to improve the giver's reputation. As compassion encourages other-orientation and the desire to help, we hypothesize that compassion should help explain any relationship between spirituality or religiosity and altruism; more spiritual or more religious individuals, we reason, may behave altruistically because they tend to feel more compassion.

We hypothesize that, even though they are closely related and often highly connected, spirituality and religiosity might have different and unique associations with compassion and prosociality. Prior research is limited in that it often conflates the two constructs of spirituality and religiosity. As there is good reason to suggest that spirituality and religiosity are actually somewhat distinct and should be separated in empirical studies, this is an important advance of the current research.

Moreover, in the present research we were interested in measuring religiosity and spirituality using focused, one-item, face-valid measures ("How religious are you?" and "How spiritual are you?") following past research (Fisher, 2009; Gorsuch & McFarland, 1972; Idler et al., 2009; Saroglou & Galand, 2004; Schwartz & Huismans, 1995; Sprecher & Fehr, 2005). Although there are multi-item measures of both spirituality and religiosity, as discussed above, many conflate the measurement of religiosity, spirituality, and prosociality. These more focused measures avoid that problem. In other words, we were explicitly interested in understanding the altruism and compassion of self-identified religious and spiritual individuals, not just those who might score high on a diverse, multiconcept measure of religiosity or spirituality. In addition, not only are one-item scales often used to measure global spirituality and religiosity, previous research has found that one-item scales in other domains such as health, work satisfaction, and self-esteem, are both reliable and valid (DeSalvo et al., 2006; Robins, Hendin, & Trzesniewski, 2001; Wanous & Hudy, 2001; Wanous & Reichers, 1996; Wanous, Reichers, & Hudy, 1997).

Research and theory suggest that in situations in which tit-for-tat reciprocity and reputational benefits are absent, people who value prosociality or feel compassion should behave more altruistically toward strangers. As spirituality has been partially linked to prosocial attitudes, we hypothesize that more spiritual individuals might be more likely to tend to feel compassion and to behave altruistically. Because compassion has the capacity to motivate people to transcend selfish motives and encourage altruism toward strangers, we reason that compassion might help explain the possible relationship between spirituality and altruism. As past research has found a mixed relationship between religiosity and prosocial attitudes and behavior, we do not expect there to be a strong and reliable link between how religious individuals report themselves to be and their tendency to feel compassion or behave altruistically.

We conducted several studies to test these hypotheses. First, in Study 1, as past measurement of spirituality and religiosity has not always measured these concepts independently, we clarified the meaning of our focused measures of spirituality and religiosity. Then, we tested whether more spiritual or religious individuals would tend to report feeling greater compassion. This research provided a preliminary test of our primary hypothesis by allowing us to understand if spirituality, even after controlling for religiosity, would be related to greater compassion. This study also enabled us to test whether religious individuals, especially when controlling for their level of spirituality, would report feeling more compassion. Next, in Study 2 we tested if more spiritual or religious individuals would not only report that they tend to feel more compassion, but also that they would show more nonverbal compassion in a compassion mood induction. This study allowed us to go beyond self-report, and to assess compassionate behavior. In Study 2 we also measured self-reported and behavioral indicators of personal distress when faced with others' suffering. We reasoned that if more spiritual or religious individuals are more likely to behave altruistically, they should feel and show compassion but not distress when coping with others in need.

The last three studies were intended to test whether more spiritual or more religious individuals would behave more altruistically in an anonymous context with no chance of reciprocity or the chance to enhance one's reputation. The three studies also allowed us to assess if the tendency to feel compassion helped explain any link to altruism. More specifically, we hypothesized that more spiritual individuals (rather than more religious individuals) would tend to feel more compassion and that this would partially explain their greater levels of altruism. In Study 3 we tested this idea using a hypothetical altruism task. In Study 4 we used a test of pure economic altruism, the dictator task, in which participants could choose to give money to a stranger, at a cost to themselves. In Study 5, we measured the tendency to be altruistic toward multiple strangers.

Previous evidence suggests that altruism toward strangers in an anonymous context should be greater for prosocial individuals (Simpson & Willer, 2008). Building on this and other past research linking compassion and altruism (Batson & Shaw, 1991; Goetz et al., 2010), in Studies 3–5 we assessed whether greater compassion would a plausible link between spirituality or religiosity on the one hand and altruistic behavior on the other. To our knowledge, this is the first research to test a comprehensive model of spirituality, religiosity, compassion, and altruism, and the first to assess the independent effects of spirituality and religiosity on compassion and altruism.

Study 1: Validation of Spirituality and Religiosity Measures; Link Between Spirituality and Compassion

Given the central aim of the present investigation, to document whether more spiritual or religious individuals feel more compassion and behave more altruistically, in Study 1 we sought to validate and clarify the meaning of our global spirituality and religiosity measures, which were then used in all subsequent studies. Toward this aim, we relied on factor analyses of spiritual and religious attitudes and practices, on the assumption that two main factors would emerge, one representing spirituality and the other religiosity. Building upon these results, we then tested whether these measures of spirituality and religiosity predicted distinct, fine-grained assessments of spiritual and religious attitudes and practices.

Our second interest in Study 1 was to test the independent effects of spirituality and religiosity on compassion. Secondarily, we examined whether spirituality and religiosity were related to other prosocial emotions. In addition, we controlled for positive affect, as previous research has established that spirituality, more than religiosity, is associated with feeling positive emotions (Ellison & Fan, 2008), and engendering positive emotions can increase feelings of spirituality (Saroglou, Buxant, & Tilquin, 2008). Thus, overall we aimed to validate and clarify our measurements of spirituality and religiosity, and then to test their link to prosocial emotions, especially compassion.

Method

Participants and procedure in a Web sample (Sample A). One-hundred and 49 individuals participated through Amazon's Mechanical Turk (55 men, 93 women; ages 18–81, $M = 36.53$, $SD = 12.91$; 120 were European American, 15 were Asian American, five were African American, and the rest were of other or mixed ethnicity). Sixty-seven were Christian, five were Buddhist, seven were Jewish, one was Muslim, six were Hindu, 61 were not religious (atheist, agnostic, or spiritual but not religious), and eight were some other religion (participants could choose more than one category). Participants recruited through this online service are more representative of the United States population than participants in typical online samples (Buhrmester, Kwang, & Gosling, 2011). Participants took part in return for pay. All were from the United States and 98% or more of their participation in previous online tasks at Amazon had been positively evaluated. Participants answered self-report items online.

Participants and procedure in a nationally representative sample (Sample B). We analyzed information gathered from 3,481 participants from the 2008 General Social Survey (downloaded from the Association of Religion Data Archives, for details see Davis & Smith, 1992). The General Social Survey is conducted by the National Opinion Research Center, and it is designed to cover a nationally representative sample of Americans (1,541 men, 1,940 women; ages 18–89+, $M = 48.16$, $SD = 17.12$; 2,691 were White, 101 were Asian, 477 were African American, and the rest were of another ethnicity; 1,781 were Protestant, 826 were Catholic, 104 were Christian, 14 were Orthodox Christian, 32 were Buddhist, 60 were Jewish, 23 were Muslim, 15 were Hindu, 575 stated no religious preference, and the rest were some other religion or did not answer the question).

Participants and procedure in an undergraduate sample (Sample C). The participants included college students at a university in the western United States and community members recruited from the same area (70 men and 48 women). These participants received either partial course credit in exchange for participation or were compensated $10 per hour. Participants ranged in age from 18 to 43 years ($M = 20.5$, $SD = 4.0$). Twenty-five percent of the participants were European American; 45% were Asian American; 13% were other or a mixed ethnicity, and 17% did not report their ethnicity. Thirty-nine were Christian, 12 were Buddhist, one was Jewish, 61 were not religious (atheist, agnostic, or spiritual but not religious), and the rest were some other religion. Participants answered self-report items online.

Measures

Spirituality and religiosity. In Samples A and C, following standard practice (Fisher, 2009; Gorsuch & McFarland, 1972; Idler et al., 2009; Saroglou & Galand, 2004; Schwartz & Huismans, 1995; Sprecher & Fehr, 2005), we used a single multistep rating scale to separately assess spirituality and religiosity. Not only are one-item scales often used to measure global spirituality and religiosity, previous research has found that one-item scales in other domains such as health, work satisfaction, and self-esteem are both reliable and valid (DeSalvo et al., 2006; Robins, Hendin, & Trzesniewski, 2001; Wanous & Hudy, 2001; Wanous & Reichers, 1996; Wanous, Reichers, & Hudy, 1997). We asked participants to indicate their level of religiosity by responding to the question "How religious are you?" rated on a 7-point scale from 1 (*not at all*) to 7 (*deeply*); for Sample A: $M = 3.33$, $SD = 2.06$; for Sample C: $M = 3.00$, $SD = 1.98$. Participants indicated their level of spirituality by responding to the question "How spiritual are you?" rated on a 7-point scale from 1 (*not at all*) to 7 (*deeply*); for Sample A: $M = 4.39$, $SD = 1.85$; for Sample C: $M = 4.27$, $SD = 1.88$. In Sample B, the General Social Survey, participants rated their religiosity with the item: "To what extent do you consider yourself a religious person? Are you very religious, moderately religious, slightly religious, or not religious at all?" ($M = 2.64$, $SD = .97$). Participants rated their global spirituality by answering the question: "To what extent do you consider yourself a spiritual person? Are you very spiritual, moderately spiritual, slightly spiritual, or not spiritual at all?" ($M = 2.82$, $SD = .92$). For both, we reverse-scored the original rating so that higher scores indicated greater spirituality or religiosity, with a range from 1–4.

Spiritual and religious practices. We asked participants in the online sample (Sample A) several questions about their spiritual or religious practices using face-valid items previously used in a national survey of religious attitudes, the Faith Matter survey (Putnam & Campbell, 2010): "How often do you attend religious services at a church, mosque, synagogue, or other place of worship?" (possible answers: 1 = *never*, 2 = *less than once a year*, 3 = *once or twice a year*, 4 = *several times a year*, 5 = *once a month*, 6 = *2–3 times a month*, 7 = *about weekly*, 8 = *weekly*, 9 = *several times a week*; $M = 3.34$, $SD = 2.57$); "Outside of attending religious services, about how often do you read the Bible, Koran, Torah, or other sacred book?" (possible answers: 1 = *never*, 2 = *less than once a year*, 3 = *once or twice a year*, 4 = *several times a year*, 5 = *once a month*, 6 = *2–3 times a month*, 7 = *about weekly*, 8 = weekly, 9 = *several times a week*; $M = 3.32$, $SD = 2.70$); "About how often do you pray or meditate outside of religious services?" (possible answers: 1 = *never*, 2 = *only on certain occasions*, 3 = *once a week or less*, 4 = *a few times a week*, 5 = *once a day*, 6 = *several times a day*; $M = 3.34$, $SD = 1.78$).

To measure spiritual and religious practices, in Sample B participants were asked, "How often do you attend religious services?" (possible answers: 0 = *never*, 1 = *less than once a year*, 2 = *once a year*, 3 = *several times a year*, 4 = *once a month*, 5 = *2–3 times a month*, 6 = *nearly every week*, 7 = *every week*, 8 = *more than once a week*; $M = 3.67$, $SD = 2.81$) and "About how often do you pray? (possible answers: 1 = *never*, 2 = *less than once a week*, 3 = *once a week*, 4 = *several times a week*, 5 = *once a day*, 6 = *several times a day*; $M =$

4.25, *SD* = 1.72). For all, higher scores indicated that participants reported taking part in these practices more often (we reverse-scored the original rating scale for the prayer item).

Religious fundamentalism. We measured religious fundamentalism in the online sample (Sample A; 12 items, α = .94; *M* = 2.27, *SD* = 1.01), rated from 1= *strongly disagree* to 5 = *strongly agree* (Altemeyer & Hunsberger, 2004). Items include, "God has given humanity a complete, unfailing guide to happiness and salvation, which must be totally followed," "The fundamentals of God's religion should never be tampered with, or compromised with others' beliefs," and "When you get right down to it, there are basically only two kinds of people in the world: the Righteous, who will be rewarded by God; and the rest, who will not." In Sample B, the fundamentalism of participants' religion was rated as 3 = *fundamentalist*, 2 = *moderate*, or 1 = *liberal*, with higher scores indicating greater fundamentalism (we reverse-scored the original rating scale; *M* = 1.98, *SD* = .78).

Spiritual identity. We assessed people's spirituality identity in the online sample (Sample A: *M* = 3.31, *SD* = 1.22) with the cognitive orientation toward spirituality scale (six items, α = .97), rated from 1 = *strongly disagree* to 5 = *strongly agree* (MacDonald, 2000). Items include, "Spirituality is an important part of who I am as a person," "I believe that attention to one's spiritual growth is important," and "My life has benefited from my spirituality." This is a direct measure of spirituality, with none of the items explicitly mentioning religion.

Self-transcendence. We assessed people's sense of self-transcendence in the online sample (Sample A; *M* = 2.91, *SD* = 1.20) with the experiential/phenomenological scale (six items, α = .93), rated from 1 = *strongly disagree* to 5 = *strongly agree* (MacDonald, 2000). Items include, "I have had an experience in which I seemed to be deeply connected to everything," "I have had an experience in which I seemed to transcend space and time," "I have had an experience in which all things seemed divine," and "I have had an experience in which I seemed to merge with a power or force greater than myself." None of the items explicitly mention religion or spirituality, although there is mention of connecting to something "divine."

Questing orientation. We measured religious questing orientation, which measures the willingness of individuals to face religious questions and doubts (Batson & Schoenrade, 1991; Sample A; *M* = 2.81, *SD* = .73, 12 items, α = .84). The scale includes such items as: "God wasn't very important for me until I began to ask questions about the meaning of my own life," "For me, doubting is an important part of what it means to be religious," and "There are many religious issues on which my views are still changing."

Global positive affect. In Sample C, we measured the tendency to feel positive and negative affect using the Positive Affect Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). Participants were asked to rate how much they generally felt several emotions from 1 = *very slightly or not at all* to 5 = *extremely*. Positive emotions (α = .89; *M* = 3.27, *SD* = .71) were measured with the adjectives "interested," "excited," "strong," "enthusiastic," "proud," "alert," "inspired," "determined," "attentive," and "active." Negative emotions (α = .83) were measured with the adjectives "distressed," "upset," "guilty," "scared," "hostile," "irritable," "ashamed," "nervous," "jittery," and "afraid."

Dispositional compassion, awe, and love. In Sample C, we also tapped into the tendency to feel compassion (α = .86; *M* = 5.39, *SD* = .93), awe (α = .77; *M* = 4.89, *SD* = .91), and love (α = .81; *M* = 4.60, *SD* = 1.03) using subscales of the Dispositional Positive Emotions Scale (Shiota, Keltner, & John, 2006). Example items for the compassion subscale include: "I am a very compassionate person," and "When I see someone hurt or in need, I feel a powerful urge to take care of them." Example items for the awe subscale include: "I feel wonder almost every day" and "I often feel awe." Example items for the love subscale include: "I love many people" and "I find it easy to trust others." Participants rated the items from 1 = *strongly disagree* to 7 = *strongly agree*.

Results

Background: Measuring spirituality and religiosity. Although the global, single-item measures of spirituality and religiosity were correlated in Samples A (*r* = .65), B (*r* = .57), and C (*r* = .60), we found that spirituality and religiosity defined separate factors. In Sample A we conducted a principal components analysis with varimax rotation including not only the global measures of spirituality and religiosity but also the items from the cognitive approaches to spirituality scale, the religious fundamentalism scale, and the three religious practice items. As expected, the factor analysis revealed two factors. One, representing religiosity, explained 36.86% of variance after varimax rotation. Global religiosity loaded substantially (.65) on the religiosity factor. The other, representing spirituality, explained 33.29% of variance after varimax rotation. Global spirituality loaded substantially (.89) on the spirituality factor. Using oblimin rotation, the two factors were correlated .48. Therefore, as hypothesized, we did find two separate factors for spirituality and religiosity.

Convergent and divergent validity for measures of spirituality and religiosity. Across measures and samples, the global, single-item measures of spirituality and religiosity predicted different experiences and practices. As can be seen in Table 1, global spirituality was positively related to having a spiritual identity, having had transcendent experiences, having a questing orientation toward one's religion, and tending to pray. Although spirituality was related to attending a religious institution, after controlling for the effects of religiosity, the effect was eliminated. (Because of the substantial correlations between spirituality and religiosity, it is more informative to examine the partial correlations.) Even after the effect of spirituality was controlled for, global religiosity was positively related to religious fundamentalism and tending to pray, attend a religious institution, and read a religious holy book. Only prayer/meditation was moderately related to the unique effects of both spirituality and religiosity.

Testing the link between spirituality, religiosity, and prosocial emotions. Sample C allowed us to test whether spiritual individuals report feeling more compassion above and beyond positive affect. As can be seen in Table 2, spirituality was correlated with positive affect ($r = .28$, $p < .01$), even controlling for religiosity ($r = .29$, $p < .01$). Religiosity, on the other hand, was not related to positive affect ($r = .09$, $p > .10$; controlling for spirituality, $r = -.12$, $p > .10$). Neither spirituality nor religiosity were related to negative affect.

Table 1
Zero-Order and Partial Correlations of Spirituality and Religiosity With Convergent and Divergent Validity Scales (Study 1, Samples A and B)

	Predictor: Spirituality		Predictor: Religiosity	
	Zero-order	Partialling religiosity	Zero-order	Partialling spirituality
Spirituality and religiosity scales				
Spiritual identity[a]	.89**	.83**	.60**	.05
Example item: I believe that attention to one's spiritual growth is important.[a]	.87**	.79**	.57**	.03
Example item: My life has benefited from my spirituality.[a]	.88**	.80**	.60**	.08
Transcendence[a]	.47**	.49**	.17*	−.21*
Example item: I have had an experience in which I seemed to be deeply connected to everything.[a]	.34**	.40**	.10	−.22*
Example item: I have had an experience in which all things seemed divine.[a]	.50**	.43**	.34**	−.04
Religious questing orientation[a]	.26**	.24**	.12	−.07
Religious fundamentalism[a]	.49**	.04	.73**	.61**
Religious fundamentalism[b]	.27**	.04*	.42**	.33**
Example item: When you get right down to it, there are basically only two kinds of people in the world: the Righteous, who will be rewarded by God; and the rest, who will not.[a]	.35**	−.09	.63**	.58**
Example item: To lead the best, most meaningful life, one must belong to the one, fundamentally true religion.[a]	.41**	−.07	.68**	.61**
Spiritual and religious practices				
Tendency to pray or meditate[a]	.66**	.38**	.68**	.44**
Tendency to pray[b]	.55**	.32**	.60**	.42**
Tendency to attend a religious institution[a]	.51**	.09	.70**	.58**
Tendency to attend a religious institution[b]	.42**	.14**	.58**	.45**
Tendency to read a religious holy book[a]	.51**	.17*	.63**	.44**

[a] = Sample A, an online sample of 149 individuals. [b] = Sample B was a nationally representative sample from the General Social Survey, 2008.
* $p < .05$. ** $p < .01$.

Next we examined how spirituality and religiosity were related to the tendency to feel compassion, awe, and love. Spirituality was related to all three (compassion: $r = .44, p < .01$; awe: $r = .27, p < .01$; love: $r = .20$, $p < .05$). After controlling for religiosity, spirituality still predicted increased compassion ($r = .40, p < .01$) and awe ($r = .31, p < .01$), but not love ($r = .15, p < .10$). Religiosity was related to compassion ($r = .23, p < .05$), but not after controlling for spirituality ($r = -.08, p > .10$). Religiosity was unrelated to awe and love ($p > .10$).

We next ascertained whether spirituality would predict increased compassion, awe, and love after controlling for overall positive affect.

Table 2
Zero-Order and Partial Correlations of Spirituality and Religiosity With Emotional Tendencies (Study 1, Sample C)

	Predictor: Spirituality		Predictor: Religiosity	
	Zero-order	Partialling religiosity	Zero-order	Partialling spirituality
Global affect				
PANAS negative	−.06	−.11	.06	.12
PANAS positive	.28**	.29**	.09	−.12
Specific emotional tendencies				
Compassion	.44**	.40**	.23*	−.08
Awe	.27**	.31**	.04	−.17
Love	.20*	.15	.15	.02
Specific emotional tendencies (controlling for PANAS positive)				
Compassion	.38**	.33**	.21*	−.05
Awe	.14	.18*	−.01	−.12
Love	.14	.08	.13	.05
Specific emotional tendencies (controlling for compassion)				
Awe	.05	.12	−.10	−.15
Love	.01	−.02	.05	.05

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

Importantly, spirituality remained significantly related to compassion after controlling for positive affect ($r = .38$, $p < .01$) and after controlling for positive affect and religiosity ($r = .33$, $p < .01$). Awe was significantly related to spirituality after controlling for positive affect and religiosity ($r = .18$, $p < .05$), and love was not significantly related to spirituality after controlling for positive affect ($p > .10$).

Compassion was significantly related to religiosity after controlling for positive affect ($r = .21$, $p < .05$). Critically, religiosity was not related to greater compassion after controlling for positive affect and spirituality ($r = -.05$, $p > .10$). Awe and love were unrelated to religiosity after controlling for positive affect ($p > .10$).

Last, we controlled for compassion and tested whether awe and love would be related to spirituality or religiosity. No effects remained significant ($p > .10$).

Discussion

In Study 1 we sought to validate and clarify our focused measures of spirituality and religiosity, and then to test their link to prosocial emotions, especially compassion. Although our measures were moderately correlated, in a factor analysis we did find two separate factors for spirituality and religiosity. Then, we assessed whether spirituality and religiosity were related to distinct, fine-grained assessments of spiritual and religious attitudes and practices. Spirituality was especially associated with having a spiritual identity, having had transcendent experiences, and tending to pray. Religiosity was especially related to religious fundamentalism, attending religious services, reading a holy book, and tending to pray. Next, we tested the independent associations of spirituality and religiosity on compassion. In keeping with our hypothesis, more spiritual participants were more likely to tend to feel compassion, even controlling for positive affect and religiosity, whereas more religious participants were not. The results further suggest that compassion is core to the spiritual experience. For example, spirituality did predict increased love, but not after having controlled for compassion.

Overall, these findings establish that our assessments of spirituality and religiosity predict different patterns of outcomes, and ones that are in keeping with the conceptual analysis: Spirituality is related to the emotional core of religion, whereas religiosity is related to the formalized rituals of religion.

The results of Study 1 offer a promising start to our examination of the relationship between spirituality, religiosity, and prosociality. Notwithstanding the promise of the results, it is important to note that Study 1 only assessed general tendencies in emotional experience. We designed Study 2 to test if spirituality would be linked to showing compassion when witnessing the suffering of others.

Study 2: More Spiritual Individuals Report Feeling More Compassion and Show More Nonverbal Compassion; No Link to Distress

In Study 2 we not only measured the self-reported tendency to feel compassion, but also measured behavioral responses. We used a well-validated compassion induction (images of strangers showing distress or suffering) in order to measure the nonverbal expression of compassion. This study allowed us to test our hypothesis that spirituality would be related to greater nonverbal compassion in response to the compassion induction, especially after controlling for religiosity, whereas religiosity might be unrelated to nonverbal compassion in response to the compassion induction, especially after controlling for spirituality. We also aimed to replicate our self-report finding from Study 1 that more spiritual individuals would be more likely to report feeling compassion.

Further, we assessed whether more spiritual or more religious individuals would report or show more distress when faced with the suffering of others. Whereas compassion is thought to encourage other-oriented attention and feeling motivated to help others' suffering, distress is thought to activate concerns about the self and a motivation to attempt to reduce one's own distress (Batson, O'Quin, Fultz, Vanderplas, & Isen, 1983; Batson & Shaw, 1991). Thus, we reasoned that if more spiritual or religious individuals are to behave more altruistically in our later studies, in this earlier research we should find an association with compassion but not distress.

Method

Participants and procedure. The participants included college students at a university in the western United States (61 male, 72 female) who participated in the study for partial course credit. They ranged in age from 18 to 39 years ($M = 20.2$, $SD = 2.8$). Ethnicity varied (2% African American, 26% European American, 6% Latino/a, 49% Asian American, 16% other or mixed, and 1% unknown). Forty-five were Christian, four were Buddhist, four were Jewish, three were Muslim, four were Hindu, 70 were not religious, and two were some other religion or did not state their religion. Participants answered some self-report items online and later participated in a compassion-eliciting task in the laboratory.

Measures

Spirituality and religiosity. As before, we asked participants to indicate their level of religiosity by responding to the question "How religious are you?" that they rated on a 7-point scale from 1 = *not at all* to 7 = *deeply*; $M = 2.90$, $SD = 1.84$. Participants indicated their level of spirituality by responding to the question "How spiritual are you?" rated on a 7-point scale from 1 = *not at all* to 7 = *deeply*; $M = 3.76$, $SD = 1.85$.

Nonverbal displays of compassion and distress. In order to assess how much nonverbal compassion and distress participants showed in a compassion-inducing situation, participants were seated in front of a computer and viewed a set of 10 slides pretested to elicit compassion (Oveis, Horberg, & Keltner, 2010). Each slide consists of a photograph depicting a scene of vulnerability and harm, including suffering humans and nonhumans. Each slide appeared on the computer screen for 10 seconds, and the whole series of slides was presented in a continuous fashion.

The participants' reactions to the compassion induction was videotaped and later coded by six research assistants for nonverbal displays of compassion ($\alpha = .83$; $M = 2.05$, $SD = 1.21$) and distress ($\alpha = .80$; $M = 1.73$, $SD = 1.04$) using a coding scheme based on the Emotional Expressive Behavior Coding System (Gross & Levenson, 1993). Coders focusing on facial and bodily movements associated with compassion and distress in previous research (Eisenberg et al., 1989; Haidt & Keltner, 1999). To assess

compassion, coders used indicators such as a downturned mouth and an upturned inner brow, a slumped versus vertical upper body posture, in addition to coding the degree of compassion based upon their own impressions. To assess distress, coders noted how much the participants showed shaking, cringing, muscle tension, twitches, and flinches, in addition to coding the degree of distress based upon their own impressions. Coding was done on a 7-point scale that assessed both the intensity and duration of the compassion or distress behaviors: 0 = *none*, 1 = *slight and short*, 2 = *slight and long*, 3 = *moderate and short*, 4 = *moderate and long*, 5 = *strong and short*, or 6 = *strong and long*.

Self-reported compassion and distress. As compassion, sympathy, and empathic concern are typically considered to be highly interrelated (Batson, 2009), the tendency to feel compassion was measured with the 7-item empathic concern subscale of the Interpersonal Reactivity Index, (rated from 1 = *strongly disagree* to 5 = *strongly agree*; $\alpha = .79$; $M = 3.69$, $SD = .62$; Davis, 1983). Items include, "I often have tender, concerned feelings for people less fortunate than me," "When I see someone being taken advantage of, I feel kind of protective toward them," and "Other people's misfortunes do not usually disturb me a great deal" (reverse-scored). Participants also rated how much they tend to feel compassion by answering how much they tend to feel "compassion/sympathy" in general from 1 = *do not feel at all* to 7 = *feel very strongly*; $M = 4.98$, $SD = 1.36$. This "global" measure is an adaptation of the Differential Emotions Scale (Fredrickson, Tugade, Waugh, & Larkin, 2003) using the two words most associated with compassion (Goetz et al., 2010).

Participants' self-reported tendency to feel distress in the face of others' suffering was assessed with the 7-item personal distress subscale of the Interpersonal Reactivity Index, (rated from 1 = *strongly disagree* to 5 = *strongly agree*; $\alpha = .70$; $M = 2.90$, $SD = .60$; Davis, 1983). Items include, "When I see someone who badly needs help in an emergency, I go to pieces," and "When I see someone get hurt, I tend to remain calm" (reverse-scored).

Results

Our prediction was that more spiritual individuals would display more compassion, rather than distress, in response to images of the suffering of others. We further anticipated that more spiritual individuals would report experiencing more compassion, rather than distress, when in situations in which others were hurt or in need. Consistent with these predictions, more spiritual participants showed more nonverbal displays associated with compassion ($r = .21$, $p < .05$), even after controlling for religiosity ($r = .19$, $p < .05$). More spiritual individuals did not show more distress during the compassion induction ($r = .14$, $p > .10$; controlling for religiosity, $r = .08$, $p > .10$). More religious individuals did not display more nonverbal compassion ($r = .09$, $p > .10$) or distress ($r = .12$, $p > .10$) in response to the compassion induction.

In addition, more spiritual individuals reported higher levels of compassion (empathic concern: $r = .24$, $p < .01$, global measure: $r = .25$, $p < .01$), even independent of religiosity (empathic concern: $r = .19$, $p < .01$, global measure: $r = .28$, $p < .01$). Similar to our behavioral results, spiritual individuals did not report greater personal distress ($r = .01$, $p > .10$; controlling for religiosity, $r = -.05$, $p > .10$). More religious individuals did report feeling more compassion, as measured with the empathic concern scale ($r = .15$, $p < .05$), but results did not remain significant after controlling for spirituality ($r = .00$, $p > .10$). More religious individuals did not report greater compassion, as assessed by the global measure of compassion ($r = .04$, $p > .10$; controlling for spirituality: $r = -.13$, $p > .10$). More religious individuals did not report feeling greater distress ($r = .08$, $p > .10$; controlling for spirituality: $r = .09$, $p > .10$). See Table 3 for the results.

Discussion

Study 2 yielded a replication of Study 1's findings that more spiritual individuals report feeling more compassion. Study 2 also extended this previous finding by measuring behavioral indicators of the expression of compassion. We found support for the idea that more spiritual individuals show more compassion when faced with the suffering of others, independent of religiosity. Religiosity, on the other hand, was unrelated to nonverbal compassion. Neither spirituality nor religiosity were related to distress. Study 2 helped us more strongly establish that more spiritual individuals are more likely to feel compassion.

The next three studies were designed to test if spirituality was related to greater altruism, and if the link we had established between spirituality and compassion would help explain why more spiritual individuals behave more altruistically.

Table 3
Zero-Order and Partial Correlations of Spirituality and Religiosity With Self-Reported and Behavioral Compassion (Study 2)

	Predictor: Spirituality		Predictor: Religiosity	
	Zero-order	Partialling religiosity	Zero-order	Partialling spirituality
Response to compassion induction				
Nonverbal compassion	.21*	.19*	.09	−.03
Nonverbal distress	.14	.08	.12	.05
Emotional tendencies				
Tendency to feel compassion (empathic concern)	.24**	.19**	.15*	.00
Tendency to feel compassion (global item)	.25**	.28**	.04	−.13
Tendency to feel personal distress	.01	−.05	.08	.09

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

Study 3: Compassion Helps Explain the Spirituality to Prosociality Link

In Study 3 we tested the hypothesis that more spiritual individuals behave more prosocially toward a hypothetical stranger in an anonymous situation. Moreover, we aimed to show a mediating process that would help account for why more spiritual individuals would show greater prosociality. Building upon our earlier studies that documented that more spiritual people tend to feel more compassion in general and in response to specific images of other people suffering, we expected that more spiritual people would endorse more prosociality, and that their tendency to feel compassion would mediate this spirituality to prosociality connection.

In this study, we presented a nationwide sample of adults with a measure that assesses prosociality toward a hypothetical stranger (Van Lange, Otten, De Bruin, & Joireman, 1997). In this task, participants are asked to imagine that they must divide resources between themselves and an unknown person. For each question, they can decide to give to the other person in an equitable way or to unevenly divide the pie to favor themselves. Prosocial responding on this task, the social value orientation task, has been found to be positively related to more collaborative social attitudes (Gärling, Fujii, Gärling, & Jakobsson, 2003; Nauta, De Dreu, & Van Der Vaart, 2002) and being more likely to think of others as fair and considerate (De Dreu & Van Lange, 1995).

To test other potential explanations of the link between spirituality and prosociality on the social value orientation task, we ascertained whether more global traits (Agreeableness, Openness, or Extraversion) would also mediate the spirituality−prosociality association. Agreeableness is the tendency to be sympathetic, kind, and affectionate. Openness is the tendency to be curious, open-minded, and imaginative. Both have been associated with greater perspective taking and prosociality (Graziano & Tobin, 2009; McCrae & Sutin, 2009), and Openness has been associated with greater spirituality (Saroglou, 2002). Extraversion is a broad personality dimension known to relate to positive emotion (Bruck & Allen, 2003; Shiota et al., 2006), which in turn has been associated with greater altruism (Isen, 1970; Isen, Horn, & Rosenhan, 1973; Moore, Underwood, & Rosenhan, 1973), although results have not always been replicated (Weyant & Clark, 1976). These findings raise the possibility that the spirituality to prosociality association may simply be the product of broader personality dimensions such as Agreeableness, Openness, or Extraversion.

Method

Participants and procedure. Participants were a nationwide sample of 134 people gathered using a Craig's List posting in more than 30 cities in the United States (23 male, 95 female; ethnicity and specific religion were not asked). They ranged in age from 18 to 64 years ($M = 35.27$, $SD = 12.79$). All participants answered self-report items online.

Measures

Spirituality and religiosity. As before, we asked participants to indicate their level of religiosity by responding to the question "How religious are you?" that they rated on a 7-point scale from 1 = *not at all* to 7 = *deeply*; $M = 3.02$, $SD = 1.89$. Participants indicated their level of spirituality by responding to the question "How spiritual are you?" rated on a 7-point scale from 1 = *not at all* to 7 = *deeply*; $M = 4.39$, $SD = 1.92$.

Social value orientation task. For the social value orientation task (nine items; $\alpha = .98$; $M = 7.11$, $SD = 3.28$; Van Lange et al., 1997) participants were asked to allocate points to themselves and an unspecified other person. For each of nine questions, participants could choose a prosocial outcome (dividing the funds equally), or a nonprosocial outcome (either taking a moderate or extreme amount greater than the others). The total number of prosocial choices was used as an index of prosociality.

Compassion. As in Study 2, the tendency to feel compassion was measured with the 7-item empathic concern subscale of the Interpersonal Reactivity Index, (rated from 1 = *strongly disagree* to 5 = *strongly agree*; $\alpha = .85$; $M = 3.84$, $SD = .67$; Davis, 1983).

Alternative mediators: Agreeableness, openness, and extraversion. Participants provided self-reports of the Agreeableness subscale of the Big Five Inventory (nine items; $M = 3.58$, $SD = .64$; John, Naumann, & Soto, 2008), and the Openness (two items; $M = 4.03$, $SD = .69$) and Extraversion (two items; $M = 3.02$, $SD = 1.05$) subscales of the Ten-Item Personality Inventory (Gosling, Rentfrow, & Swann Jr., 2003) on 5-point scales (1 = *strongly disagree* to 5 = *strongly agree*). For Agreeableness, example items include: "I see myself as someone who is helpful and unselfish with others," and "I see myself as someone who has a forgiving nature." For Openness items include: "I see myself as open to new experiences, complex" and "I see myself as conventional, uncreative" (reverse-scored). For Extraversion items include: "I see myself as extraverted, enthusiastic" and "I see myself as reserved, quiet" (reverse-scored).

Results

We predicted that relative to less spiritual individuals, more spiritual individuals would behave more prosocially on the social value orientation task, and that this would be mediated by more spiritual individuals' tendency to feel compassion and concern for others. Spirituality was related to greater compassion ($r = .38$, $p < .01$) and prosociality on the social value orientation task ($r = .22$, $p = .01$), even after controlling for the effect of religiosity (compassion: $r = .40$, $p < .01$; social value orientation task: $r = .24$, $p < .01$). Religiosity was unrelated to both compassion and prosociality on the social value orientation task. See Table 4 for results.

Next we tested our hypothesis that spiritual people show greater prosociality because they have a heightened level of compassion. We tested mediation using a bootstrapping method with 1,000 resamples (Preacher & Hayes, 2008). Bootstrapping is a nonparametric approach that produces an estimate of an indirect, mediation effect, including a 95% confidence interval. If zero does not lie in the 95% confidence interval, the indirect effect is considered to be statistically significantly different from zero at $p < .05$ (two-tailed). Therefore, the effect of the independent variable on the dependent variable is partially mediated or explained by the mediating variable. To ease comprehension of these results, we will discuss the results using linear regression, following the mediational models laid out by Baron and Kenny (1986). More spiritual individuals behaved more prosocially on the social value orientation task ($\beta = .17$, $p < .01$). When adding into the model the

Table 4
Zero-Order and Partial Correlations of Spirituality and Religiosity With Altruism (Studies 3–5)

	Predictor: Spirituality		Predictor: Religiosity	
	Zero-order	Partialling religiosity	Zero-order	Partialling spirituality
Trait compassion				
Study 3	.38**	.40**	.08	−.15
Study 4	.24**	.30**	−.05	−.18*
Study 5	.34**	.36**	.11	−.17*
Prosociality				
Social value orientation task; Study 3	.22*	.24**	.04	−.10
Dictator task; Study 4	.21*	.19*	.04	−.04
Group-based prisoner's dilemma-maximizing differences game; Study 5	.18*	.21*	.03	−.14

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

significant association between spirituality and compassion (β = .38, $p < .01$) and the association between compassion and prosociality (β = .31, $p < .01$), the original significant relationship between spirituality and prosociality became nonsignificant (β = .12, $p > .10$). The estimated indirect effect of spirituality on altruism through the tendency to feel compassion was .18, *SE* = .07, 95% CI (bias corrected) = .06 to .36. Because this interval did not include zero, this indicates that this indirect effect was positive and significant with a *p* value of less than .05.

Results were similar when controlling for religiosity (see Figure 1). Spirituality was significantly associated with prosociality on the social values orientation task (β = .19, $p < .05$). When adding into the model the significant association between spirituality and compassion (β = .47, $p < .01$) and the association between compassion and prosociality on the social values orientation task (β = .31, $p < .01$), the original significant relationship between spirituality and prosociality on the social values orientation task became nonsignificant (β = .16, $p > .10$). After controlling for religiosity, the estimated indirect effect of spirituality on generosity on the social values task through the tendency to feel compassion was .22, *SE* = .10, 95% CI (bias corrected) = .06 to .44. Because this interval did not include zero, this indicates that this indirect effect was positive and significant with a *p* value of less than .05.

We next tested the alternative mediators Agreeableness, Openness, and Extraversion. None mediated the link between spirituality and prosociality. The estimated indirect effect of spirituality on prosociality (on the social values orientation task) through Agreeableness was .02, *SE* = .05, 95% CI (bias corrected) = −.04 to .17. The estimated indirect effect of spirituality on prosociality through Openness was less than .01, *SE* = .03, 95% *CI* (bias corrected) = −.05 to .07. The estimated indirect effect of spirituality on prosociality through Extraversion was −.04, *SE* = .05, 95% CI (bias corrected) = −.21 to .02. Because these intervals include zero, these indirect effect were not significant.

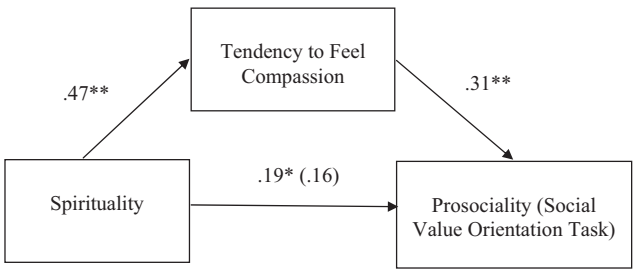

Figure 1. The relationship between spirituality and prosociality, mediated by the tendency to feel compassion. Standardized regression betas are shown (results from Study 3; controls for religiosity).

Discussion

As in our previous studies, more spiritual individuals reported a greater tendency to feel compassion, but more religious participants did not report feeling more compassion. Study 3 also confirmed our hypotheses about the relationship between spirituality and prosociality. More spiritual individuals tended to display more prosociality on the social value orientation task, and this was partially explained by their tendency to feel compassion. These findings held independent of religiosity. Importantly, possible alternative mediators, Agreeableness, Openness, and Extraversion, failed to mediate the link between spirituality and prosociality. This suggests that these broader individual differences are not driving the relationship between spirituality and prosociality. Instead, it points to compassion as the more focused and appropriate mediator of spirituality to prosociality.

Study 3 demonstrates, as hypothesized, that more spiritual people may be more prosocial. It is important to note, however, that the social value orientation task is a purely hypothetical measure. Given this limitation of Study 3, in Study 4 we tested the hypothesis that spirituality would predict increased altruism in a task that incurred actual costs to the altruist.

Study 4: Compassion Helps Explain the Spirituality to Economic Altruism Link (Dictator Task)

As Norenzayan and Shariff (2008) note, religious people may be especially sensitive to reputational concerns and impression management. Self-reports of prosociality might, therefore, be inflated due to socially desirable responding, although online reporting (as used in Study 3) reduces this concern (Duffy, Smith, Terhanian, & Bremer, 2005; Lowery, Unzueta, Knowles, & Goff, 2006). Therefore, in Study 4 we used an ecologically valid laboratory task

(rather than self-report) in order to assess behavioral altruism toward a stranger. Known as the "dictator" task, one participant dictates to the other what resources they are to be given (Forsythe, Horowitz, Savin, & Sefton, 1994; Fowler & Kam, 2007). Specifically, participants are allocated a fixed sum of points. They make a unilateral decision about how to divide that sum between themselves and an anonymous unknown stranger who is then required to accept whatever amount is given. The allocation of resources on this task is not hypothetical; any resources allocated to the other person are costly to the altruist. Because of this, the task more directly captures actual altruism. This measure of altruism, moreover, is done anonymously, benefits a stranger the altruist will never meet, the stranger cannot reciprocate the kindness, and the giving has little chance of enhancing the reputation of the altruist. Altruism given in this way may be especially driven by individual differences in prosociality.

This study allowed us to test our hypothesis that spirituality, when controlling for religiosity, would be related to greater altruism toward a stranger whereas religiosity, especially controlling for spirituality, might be unrelated to altruism. Again we tested the additional hypothesis that the experience of compassion would mediate the relationship between spirituality and altruistic behavior. As in Study 3, we tested whether the broad traits of Agreeableness, Openness, and Extraversion could help explain the link between spirituality and altruism.

Method

Participants and procedure. A sample of 148 undergraduates from a large western university in the United States participated for course credit (76 men, 72 women; ages 18–46, $M = 20.34$, $SD = 4.03$; 46 were European American, 69 were Asian American, and the rest were of other or mixed ethnicity). Fifty-two were Christian, seven were Buddhist, eight were Jewish, two were Muslim, five were Hindu, 58 were not religious (atheist, agnostic, or spiritual but not religious), 10 were some other religion, and the rest declined to state their religion. Participants answered some self-report items online and later participated in a dictator task in the laboratory.

Measures

Spirituality and religiosity. As before, we asked participants to indicate their level of religiosity by responding to the question "How religious are you?" that they rated on a 7-point scale from 1 = *not at all* to 7 = *deeply*; $M = 2.94$, $SD = 1.53$. Participants indicated their level of spirituality by responding to the question "How spiritual are you?" rated on a 7-point scale from 1 = *not at all* to 7 = *deeply*; $M = 3.79$, $SD = 1.75$.

Altruism (dictator task). For the dictator task, participants were seated in front of a computer and informed that they had been randomly partnered with another participant. Participants were told that they had 10 points and had to decide how many of these points they wanted to keep for themselves and how many (if any) they wanted to transfer to their partner. Participants were further instructed that their cash payout at the end of the study would depend on how many points they had ($M = 3.61$, $SD = 2.41$). Exercises used points which were exchanged for money at the end of the study (one U.S. dollar for every point). The points were real, but we did not describe the conversion rate from points to cash before the end of the study. Previous research has shown that participants respond to such payment systems similarly to studies in which points equal dollars with a 1 to 1 exchange rate (e.g., Barclay & Willer, 2007).

Compassion. As before, the tendency to feel compassion was measured with the 7-item empathic concern subscale of the Interpersonal Reactivity Index, (rated from 1 = *strongly disagree* to 5 = *strongly agree*; $\alpha = .80$; $M = 3.78$, $SD = .63$; Davis, 1983).

Alternative mediators: Agreeableness, openness, and extraversion. Participants provided self-reports of several subscales of the Big Five Inventory (Agreeableness: nine items, $M = 3.61$, $SD = .52$; Openness: 10 items, $M = 3.47$, $SD = .52$; Extraversion: eight items, $M = 3.12$, $SD = .64$) on 5-point scales (1 = *strongly disagree* to 5 = *strongly agree*; John et al., 2008). For Agreeableness, example items include: "I see myself as someone who is helpful and unselfish with others," and "I see myself as someone who has a forgiving nature." For Openness example items include: "I see myself as someone who is original, comes up with new ideas," and "I see myself as someone who has an active imagination." For Extraversion example items include: "I see myself as someone who is talkative," and "I see myself as someone who is outgoing, sociable."

Results

Spirituality was related to a greater tendency to feel compassion ($r = .24$, $p < .01$) and greater altruism on the dictator task ($r = .21$, $p < .05$), independent of religiosity (compassion: $r = .30$, $p < .01$; dictator: $r = .19$, $p < .05$). Religiosity was unrelated to compassion ($r = -.05$, $p > .10$), but became negatively related to compassion after controlling for spirituality ($r = -.18$, $p < .05$). Religiosity was unrelated to altruism ($r = .04$, $p > .10$; controlling for spirituality, $r = -.04$, $p > .10$).

Next we tested if the tendency to feel compassion mediated the link between spirituality and altruism on the dictator task. As before, we used a bootstrapping method (Preacher & Hayes, 2008). To ease comprehension, we discuss the results using linear regression. More spiritual individuals behaved more altruistically on the dictator task ($\beta = .21$, $p < .05$). When adding into the model the significant association between spirituality and compassion ($\beta = .24$, $p < .01$) and the association between compassion and altruism on the dictator task ($\beta = .22$, $p < .01$), the original significant relationship between spirituality and altruism on the dictator task was reduced ($\beta = .17$, $p < .05$). The estimated indirect effect of spirituality on altruism on the dictator task through the tendency to feel compassion was .05, $SE = .03$, 95% CI (bias corrected) = .003 to .12. This indirect effect does not cross zero and, therefore, implies that this indirect effect was positive and significant with a p value of less than .05.

Results were similar when controlling for religiosity (see Figure 2). More spiritual individuals behaved more altruistically on the dictator task ($\beta = .23$, $p < .05$). When adding into the model the significant association between spirituality and compassion ($\beta = .37$, $p < .01$) and the association between compassion and altruism on the dictator task ($\beta = .22$, $p < .01$), the original significant relationship between spirituality and altruism was reduced ($\beta = .18$, $p < .10$). After controlling for religiosity, the estimated indirect effect of spirituality on altruism in the dictator task

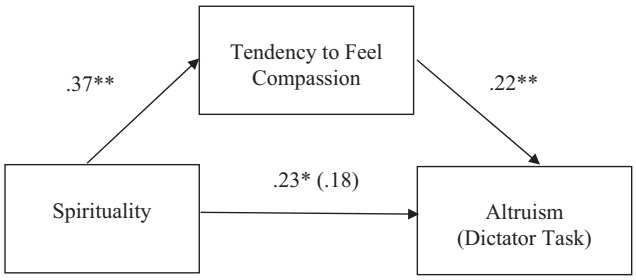

Figure 2. The relationship between spirituality and altruism on the dictator task, mediated by the tendency to feel compassion. Standardized regression betas are shown (results from Study 4; controls for religiosity).

through the tendency to feel compassion was .07, $SE = .04$, 95% CI (bias corrected) = .01 to .18. Because this interval did not include zero, this indicates that this indirect effect was positive and significant with a p value of less than .05.

We next tested alternative mediators of Agreeableness, Openness, and Extraversion. None mediated the link between spirituality and altruism. The estimated indirect effect of spirituality on altruism through Agreeableness was .01, $SE = .02$, 95% CI (bias corrected) = −.02 to .07. The estimated indirect effect of spirituality on altruism through Openness was .02, $SE = .02$, 95% CI (bias corrected) = −.001 to .08. The estimated indirect effect of spirituality on altruism through Extraversion was < .01, $SE = .01$, 95% CI (bias corrected) = −.02 to .02. As all of these intervals include zero, this implies that each of these indirect effects was not significant.

Discussion

Study 4 extended the findings by measuring actual altruism with a real cost to the giver. The giving was done anonymously, with a stranger who stood to benefit but could not reciprocate, and it was done in such a way as to make it unlikely that the altruists would gain reputational advantages for their behavior. In keeping with our earlier results, more spiritual individuals proved to be more altruistic—in this case in the dictator game—even when controlling for religiosity. More religious participants did not behave more altruistically toward a stranger in the dictator game. Our next set of analyses showed, also in keeping with previous findings, that the experience of compassion (and not other broad traits) mediated the association between spirituality and altruism.

Study 5: Compassion Helps Explain the Spirituality to Economic Altruism Link (Group-Based Prisoner's Dilemma)

We designed Study 5 to extend our understanding of spirituality's relationship to altruism. In Study 4, the participants were college undergraduates. In Study 5, we tested the spirituality to altruism link using a more representative sample of adults. In this study we used a slightly different task designed to measure group-based altruism, the tendency to choose to give to one's group at a cost to oneself (Halevy, Bornstein, & Sagiv, 2008). However, even though the task is designed to tap into group-based altruism, the groups in the task are composed of strangers whom the participants will never meet. In this way, the task measures actually altruism toward multiple strangers. Again (and critically) the giving is done anonymously, the recipients of the altruism cannot help the giver in the future, and the altruist is unlikely to improve their altruistic reputation. During the task, participants are allowed to keep points or make a costly contribution to benefit their in-group of strangers. We reasoned that spiritual people should have a heightened tendency to be altruistic toward strangers at a cost to themselves, and that this would be partially explained by their tendency to feel compassion.

Method

Participants and procedure. Participants were identical to those in Study 1 from Amazon Mechanical Turk; they were a national sample of adults who participated entirely online.

Measures

Spirituality and religiosity. As before, we asked participants to indicate their level of religiosity by responding to the question "How religious are you?" that they rated on a 7-point scale from 1 = *not at all* to 7 = *deeply*. Participants indicated their level of spirituality by responding to the question "How spiritual are you?" rated on a 7-point scale from 1 = *not at all* to 7 = *deeply*.

Altruism (group-based prisoner's dilemma). Participants took part in a group-based prisoner's dilemma-maximizing differences game (Halevy et al., 2008). Each person was allocated 10 points and told that these points would later be exchanged for real money at the end of the study. In addition, each participant was told that they had been placed into groups of three (the in-group) and three other participants were grouped into another group of three (the out-group). Participants were then offered three options. The option we were interested in measures altruism toward strangers. Participants could contribute points to an in-group pool. For every point that they put in that pool, they themselves would lose half a point but their group members would each gain half a point. The other two options allowed participants to either keep their points or both help their in-group and punish their out-group (this measures out-group spite; for every point they placed in that pool they lost half a point, their group members gained half a point, and the three out-group members lost half a point). Participants played two rounds of this game, and we averaged the number of points they allocated for the first, altruistic option (in which they gave up their own points in order to give points to their in-group of anonymous strangers); range 0–10, $M = 5.25$, $SD = 3.71$. Participants were paid for participating in these tasks.

Compassion. As in Sample C of Study 1, the tendency to feel compassion was measured with the compassion subscale of the Dispositional Positive Emotions Scale ($\alpha = .85$; Shiota et al., 2006).

Results

Spirituality was related to a greater tendency to feel compassion ($r = .34$, $p < .01$) and greater altruism ($r = .18$, $p < .05$), independent of religiosity (compassion: $r = .36$, $p < .01$; altruism: $r = .21$, $p < .05$). Religiosity was unrelated to compassion ($r = .11$, $p > .10$), but became negatively related after controlling for

spirituality ($r = -.17$, $p < .05$). Religiosity was unrelated to altruism on this task ($r = .03$, $p > .10$), even after controlling for spirituality ($r = -.14$, $p < .10$).

Next we tested if the tendency to feel compassion mediated the link between spirituality and altruism toward strangers. As before, we used a bootstrapping method (Preacher & Hayes, 2008). To ease comprehension we discuss the results using linear regression. More spiritual individuals showed greater altruism ($\beta = .18$, $p < .05$). When adding into the model the significant association between spirituality and compassion ($\beta = .34$, $p < .01$) and the association between compassion and altruism ($\beta = .40$, $p < .01$), the original significant relationship between spirituality and altruism became nonsignificant ($\beta = .05$, $p > .10$). The estimated indirect effect of spirituality on altruism through the tendency to feel compassion was .25, $SE = .08$, 95% CI (bias corrected) = .12 to .44. This indirect effect does not include zero and, therefore, implies that this indirect effect was positive and significant with a p value of less than .05.

Results were similar when controlling for religiosity (see Figure 3). Spirituality was significantly associated with altruism ($\beta = .28$, $p < .01$). When adding into the model the significant association between spirituality and compassion ($\beta = .48$, $p < .01$) and the association between compassion and altruism ($\beta = .31$, $p < .01$), the original significant relationship between spirituality and altruism became nonsignificant ($\beta = .11$, $p > .10$). The estimated indirect effect of spirituality on altruism through the tendency to feel compassion was .36, $SE = .11$, 95% CI (bias corrected) = .18 to .57. This indirect effect does not include zero and, therefore, implies that this indirect effect was positive and significant with a p value of less than .05.

Discussion

This study extended the findings by measuring actual altruism with a real cost to the altruist. In addition, the altruism was given in a situation in which tit-for-tat reciprocity and reputational benefits were absent, suggesting that individuals' prosocial tendencies would be especially predictive of their altruism. As before, our hypothesis was supported. Spirituality was related to greater altruism even controlling for religiosity whereas religiosity was unrelated to altruism. Moreover, the tendency for more spiritual individuals to feel more compassion helped explain the spirituality to altruism relationship.

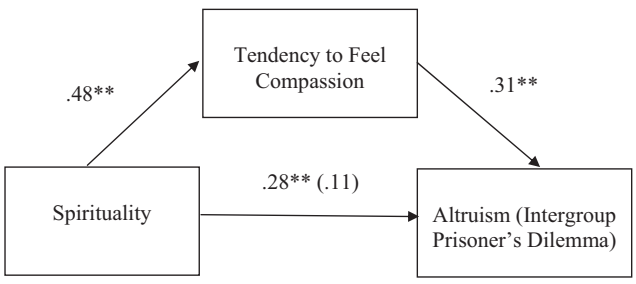

Figure 3. The relationship between spirituality and altruism, mediated by the tendency to feel compassion. Standardized regression betas are shown (results from Study 5; controls for religiosity).

General Discussion

Previous theorists have attempted to understand why people would help others at a cost to themselves. Kin selection suggests that individuals should be inclined to give to close relatives (Hamilton, 1964). Reciprocal altruism argues individuals should give to others who can help them later (Trivers, 1971). Indirect reciprocity contends that people will give in order to advertise their altruism and, therefore, get help from others in the future (Alexander, 1987). None of these theories comprehensively explains why people give to strangers they will never meet again, who cannot offer them reciprocal aid, and whose benefits will not improve the reputation of the altruist. One line of evidence has shown that individuals who hold prosocial values will behave altruistically, regardless of the possibility for future gain (Simpson & Willer, 2008). Another line of evidence has shown that feeling compassion tunes us into the needs of others and increases the likelihood that we will behave altruistically (Batson & Shaw, 1991; Goetz et al., 2010).

The current investigation is anchored in these later traditions, building off of evidence that other-oriented compassion should help explain altruism toward strangers. Indeed, we found that compassion is an important proximal determinant of altruism. On top of this past approach, however, we advance the research by adding the demographic variables of spirituality and religiosity. Specifically, we asked whether more spiritual or religious individuals would tend to feel more compassion, would tend to behave more altruistically, and finally, if their tendency to feel compassion would help explain their altruism.

The results of our investigation lend support to the idea that spirituality shapes prosocial tendencies; more spiritual people were more compassionate and more altruistic. First, we showed that spirituality and religiosity formed two, somewhat independent factors. Then, we established that both spiritual and religious individuals pray or meditate, but spiritual individuals are more likely to have had transcendent experiences in which they felt emotionally connected to the divine, and religious individuals are more likely to read religious holy books and to believe in a more fundamentalist form of religion. Then, we established the link between spirituality and higher compassion: More spiritual individuals reported feeling more compassion above and beyond general positive affect (Study 1); and more spiritual individuals showed greater nonverbal compassion during a compassion mood induction, reported a greater tendency to feel compassion, and were no more likely to show or feel distress when faced with the suffering of others (Study 2). Religious individuals did not consistently report feeling greater compassion, especially after controlling for the effect of spirituality.

Next, across three studies we showed that spirituality was associated with more altruistic behavior toward strangers and that this was partially explained by compassion. More specifically, in Study 3 more spiritual people behaved more prosocially on a hypothetical resource allocation task, and this prosociality was mediated by their tendency to feel compassion (Study 3). In Study 4, more spiritual people demonstrated greater behavioral altruism on a nontheoretical economic task (the dictator task), and again their altruism was mediated by compassion (Study 4). Notably, in Studies 3 and 4 we found that the broader traits of Agreeableness, Openness, and Extraversion did not help explain why more spir-

itual individuals behaved more altruistically. In Study 5, more spiritual people showed greater altruism toward strangers, which was mediated by their tendency to feel compassion (Study 5). Our results reflect a potentially important difference between spirituality and religiosity. Whereas increased spirituality predicted increased compassion and altruism across measures and methods, in these same studies more religious individuals, especially after controlling for spirituality, were not more likely to feel compassion and or to behave altruistically.

Directions for Future Research

In our research we used several different measures of compassion and prosocial behavior and attitudes, together providing us converging evidence of the links between spirituality, compassion, and altruism. However, as we chose to focus on cross-sectional studies, it is unclear how such effects might unfold over time. It will be up to future research to assess, for example, if greater spirituality predicts increases in altruism over time, and if so, if the increases in altruism are due to increases in compassion. Moreover, in Studies 4 and 5, although we emphasized the anonymous nature of the donations, we (the researchers) did know how much participants' contributed. This may have made participants more likely to contribute, in order to look better to the experimenters. In future research, we could further enhance the anonymous nature of the situation.

Moreover, although our participants were drawn from an ethnically diverse sample of students and nonstudents, it will be important for future research to ascertain whether the current results hold in other cultures and contexts, particularly ones that are nonwestern (Graham, Haidt, & Nosek, 2009; Henrich et al., 2010) and where conceptions of religiosity and spirituality may differ from those documented here. In a culture in which compassion is highly encouraged, spirituality may not predict greater altruism. In a culture in which compassion is not highly encouraged, however, spirituality may be even more critically linked to altruism.

It is worth noting that research has found that priming secular, moral institutions (using the words "civic," "jury," "court," "police," and "contract") was as related to prosocial behavior as priming spiritual and religious concepts (using the words "spirit," "divine," "God," "sacred," and "prophet"; Shariff & Norenzayan, 2007). Moreover, although the present research was done in the United States where only about 10% of people are atheist, several modern, developed countries are highly nonreligious (Japan, Sweden, Denmark, France, and Germany are all roughly half atheist; Lynn, Harvey, & Nyborg, 2009). Therefore, it could be important for future research to understand prosociality in cultures that are largely nonreligious (Zuckerman, 2009).

Although we chose to focus on two terms to describe religious or spiritual belief: "religious" and "spiritual," many other such concepts exist. For example, future research could examine how a variety of terms were tied to prosociality, labels such as "mystical," "devout," "reverent," "pious," "prayerful," "godly," "agnostic," or "atheistic." By examining these diverse labels, and investigating them across languages and cultures, research will enable a deeper understanding of the implications of and ways in which individuals self-label their religious and spiritual identities.

Moreover, future work might examine how our religious and spiritual scales are related to some of the other ways in which such aspects have been measured. For example, others have examined extrinsic and intrinsic religiosity (Allport & Ross, 1967; Gorsuch & Venable, 1983). Extrinsic religiosity is the tendency to have religious belief or behaviors because of social rules or values. Example items for extrinsic religiosity include: "I pray mainly because I have been taught to pray" and "I go to church because it helps me to make friends." Intrinsic religiosity, on the other hand, refers to being religious because of an internal, personal belief in its value. Example items include: "I would rather join a Bible study group than a church social group" and "My whole approach to life is based on my religion." This scale is limited in the sense that it is aimed solely at religious individuals. On the other hand, future research might focus specifically on religious individuals and examine the differences between the tendency to be spiritual or have an intrinsic orientation to one's religion.

Implications

What is clear from our results is that spirituality and religiosity, although moderately associated in our samples, deserve separate measurement. Our results showed repeatedly that spirituality and religiosity had differing relationships with compassion and altruism, and that these patterns were even more different when examining the independent effects of either spirituality or religiosity.

These results also help clarify what it means to be spiritual, regardless of one's religious orientation. Spirituality appears to be related to the emotional core of religion, to be an emotional response not only to the divine or the sacred but also to other people. More spiritual individuals seem to have a chronic tendency to be other-oriented and compassionate, and this tendency helps explain their generosity even in contexts in which they do not stand to benefit.

Our research also helps expand our understanding of individual differences and cultural factors that may influence who feels more compassion. For example, people of lower socioeconomic status seem to carry with them a tendency to feel compassion and be other-oriented, and this helps explain their greater tendency to be altruistic (Piff, Kraus, Côté, Cheng, & Keltner, 2010). Moreover, people living in rural areas are more altruistic than people living in cities (Bierhoff, 2002). Spirituality, too, appears to be a factor that influences altruism.

Conclusion

Even though there are diverse and distinct causes of prosocial behavior (Penner, Dovidio, Piliavin, & Schroeder, 2005), and correlation does not equal causation, prior work and the current findings converge on the claim that spirituality is related to prosocial tendencies in important and unique ways. Previous research suggests that religiosity may promote prosociality, for example, by encouraging reputational concerns (Norenzayan & Shariff, 2008) or by creating a shared identity (Graham & Haidt, 2010). Our research suggests that spirituality may give rise to prosociality because of its strong association with compassion and concern for others' welfare. Our findings argue that spirituality—above and beyond religiosity—may be uniquely associated with greater compassion and enhanced altruism toward strangers. It may be that encouraging spirituality, rather than encouraging other aspects of religiosity, would lead to greater kindness, generosity, compassion, and altruism.

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