



Intercultural non-conscious influences: Prosocial effects of Buddhist priming on Westerners of Christian tradition

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ABSTRACT

Prosocial concepts and behavior are often found to be activated when participants are primed with concepts of their own religious cultural tradition. We investigated whether similar effects can be found when people (Westerners of Christian tradition) are primed with concepts of a different from their own religious cultural tradition (Buddhist and Islamic). Participants (104 young Belgian adults) were randomly assigned to three conditions. They were supraliminally primed with either Buddhist or Islamic images; or they were not primed (control condition). Priming Buddhism increased prosocial intentions (spontaneous sharing of hypothetical gains), and decreased, among participants highly valuing universalism, implicit prejudice toward an ethnic outgroup. Priming Islam had no effect on prosociality or prejudice. The findings suggest that concepts from one religious and cultural context are transposable, under some conditions, to another religious and cultural context and can influence even implicit social cognition.

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1. Introduction

Across cultural contexts, religions emphasize prosocial values and ideals (Habito & Inaba, 2006), even if the latter are not purely altruistic (Neusner & Chilton, 2005). Religiosity is related to highly valuing benevolence among Christians, Jews, and Muslims (Saroglou, Delpierre, & Dernelle, 2004, for a meta-analysis), as well as Buddhists (Saroglou & Dupuis, 2006). In very recent years, priming experiments have confirmed the hypothesized causal direction in which religious concepts, texts, and places activate prosocial concepts and behaviors such as generosity, cooperation, volunteering, and low retaliation, most often regardless of participants' individual religiosity (Pichon, Boccato, & Saroglou, 2007; Shariff & Norenzayan, 2007; see also Ahmed & Salas, 2011; Pichon & Saroglou, 2009; Preston, Ritter, & Hermandez, 2010; Saroglou, Corneille, & Van Cappellen, 2009, Study 1; Sasaki et al., in press; Tsang, Schulwitz, & Carlisle, 2012).

In these studies, participants were primed with concepts of their own (mostly Christian) religious tradition. However, what the effects would be if participants were primed with non-Christian religious primes? In other words, is hetero-religious priming effective at activating prosociality even among believers and non-believers of a different religious/cultural tradition?

This is the question addressed in the present study. Posing this question has implications on at least two theoretical levels. First, is there something culturally universal about religion (i.e., its capacity to activate prosociality) beyond religious and cultural barriers? Or, alternatively, does hetero-religious priming activate mistrust in others, especially outgroup members, and thus decrease prosociality? Second, more broadly, is implicit cognition mainly limited by cultural group barriers? Or,

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alternatively, can cultural concepts (e.g., Eastern Buddhism's tolerance and compassion) transpose on different cultural groups and thus activate, even non-consciously, corresponding attitudes and behaviors in a different than the origin cultural context (e.g., Westerners of Christian tradition)? Below we detail these two theoretical issues and further describe our specific hypotheses and the ways in which we have operationalized them in the present study.

1.1. Consequences of hetero-religious priming

Little if anything is known regarding whether religion's role with respect to many individual outcomes (well-being, self-control, prosocial tendencies, conservative morality, prejudice toward outgroups; Hood, Hill, & Spilka, 2009) is due to mechanisms and effects of one's own religious culture or, rather, is due to more universal religious ideas, values, and practices (see for this debate: Belzen, 2010; Saroglou & Cohen, *in press*). Regarding experimental findings in particular, two existing studies seem to provide divergent evidence on this issue.

In the first study, North American participants of Christian tradition who were experimentally reminded of their mortality, expressed stronger beliefs in the power of not only (Christian) God, but also of culturally alien supernatural agents, i.e., Buddha and Shamanic spirits (Norenzayan & Hansen, 2006). Obviously, others' supernatural agents can also be seen as powerful and helpful in difficulties. In the second study, Christians, mostly from the US, who were primed with the Golden Rule attributed to Buddha, showed higher explicit (but not implicit) antigay attitudes (Vilaythong, Lindner, & Nosek, 2010). The authors interpreted their findings as suggesting that "when a tolerance message comes from a religious outgroup figure, it does not increase but instead may decrease tolerance toward another outgroup" (p. 502). Note, however, that in that study even priming participants with the Golden Rule attributed to Jesus did not weaken antigay attitudes, a finding that may call into question the interpretation of the authors based on the in/outgroup distinction. Moreover, homosexuals are known to be a strong target of religious prejudice (Hood et al., 2009) and antigay attitudes may not be an optimal way to test the hetero-religious priming-prosociality hypothesis.

Very likely, the effects of a religious culture that is different from one's own may importantly depend on the nature of the domain concerned. As far as prosocial tendencies in general are concerned, given the universality of various religions in promoting prosocial and compassionate values (Habito & Inaba, 2006), we postulated that priming participants (Westerners of Christian tradition) with religious elements from other religions (Buddhism and, for comparison reasons, Islam) would increase participants' prosocial tendencies.

1.2. Intercultural implicit cognition

Contrary to the religious domain, where there is almost no research on the non-conscious influences of "foreign" religious aspects from another cultural *milieu*, there is interesting research on non-conscious influences of foreign cultural dimensions. Indeed, probably due to the "culturally erosive" effects of globalization (Chiu, Gries, Torelli, & Cheng, 2011), priming people with elements from another culture often activates concepts and behaviors consistent with the primed construct. For instance, European Americans who were primed with East Asian culturally laden locations and the East Asian yin-yang symbol showed attitudes (anticipated greater change) that were consistent with East Asians' typical endorsement of greater change in the world (Alter & Kwan, 2009). Similarly, German students, belonging to an individualistic culture with independent rather than interdependent self-construal, experienced more pride when thinking about the achievements of others after being primed with the interdependent self-construal, typical of collectivistic societies (Neumann, Steinhäuser, & Roeder, 2009).

Given that religions can be considered as part of cultures, if not as cultural systems themselves (Cohen, 2009; Saroglou & Cohen, 2011), and taking into account the increasing cultural globalization, also occurring in the religious domain, we expected hetero-religious priming to be effective in increasing Westerners' prosociality. We investigated particularly whether or not this would be true for Buddhism, a religion which reflects, for both religious and (Eastern) cultural reasons, love, compassion, interdependence, and dialecticism, i.e., tolerance of contradictions (Davidson & Harrington, 2002; Goodman, 2009; Ma-Kellams, Spencer-Rodgers, & Peng, 2011). We also added Islamic religious primes to determine whether the above-expected effects are specific to Buddhism or can be more broadly generalized to other religions.

1.3. Two sides of prosociality: generosity and tolerance

In the present study we focused on two indicators of prosociality: (a) generosity, measured as the spontaneous willingness to share hypothetical gains rather than keeping them for oneself, and (b) outgroup tolerance, i.e., decreased prejudice of an ethnic outgroup. These two indicators may not function equally. Indeed, religious priming has typically been found to have an effect on prosociality, in particular when the targets of the prosociality are partners with whom the subject shares everyday interactions (see the many studies cited above). The impact of religious priming on (decreased) prejudice is less clear.

In one study, the prosocial outcomes of (homo-)religious priming were limited to ingroups, not extending to ethnic outgroups (Pichon & Saroglou, 2009). In three other studies, priming religion in general, or priming specific, coalitional, aspects of it, increased negative attitudes and prejudice against ethnic, religious, or moral outgroups (Johnson, Rowatt, &

LaBouff, 2010, 2012; LaBouff, Rowatt, Johnson, & Finkle, 2011).² However, two other studies show that exposing religious people (in fact, fundamentalists) to biblical texts praising prosocial and compassionate values decreases prejudice and increases prosociality toward ethnic, moral, and religious outgroups (Blogowska & Saroglou, *in press*; Rothschild, Abdollahib, & Pyszczynski, 2009).

Consequently, we expected hetero-religious (Buddhist and Islamic) priming to increase generosity in general (spontaneous willingness to share hypothetical evidence) among Westerners of Christian tradition. Our expectations were less pronounced with regard to tolerance, measured as a decrease in attitudes of prejudice toward an ethnic outgroup. Given the ethnicity of our participants (French-speaking Belgians living in Wallonia) we selected Flemish as a typical strong ethnic (but not national) outgroup (Luminet, 2012). Also, given the advantages of using implicit rather than explicit measures of prejudice in avoiding social desirability concerns, which are particularly relevant in the context of religion (Sedikides & Gebauer, 2010), we used an Implicit Association Test to measure ethnic prejudice. Taking into account the above cited research on religious priming, prosociality, and prejudice, we were more cautious in exploring whether hetero-religious (Buddhist and Islamic) priming would activate tolerance (decreased prejudice) of an ethnic outgroup. The effects would be less clear, inexistent, or depending on individual dispositions.

1.4. *The moderating role of individual dispositions*

Although many experiments show that the social effects of religious priming and similar relevant manipulations apply equally to believers and non-believers, some studies show that the effects are stronger for, or only manifest among, religious participants. Indeed, the prosocial effects of Sunday, in comparison to weekdays (Malhotra, 2010), and the induction of self-transcendent positive emotions (Van Cappellen & Saroglou, 2012), as well as the antisocial effects of religious texts legitimizing violence (Bushman, Ridge, Das, Key, & Busath, 2007; Blogowska & Saroglou, *in press*) are observed more or only among religious participants.

This is in line with broader research evidence according to which primes are more or only effective among participants who place importance on the activated construct or behavior in their life in terms of personal dispositions and values (e.g., Meier, Robinson, & Wilkowski, 2006; Verplanken & Holland, 2002) and is strongly associated with the primed construct in long-term memory (Bargh & Barndollar, 1996). For instance, religious priming activates submission to the experimenter, conformity to informational influence, and rigid deontological morality only among participants who are high in dispositional submissiveness themselves; it is only among these participants that religious priming also activates submission-related concepts (Saroglou et al., 2009; Van Cappellen, Corneille, Cols, & Saroglou, 2011; Van Pachterbeke, Freyer, & Saroglou, 2011). We thus expected a moderating role of individual differences, with the hypothesized prosocial effects of hetero-religious priming to be stronger among people with high levels of religiosity and/or prosocial values.

1.5. *The present study*

In summary, we hypothesized that priming Westerners of Christian tradition (native Belgians) with hetero-religious concepts (i.e., Buddhist and Islamic) would increase or activate (a) spontaneous prosocial intentions to share hypothetical gains with others; and, to a lesser extent, (b) tolerance toward an ethnic outgroup (Flemish), i.e., lower levels of implicit attitudes of prejudice, in comparison with a control (no priming) condition. Individual religiosity and importance attributed to the value of Universalism were also measured as possible moderating factors, with those scoring highly on these measures showing more sensitivity to the priming effects.

Given the importance suggested by previous research of avoiding religious primes that denote exclusively coalitional or positive aspects of religion (Ginges, Hansen, & Norenzayan, 2009; Pichon et al., 2007; Preston et al., 2010), we used primes that refer to religion as a whole, i.e., personal and collective aspects, and were neither highly positive nor negative in terms of valence. Moreover, in order to avoid using words that may be either culturally/religiously quasi-universal (e.g., *prayer*), or fully specific and thus incomparable (e.g., *Christ, Mohamed, Buddha*), we used pictures that denote activities that are similar across the two religious traditions and familiar to participants of Christian background (prayer/meditation, effigies/places) but also, uniquely and unambiguously referring to the specific religious and cultural context, i.e., Buddhism and Islam.

2. Method

2.1. *Participants*

Participants were 117 students at a Belgian University (Wallonia region) who took part in the study for credit for their introduction to psychology course. We excluded from our data analyses three participants who self-identified as Muslims,

² We do not consider here additional studies showing other antisocial effects of religious priming, such as aggression, revenge, or punishment, because in these studies those effects were found (a) for people with dispositional submissiveness, (b) for targets which threaten the values or the group's existence, and/or (c) for primes consisting of biblical texts legitimizing violence (Bushman et al., 2007; Ginges et al., 2009; McKay, Efferson, Whitehouse, & Fehr, 2011; Saroglou et al., 2009).

one participant who self-identified as Buddhist, and nine participants who reported citizenship other than Belgian. The remaining 104 participants were all French-speaking Belgian citizens, had been raised in a society marked by Christian tradition, and self-identified as Catholics (57), atheists (33), agnostics (12), or “other” (2). Their age ranged from 18 to 23 ($M = 19.6$) and they were predominantly female (90%).

2.2. Material and procedure

2.2.1. Priming material

Participants were randomly assigned to three conditions: Buddhist priming, Islamic priming, or the control condition (no priming). Across conditions, participants completed the experiment in the same lab. In the Buddhist priming condition, three color photos (20 cm × 24 cm) depicting, respectively, a Buddhist individual in meditation, a collective Buddhist meditation, and a Buddhist statue, were inserted into three posters (30 cm × 40 cm) that were hung on the wall. The Islamic priming condition consisted of three color photos of the same size as those in the Buddhist priming condition (also inserted into three posters of the same size), which depicted similar themes (private Islamic prayer, collective Islamic prayer, and a Islamic mosque). In order to maximize randomness, the three pictures were changed (or withdrawn, in the control condition) after each group of participants exited the lab. The two sets of three pictures were selected following a pre-test in which among 29 evaluators rated 10 pictures for (a) their relevance as related to religion, respectively Buddhism or Islam (7-point scale ranging from 1 = *not all related* to 7 = *totally related*) and (b) valence (similarly, from 1 = *negative* to 7 = *positive*). The six selected pictures were all very religious (scores > 6) and neutral in valence (scores between 3 and 5). They were equal in mean typicality for religiosity, $M_s = 6.57, 6.55$ ($SD_s = 0.45, 0.55$) and mean valence, $M_s = 4.52, 4.64$ ($SD_s = 0.50, 0.51$), $t_s(28) = 0.28, 1.37$, n.s. In order to provide the opportunity for participants to have a look around the room and to see the pictures, rather than being solely focused on the computer screen, before the experiment started participants were left waiting for 2 min. Additionally, during the experiment, the experimenter advised participants to take a breath after each IAT block (see below) before returning their focus to the computer screen.

2.2.2. Implicit measure of prejudice

When participants entered the lab in small groups (3–6 persons), they were welcomed and asked to complete a computer task. This was in fact an Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) measuring ethnic prejudice. In the context of Belgium, this concerned prejudice of Walloons (French-speaking Belgians) against the Flemish (Dutch-speaking Belgians).

The IAT consisted of five blocks. The targets categories used were *Walloon* and *Flemish*, whereas the attributes categories were *positive* and *negative words*. The associated stimuli for targets were 10 Walloon and 10 Flemish first names and stimuli for attributes were 10 positive and 10 negative words. Each of the discrimination tasks (Blocks 1, 2, and 4) consisted of a total of 20 trials. Each of the combined tasks (Blocks 3 and 5) comprised 40 trials with targets and attributes presented in a random order. In each trial, the participant had to focus on a blank screen for 395 ms, at which point a target or an attribute appeared on the screen for 10,000 ms, a time during which participants had to press the key corresponding to the correct category. Feedback followed the response, indicating the participants' accuracy and response times. Participants were then allowed to make some classification errors. The critical comparison between the prejudice-congruent sorting task (Block 3: Walloon first names + positive words/Flemish first names + negative words) and the prejudice-incongruent sorting task (Block 5: Walloon first names + negative words/Flemish first names + positive words), provided us with a measure of prejudice against Flemish people. Each block started with short instructions that described the assignment of the two response keys (i.e., “s” and “l”) for the stimulus categories. Participants were told to respond as quickly and as accurately as possible.

The 10 Flemish and the 10 Walloon first names were selected after a pre-test conducted with a different group of another 29 psychology students. These participants rated 20 male and 20 female Flemish first names and 20 male and 20 female Walloon first names on (a) the supposed ethnic/linguistic origin of those first names (Flemish and Walloon) and (b) the supposed gender (male and female) on a Likert scale ranging from 1 to 7 (respectively, from *Walloon* to *Flemish*, and from male to female). Out of the names rated to be most typically Flemish or Walloon ($M > 6.5$ for Flemish, $M < 1.5$ for Walloons), we chose the five most representative female and male first names ($M > 6.5$ for female, $M < 1.5$ for male).

2.2.3. Prosocial behavior

After completing the IAT, participants were informed that they would be asked additional questions. They were asked to write down what they would do if they won 100,000 euros, specifying each expenditure and the percentage of money they would allocate for each one. The percentage of money participants allocated to others (e.g., family, friends, and charities) and not to themselves was coded as a measure of prosociality for the analyses.

2.2.4. Individual differences

Post-experimentally, we measured individual differences on (a) the value of universalism, using the eight items from the Schwartz (1992) Value Survey, and (b) religiosity, using a three-item index measuring the importance of God in life, the importance of religion in life, and frequency of prayer (Saroglou & Muñoz-García, 2008). For both measures, 7-point Likert scales were used. Reliabilities were satisfactory, with respective $\alpha_s = .80$ and $.85$.

Table 1
Means and standard deviations for all measures, distinctly by condition.

Measures	Buddhist priming <i>M (SD)</i>	Islamic priming <i>M (SD)</i>	Control condition <i>M (SD)</i>
IAT-Compatible task (ms)	671 (86.04)	672 (63.69)	662 (73.68)
IAT-Incompatible task (ms)	913 (132.91)	933 (139.38)	913 (153.47)
Prosociality (sharing, %)	32.93 (26.77)	21.44 (23.75)	20.85 (19.44)
Universalism	5.41 (0.87)	5.60 (0.54)	5.51 (0.72)
Religiosity	2.67 (1.35)	2.58 (1.06)	2.65 (1.28)

At the end of the experiment, participants were debriefed and were asked whether they guessed what the objective of the study was and whether they noticed the themes of the pictures hanged in the lab room. No participant guessed the study's objectives or noticed/remembered what was depicted in the photos.

3. Results

For the IAT results, we followed the data reduction procedure described by Greenwald, Nosek, and Banaji (2003). Indeed, this new algorithm significantly outperforms the conventional procedure that used log-transformation (Greenwald et al., 1998). After checking for subjects for whom more than 10% of the trials have latencies lower than 300 ms (0 subjects), we replaced error latencies with respective block mean plus 600 ms.

Descriptive statistics for all measures are shown in Table 1, distinctly by condition. There were no differences between conditions for religiosity and universalism, $F_s(2, 103) = 0.09$ and 0.54 , n.s. A repeated-measures ANOVA analysis confirmed the classic discrimination effect of the IAT, $F(1, 103) = 126.88$, $p < .001$, partial $h^2 = .62$. Indeed, participants needed more time to classify first names in a prejudice inconsistent manner (non-compatible task) than in a prejudice consistent manner (compatible task). In other words, Walloon participants showed prejudice toward Flemish targets.

In order to test the effect of priming on prosociality, we computed a one-way ANOVA with condition as the between-subject variable. A main effect of condition was found, $F(2, 101) = 2.85$, $p = .06$, partial $h^2 = .05$. Comparing each priming condition to the control condition (Tukey post hoc tests) revealed that the amount of hypothetically received money that participants were spontaneously willing to allocate to others was higher after participants were primed with Buddhist images than compared to the control condition, $F(1, 70) = 4.93$, $p = .03$, partial $h^2 = .07$. No difference was found between the Islamic priming and the control conditions, $F(1, 71) = 0.01$, n.s. To test for moderators, we computed a moderated multiple regression of prosociality on (a) condition (Buddhist priming versus control), (b) religiosity and universalism, and (c) the interactions of the later with condition. As shown in Table 2, in addition to the main effect of the condition, there were main effects of religiosity and universalism, but there were no interaction effects. Computing the above moderated multiple regression only for female participants (in order to control for possible "noise" by the few male participants) did not influence the main effect of priming, $\beta = .27$, $p = .01$.

In order to test the effects of priming on prejudice, we conducted a 2 (block: compatible and non-compatible) \times 3 (condition: Buddhist prime, Islamic prime, and control) repeated-measures ANOVA, with block as a within-subject variable and condition as a between-subject variable. There was no main effect of condition, $F(2, 101) = 0.159$, n.s. We subsequently focused on the comparison between the Buddhist priming and the control conditions by performing a moderated multiple regression, similar to the above, in order to test the possible role of moderators (religiosity and universalism) on the IAT effect. As the dependant variable of prejudice against the Flemish, we used the incompatible task response time minus the compatible task response time divided by its associated pooled-trials standard deviation. As predicting variables we included (after centering them) condition, religiosity, universalism, and their interactions with condition (see also Table 2). There were no main effects of the priming and the individual differences measures, but there was a significant interaction between condition and universalism. A simple slope analysis revealed that the Buddhist prime had no effect on prejudice among participants who place little value on universalism (one SD below the mean), $\beta = .25$, n.s., but decreased prejudice among participants who value universalism highly (one SD above the mean), $\beta = -.33$, $p = .05$. Computing the above moderated

Table 2
Moderated multiple regression of prosociality and prejudice on condition (Buddhist priming versus control), religiosity and universalism, and their interaction with condition.

Predictors	Prosociality			Prejudice		
	β	<i>t</i> -Test	<i>p</i>	β	<i>t</i> -Test	<i>p</i>
Condition	.28	2.63	.010	-.02	-0.20	.840
Religiosity	.20	1.89	.063	.02	0.19	.846
Universalism	.35	3.27	.002	-.04	-0.34	.733
Condition \times religiosity	-.06	-0.57	.571	.16	1.41	.163
Condition \times universalism	.14	1.30	.199	-.31	-2.64	.010

$R^2 = .26, .12$.

multiple regression only for female participants maintained the significant interaction of condition with universalism as predictor of (low) prejudice in the Buddhist priming condition, $\beta = -.30, p = .01$.

4. Discussion

In the present experiment, priming Western (Belgian) participants of Christian tradition with pictures depicting typical, personal and collective, aspects of Buddhism increased participants' prosociality, compared to a control condition. This occurred through the increase of participants' spontaneous willingness to share hypothetical gains with others and the decrease of implicit prejudice toward an ethnic outgroup (Flemish for Walloons). These effects were not obtained when participants were primed with aspects of Islam that were similar in content and depicted form, and pretested to be equal to the Buddhist ones in religious typicality and valence. Finally, the effect of Buddhist priming on generous behavioral intention was independent of participants' religiosity and endorsement of the value of universalism, whereas the same effect on outgroup tolerance was present only among those who highly valued universalism.

Taken together, the results partially confirm (a) the hetero-religious prosociality hypothesis and (b) the idea of implicit intercultural cognition in the context of globalization. First, religious primes activate prosocial behavior not only when the primes come from the participants' own religious and cultural tradition (almost all previous studies cited in Section 1 have shown such effects within a Christian homo-religious context), but also when the primes come from some other religious and cultural traditions such as Buddhism. Obviously, associations, conscious or non-conscious, between religion and prosocial behavior may exist across various cultures and religions and can be transposed to "foreign" religious and cultural contexts. And, given the high percentage of non-believers in the present study as well as the lack of moderation of the effects by individual religiosity, these associations seem to exist also among non-believers. Second, not all religious cultures have the potential to activate prosociality in other than the origin contexts. Although Buddhism is equally, if not less, known and present in the West in general, and Belgium in particular, it differed from Islam in its capacity to non-consciously activate prosociality among Westerners.

The latter difference suggests that the cultural erosion in the context of globalization alone is not sufficient to explain why Buddhist but not Islamic priming activated prosociality among Westerners. It is very likely that the more positive (social) perception in general, and in particular the stronger association of Buddhism and Eastern culture with compassion and interdependence in particular, render Buddhist priming powerful enough to increase prosocial tendencies among believers and non-believers of Christian tradition. Note also that world events of the last decade and frequent news in the media may have increased Westerners' tendency to associate Islam with violence. Interestingly, as indicated by unpublished data collected by [Van Pachetrebere and Saroglou \(2011\)](#) among 174 Belgian students, students are clearly more open to the idea of having a Buddhist as neighbor ($M = 5.02$), political representative (4.43), and husband/wife (4.06) than a Muslim (respective M s = 3.91, 3.16, 2.87), and perceived the latter to be more different (5.24) than the former (4.30) from themselves (all scores were on 7-point scales ranging from 1 to 7), global $F(1, 172) = 117.18, p < .001$.

Note that, as suspected, the priming effects were less large as far as the reduction of prejudice was concerned; only among people who highly value universalism did Buddhist priming increase tolerance of the ethnic outgroup. This is in line with the idea that priming effects occur to a greater degree, or only, when the primed construct corresponds with personal dispositions (e.g., prosocial orientation, when priming prosociality/aggression: [Meier et al., 2006](#); [Verplanken & Holland, 2002](#)).

To better evaluate this finding one must take into account the previous evidence, reviewed in the introduction on the effects of (Christian) religious priming on (Christian) participants' prejudice. Those studies taken together indicate that, when results are significant, and when participants are not exposed to biblical texts praising either prosociality or violence, Christian priming increases different types of prejudice, i.e., religious, ethnic, and moral ([Johnson et al., 2010, 2012](#); [LaBouff et al., 2011](#)). The fact that the opposite was true for Buddhist primes suggests that, at least in people's mind, Buddhism, an Eastern religion/worldview, may be more strongly associated with prosocial values and interdependence than Christian religion. Indeed, in a study among Belgians who had converted to Buddhism ([Saroglou & Dupuis, 2006](#)), participants affirmed that a major difference they found between Buddhism and Christianity was the former's tolerance and lack of dogmatism (unpublished data).

The present findings may be seen as in contrast with those of a previous study showing that priming Christians with the Golden rule attributed to Buddha increased explicit antigay attitudes ([Vilaythong et al., 2010](#)). However, important differences exist between the two studies in many respects, i.e., respectively: picture- vs. word-based primes, ethnic vs. antigay prejudice (the latter known to be stronger within a religious context; [Leak & Finken, 2011](#)), implicit form vs. explicit form of prejudice, Belgian participants living in a highly secularized country vs. mostly US participants, and moderation of personal prosocial values vs. main effects of the Buddhist hetero-religious priming.

This study, however, also has some limitations and should be considered as rather exploratory. The sample was essentially composed of female students living in a highly secularized society which shows a certain degree of fascination with Buddhism and mistrust of Islam. Generalization to other cultural contexts is thus not guaranteed. Moreover, the explanatory mechanisms of the prosocial effects of Buddhist priming on another religious cultural context have yet to be investigated. Finally, religiosity and universalism were measured at the end of the experiment. This was preferable than having administered, for instance, religiosity before the experiment (then, religiosity could have acted itself as a prime), but it would possibly have been even preferable to have acquired these measurements weeks earlier. However, this was not practically

possible in the context of the present study. In addition, the two measures were not affected by the priming; and both can reasonably be perceived as measures of mostly stable attitudes.

A very interesting issue worth investigating in future research is whether *multi-religious* priming may be even more effective in activating prosociality and reducing prejudice. There is experimental evidence showing that people become more creative after viewing symbols from their own culture *and* a foreign culture (mixed cultural priming), whereas viewing symbols of one's own culture or a foreign culture alone (monocultural priming) has no creative benefit (Leung & Chiu, 2010). It may be that mixing religious elements from more than one religious and cultural context increases people's, including believers', creativity in the way in which they view the similarities and differences between religions, thus overcoming inter-religious barriers and reducing inter-religious and inter-cultural prejudice.

References

- Ahmed, A. M., & Salas, O. (2011). Implicit influences of Christian religious representations on dictator and prisoner's dilemma game decisions. *Journal of Socio-Economics*, *40*, 242–246.
- Alter, A. L., & Kwan, V. S. Y. (2009). Cultural sharing in a global village: Evidence for extracultural cognition in European Americans. *Journal of Personality and Social Psychology*, *96*, 742–760.
- Bargh, J. A., & Barndollar, K. (1996). Automaticity in action: The unconscious as repository of chronic goals and motives. In P. M. Gollwitzer, & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 457–481). New York: Guilford.
- Belzen, J. A. (2010). *Towards cultural psychology of religion: Principles, approaches, applications*. New York: Springer.
- Blogowska, J., & Saroglou, V. For better or worse: Fundamentalists' attitudes towards outgroups as a function of exposure to authoritative religious texts. *International Journal for the Psychology of Religion*, in press.
- Bushman, B. J., Ridge, R. D., Das, E., Key, C. W., & Busath, G. L. (2007). When God sanctions killing: Effect of scriptural violence on aggression. *Psychological Science*, *18*, 204–207.
- Chiu, C.-y., Gries, P., Torelli, C. J., & Cheng, S. Y. Y. (2011). Toward a social psychology of globalization. *Journal of Social Issues*, *67*, 663–676.
- Cohen, A. B. (2009). Many forms of culture. *American Psychologist*, *64*, 194–204.
- Davidson, R. J., & Harrington, A. (Eds.). (2002). *Visions of compassion: Western scientists and Tibetan Buddhists examine human nature*. New York: Oxford University Press.
- Ginges, J., Hansen, I., & Norenzayan, A. (2009). Religion and support for suicide attacks. *Psychological Science*, *20*, 224–230.
- Goodman, C. (2009). *Consequences of compassion: An interpretation and defense of Buddhist ethics*. New York: Oxford University Press.
- Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology*, *74*, 1464–1480.
- Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the Implicit Association Test: I An improved scoring algorithm. *Journal of Personality and Social Psychology*, *85*, 197–216.
- Habito, R. L. F., & Inaba, K. (Eds.). (2006). *The practice of altruism: Caring and religion in global perspective*. Cambridge: Cambridge Scholars Press.
- Hood, R. W., Jr., Hill, P. C., & Spilka, B. (2009). *The psychology of religion: An empirical approach* (4th ed.). New York: Guilford Press.
- Johnson, M. K., Rowatt, W. C., & LaBouff, J. (2010). Priming Christian religious concepts increases racial prejudice. *Social Psychological and Personality Science*, *1*, 119–126.
- Johnson, M. K., Rowatt, W. C., & LaBouff, J. P. (2012). Religiosity and prejudice revisited: In-group favoritism, out-group derogation, or both? *Psychology of Religion and Spirituality*, *4*, 154–168.
- LaBouff, J. P., Rowatt, W. C., Johnson, M. K., & Finkle, C. (2011). Differences in attitudes toward outgroups in religious and nonreligious contexts in a multinational sample: A situational context priming study. *International Journal for the Psychology of Religion*, *22*, 1–9.
- Leak, G. K., & Finken, L. L. (2011). The relationship between the constructs of religiousness and prejudice: A structural equation model analysis. *International Journal for the Psychology of Religion*, *21*, 43–62.
- Leung, A. K.-y., & Chiu, C.-y. (2010). Multicultural experience, idea receptiveness, and creativity. *Journal of Cross-Cultural Psychology*, *41*, 723–741.
- Luminet, O. (Ed.). (2012). *Belgique-België: Un état, deux mémoires collectives?* [Belgium-Belgium: One state, two collective memories?]. Wavre: Mardaga.
- Ma-Kellams, C., Spencer-Rodgers, J., & Peng, K. (2011). I am against us? Unpacking cultural differences in ingroup favoritism via dialecticism. *Personality and Social Psychology Bulletin*, *37*.
- Malhotra, D. (2010). (When) are religious people nicer? Religious salience and the Sunday effect on pro-social behavior. *Judgment and Decision Making*, *5*, 138–143.
- McKay, R., Efferson, C., Whitehouse, H., & Fehr, E. (2011). Wrath of God: Religious primes and punishment. *Proceedings of the Royal Society of London Series B – Biological Sciences*, *278*(1713), 1858–1863.
- Meier, B. P., Robinson, M. D., & Wilkowski, B. M. (2006). Turning the other cheek: Agreeableness and the regulation of aggression-related primes. *Psychological Science*, *17*, 136–142.
- Neumann, R., Steinhäuser, N., & Roeder, U. R. (2009). How self-construal shapes emotion: Cultural differences in the feeling of pride. *Social Cognition*, *27*, 327–337.
- Neusner, J., & Chilton, B. D. (Eds.). (2005). *Altruism in world religions*. Washington, DC: Georgetown University Press.
- Norenzayan, A., & Hansen, I. G. (2006). Belief in supernatural agents in the face of death. *Personality and Social Psychology Bulletin*, *32*, 174–187.
- Pichon, I., Boccato, G., & Saroglou, V. (2007). Nonconscious influences of religion on prosociality: A priming study. *European Journal of Social Psychology*, *37*, 1032–1045.
- Pichon, I., & Saroglou, V. (2009). Religion and helping: Impact of target, thinking styles and just-world beliefs. *Archive for the Psychology of Religion*, *31*, 215–236.
- Preston, J. L., Ritter, R. S., & Hernandez, J. I. (2010). Principles of religious prosociality: A review and reformulation. *Social and Personality Psychology Compass*, *4*, 574–590.
- Rothschild, Z. K., Abdollahib, A., & Pyszczynski, T. (2009). Does peace have a prayer? The effect of mortality salience, compassionate values, and religious fundamentalism on hostility toward out-groups. *Journal of Experimental Social Psychology*, *45*, 816–827.
- Saroglou, V., & Cohen, A. B. (2011). Psychology of culture and religion: Introduction to the JCCP special issue. *Journal of Cross-Cultural Psychology*, *42*, 1309–1319.
- Saroglou, V., & Cohen, A. B. Cultural and cross-cultural psychology of religion. In R. F. Paloutzian & C. L. Park (Eds.), *Handbook of the psychology of religion and spirituality* (2nd ed.). New York: Guilford Press, in press.
- Saroglou, V., Corneille, O., & Van Cappellen, P. (2009). Speak, Lord your servant is listening: Religious priming activates submissive thoughts and behaviors. *International Journal for the Psychology of Religion*, *19*, 143–154.
- Saroglou, V., Delpierre, V., & Dernelle, R. (2004). Values and religiosity: A meta-analysis of studies using Schwartz's model. *Personality and Individual Differences*, *37*, 721–734.
- Saroglou, V., & Dupuis, J. (2006). Being Buddhist in Western Europe: Cognitive needs, prosocial character and values. *International Journal for the Psychology of Religion*, *16*, 163–179.

- Saroglou, V., & Muñoz-García, A. (2008). Individual differences in religion and spirituality: An issue of personality traits and/or values. *Journal for the Scientific Study of Religion*, 47, 83–101.
- Sasaki, J. Y., Kim, H. S., Mojaverian, T., Kelley, L. D. S., Park, I. Y., & Janusonis, S. Religion priming differentially increases prosocial behavior among variants of the dopamine D4 receptor (DRD4) gene. *Social Cognitive and Affective Neuroscience*, in press.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. Zanna (Ed.), *Advances in experimental social psychology* (pp. 1–65). Orlando, FL: Academic Press.
- Sedikides, C., & Gebauer, J. E. (2010). Religiosity as self-enhancement: A meta-analysis of the relation between socially desirable responding and religiosity. *Personality and Social Psychology Review*, 14, 17–36.
- Shariff, A. F., & Norenzayan, A. (2007). God is watching you: Priming God concepts increases prosocial behavior in an anonymous economic game. *Psychological Science*, 18, 803–809.
- Tsang, J.-A., Schulwitz, A., & Carlisle, R. D. (2012). An experimental test of the relationship between religion and gratitude. *Psychology of Religion and Spirituality*, 4, 40–55.
- Van Cappellen, P., Corneille, O., Cols, S., & Saroglou, V. (2011). Beyond mere compliance to authoritative figures: Religious priming increases conformity to informational influence among submissive people. *International Journal for the Psychology of Religion*, 21, 97–105.
- Van Cappellen, P., & Saroglou, V. (2012). Awe activates religious and spiritual feelings and behavioral intentions. *Psychology of Religion and Spirituality*, 4, 223–236.
- Van Pachterbeke, M., Freyer, C., & Saroglou, V. (2011). When authoritarianism meets religion: Sacrificing others in the name of abstract deontology. *European Journal of Social Psychology*, 41, 898–903.
- Van Pachtrebere, M., & Saroglou, V. (2011). [Religious fundamentalism among students in Belgium]. Unpublished raw data.
- Verplanken, B., & Holland, R. W. (2002). Motivated decision making: Effects of activation and self-centrality of values on choices and behaviors. *Journal of Personality and Social Psychology*, 82, 434–447.
- Vilaythong, O. T., Lindner, N. M., & Nosek, B. A. (2010). Do unto others: Effects of priming the Golden Rule on Buddhists' and Christians' attitudes toward gay people. *Journal for the Scientific Study of Religion*, 49, 494–506.