

Religiosity and Prosocial Behavior Among Churchgoers: Exploring Underlying Mechanisms

Patty Van Cappellen, Vassilis Saroglou & Maria Toth-Gauthier

To cite this article: Patty Van Cappellen, Vassilis Saroglou & Maria Toth-Gauthier (2016) Religiosity and Prosocial Behavior Among Churchgoers: Exploring Underlying Mechanisms, *The International Journal for the Psychology of Religion*, 26:1, 19-30, DOI: [10.1080/10508619.2014.958004](https://doi.org/10.1080/10508619.2014.958004)

To link to this article: <http://dx.doi.org/10.1080/10508619.2014.958004>



Accepted author version posted online: 04 Sep 2014.
Published online: 04 Sep 2014.



[Submit your article to this journal](#)



Article views: 182



[View related articles](#)



[View Crossmark data](#)



Citing articles: 1 [View citing articles](#)

RESEARCH

Religiosity and Prosocial Behavior Among Churchgoers: Exploring Underlying Mechanisms

Patty Van Cappellen

*Department of Psychology
University of North Carolina, Chapel Hill*

Vassilis Saroglou and Maria Toth-Gauthier

*Department of Psychology
Université catholique de Louvain, Belgium*

Research has shown that religious beliefs and practices are related, to some extent, to prosocial behaviors, but less is known about why it is so. In addition, participating in the traditional Christian ritual (Sunday Mass) may be particularly powerful in eliciting prosocial behavior among believers. The present study explores the aspects of the Sunday Mass that may be involved in the activation of religious prosociality. The social, emotional, and cognitive aspects of the Mass were concurrently assessed among churchgoers ($n = 548$) across 20 different parishes. Prosociality was measured by looking at spontaneous intention to share a hypothetical lottery prize. Results showed that a positive relation found between religion and prosociality was mediated by the social aspect of the Mass. Additional analyses revealed that this social aspect also induced the emotion of love, which in turn promoted prosociality.

Numerous studies have shown that major aspects of religiosity (e.g., personal religious belief, church attendance) are positively related to prosociality at least toward non-value-threatening people (for a review, see Preston, Salomon, & Ritter, 2013; Saroglou, 2013). Personal religiosity has been related to various prosocial attitudes and actual behaviors such as cooperation or generosity (Ahmed, 2009; Anderson & Mellor, 2009; Ruffle & Sosis, 2007) and actual costly helping behavior (Blogowska, Lambert, & Saroglou, 2013), typically toward in-group

Correspondence should be sent to Patty Van Cappellen, Department of Psychology, University of North Carolina, Chapel Hill, CB 3270, Chapel Hill, NC 27599, USA. E-mail: pattyv@unc.edu

members. Research using religious priming found that several aspects of religion activated in people's mind lead to increased prosocial behaviors, including generosity and charity (Pichon, Boccato, & Saroglou, 2007; Preston, Ritter, & Hernandez, 2010; Shariff & Norenzayan, 2007), cooperation (Ahmed & Salas, 2013), and nonretaliation (Saroglou, Corneille, & Van Cappellen, 2009). Note too that religious primes (others or sometimes the same) also activate less socially desirable outcomes, such as conformity and submission leading to retaliation among dispositionally submissive participants (Saroglou et al., 2009; Van Cappellen, Corneille, Cols, & Saroglou, 2011) or prejudice toward outgroups (Rowatt, Carpenter, & Haggard, 2014).

Because religion and religiosity are to some extent linked to prosociality, this relation should be strong after attending the regular religious ritual; this has been called the "Sunday effect" (Malhotra, 2010). Religious attendance is, among other religious indicators, a strong correlate of prosocial behavior, such as charitable donation (Bekkers & Wiepking, 2007). This effect holds true even in the context of Eastern religions in Taiwan (Chang, 2006). Religious attendance is also associated with volunteerism (Marris et al., 2000) for both religious and secular organizations (Ruiter & De Graaf, 2006, 2010), cooperation and generosity (Anderson & Mellor, 2009), and religious and secular philanthropy (Bekkers & Wiepking, 2007). In a study by Altemeyer (2010), atheists and agnostics reported giving the least (respectively, 1.7% and 1.7%) of their income to social charities as compared to fundamentalists (3.8%) and regular churchgoers (3.1%). In addition to these findings, Malhotra (2010) found that people who regularly attended church were more likely to give to charity than people who did not regularly attend church. However, this difference was present only on Sundays and not during other days of the week, hence Malhotra's appellation "the Sunday effect."

Attending church seems to boost religious prosociality among churchgoers, but why? What are the underlying mechanisms of such an influence? Many studies have examined the relation between religious attendance and prosociality, but, as pointed out in a recent review (Saroglou, 2013), we miss empirical studies investigating the specific question as to why participating in religious services is related to prosociality. One hypothesis proposed by Malhotra (2010) and others (e.g., see Preston et al., 2013) suggests that attending a religious service may function as a contextual priming of religion, which has been shown to activate, to some extent, prosociality, especially among believers. Regular attendance of religious services could therefore be related to some extent to prosociality because of repetitive religious priming or a priming of a religious mindset. Although this mechanism is plausible and must at least partially explain religious prosociality, no prior research has searched for possible underlying mechanisms of why, among religious people, going to church overall enhances prosociality—always under the condition that the targets are non-value threatening. Here, we argue that beyond religious priming (nonconscious influence), the cognitive, social, and emotional aspects of attending church (as perceived by practitioners) are important to take into account and measured.

In the present study we propose to investigate whether the cognitive, emotional, and social functions of the Mass, as perceived by the religious attendees, explain the relation between religion and prosociality. Building upon other theoretical accounts that explain the broader question of the relation between religion and prosociality, we briefly present the arguments in favor of each of the three functions as possibly involved into religious prosociality.

The *cognitive* function of religious attendance refers to the understanding of the meaning of sacred texts and the personal reflection it promotes. It is mostly delivered through the readings and the sermon. Concerning prosociality more specifically, religious texts contain plenty of

recommendations to take care of the weak and those in need. When these texts are read and explained during the religious service, prosocial values are taught and reactivated. Attendees get a better understanding of religious principles, which may activate the correspondent action tendencies. In sum, a better understanding of biblical and liturgical texts may be one, but likely not the sole, mechanism by which religious attendance affects prosociality.

The *emotional* function of religious attendance refers to the different positive emotions arisen from a religious service (for a review, see Van Cappellen & Rimé, 2014). Past research has shown that religious practices promote positive emotions such as joy, wonder, love, or peace (Hardy, 1979; Hay, 1982; Lambert, Fincham, Braithwaite, Graham, & Beach, 2009). Experimental activation of religious concepts also increases among Christians self-report feeling of love (Kim-Prieto & Diener, 2009). Although these emotions are definitely not restricted to the religious domain and are obviously elicited in secular contexts too, they appear to be a frequent feature of religious rituals. (It is even reasonable to assume that believers attend religious services with the motivation to experience such emotions.) In addition, prosocial tendencies are promoted by general positive affect (Isen, 1987) as well as specific positive emotions of elevation (Schnall, Roper, & Fessler, 2010), gratitude (DeSteno, Bartlett, Baumann, Williams, & Dickens, 2010), and awe (Rudd, Vohs, & Aaker, 2012). In conclusion, positive emotions taken as a whole or separately seem to be another plausible way by which religious attendance promotes some kind of prosociality. In the present study, we look at the mediating role of both the average of several positive emotions and each positive emotion separately.

The most studied aspect of religious attendance is its *social* function, which refers to the feelings of cohesion and support developed by attending a collective ritual (Graham & Haidt, 2010; Rossano, 2012). Collective participation in rituals has been shown to enhance feelings of closeness, perception of social support, and trust among group members, which increases the likelihood of prosociality at least toward ingroup members (Sosis & Alcorta, 2003). Across three studies, Wiltermuth and Heath (2009) have shown that acting in synchrony, like during a religious ritual, increases social attachment among group members and leads to more cooperation even in situations requiring self-sacrifice. Also, participants in a relatedness manipulation condition donated more money to charity than the participants in a neutral condition (Pavey, Greitemeyer, & Sparks, 2011, Study 3). On the contrary, manipulating participants to feel socially excluded decreases the likelihood of prosocial behavior (Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007). Finally, collective rituals increase social group identification and social cohesion. This strengthens shared beliefs (Durkheim, 1912) and confidence in religious teachings (Stark & Finke, 2000), which in turn could be decisive in triggering prosociality. Among the cognitive, emotional, and social functions of the Mass, the latter may be the most important to promote a behavior that is particularly social, prosociality. In addition, the social aspect of the Mass, and especially feelings of closeness and bonding, is supposed to have downward consequences on other aspects of religious attendance. It creates emotional effervescence and enhances emotions' intensity; it gives credibility and power to the words and norms shared by the group (Rossano, 2012).

Overall, the present study aimed to investigate which of the cognitive, emotional, or social aspects of religious attendance is the key ingredient in enhancing religious prosociality. All these three aspects of religious attendance were measured in the same study, and their independent effects were tested (controlling for one another). Despite the fact that each of the three aspects could be a potential mechanism of religious prosociality, we hypothesized that the social aspect

of the Mass is the most likely to be an independent mediator given both past research and its closer proximity (getting along with others) to the construct tested. Prosociality is understood as an act that benefits another person (here, any other) even to the detriment of self's interests. Here we measured prosocial behavioral intention to share with others hypothetical gains (see Clobert & Saroglou, 2013).

METHOD

Participants and Procedure

Procedure and participants are the same as described in Van Cappellen, Toth-Gautier, Saroglou, and Fredrickson (in press). All relevant information is repeated here. Via five contact priests, 1,240 questionnaires were distributed in 20 different Catholic parishes. The parishes were all in the French-speaking part of Belgium and reflect the Belgian (dominant) Catholic landscape with mostly traditional churches in small and larger villages, one parish of the Catholic charismatic renewal, and one university parish. All questionnaires were distributed the same day, which corresponded to a special celebration in Roman Catholic churches: the Whit Monday. We benefited from a somewhat greater crowd because of this special celebration, which is one day after Pentecost and memorializes the Holy Spirit's visit to the apostles. In addition, given that the selection of biblical texts read during the Mass is based on the calendar, this procedure ensured that all participants listened to the same selection.

Before the Mass, questionnaire packets were left near the church seats. At the end of the Mass, each priest briefly explained that the study, carried out by university researchers, was about well-being, and they invited their followers to complete the questionnaire as soon as possible after the Mass. Participants were allowed to take a copy of the questionnaire that they then completed at home. They were given a postage-paid return envelope supplied by the researchers valid for one day after the Mass. This procedure ensured that participants did not complete the questionnaire after a future Mass. Seven participants were not taken into account in the analyses because their religious affiliation was not Christian. The final sample was composed of 548 people (representing a 44% response rate; 55% women; age $M = 55.3$, $SD = 19.2$).

Measures

Religiosity. Participants completed different measures of self-reported religiousness. An index of personal religiousness (Saroglou & Munoz-Garcia, 2008) was composed of three items measuring the importance of God in life, the importance of religion in life (7-point Likert scales) and frequency of prayer (5-point scale: 1 = *a little, for example for exceptional moments in my life*; 2 = *sometimes during the year*; 3 = *at least once a month*; 4 = *every week*; and 5 = *more than once a week*; transformed into a 7-point scale before being averaged with the other items; $\alpha = .77$). Church attendance was measured with one item on the same 5-point scale.

Spirituality. To measure spirituality as a construct partly distinct from religiosity, we used the Spiritual Transcendence Scale (Piedmont, 1999; our French translation). Because of time

constraints, we could not use the full scale. Thus, for the selected subscales of Universality and Connectedness, we used the three items with the highest factor loadings (see Piedmont, 1999, pp. 995–996). Similar to other studies (Van Cappellen & Saroglou, 2012; Van Cappellen, Saroglou, Iweins, Piovesana, & Fredrickson, 2013) we did not include the subscale Prayer Fulfillment because it has explicitly religious content (reference to God and religious practices such as prayer or meditation) and has been found to relate positively to traditional religious attitudes and behaviors (Piedmont, 1999). The following items were included for Universality: “I feel that on a higher level, all of us share a common bond,” “All life is interconnected,” and “There is a higher plane of consciousness or spirituality that binds all people,” and for Connectedness: “Although dead, images of some of my relatives continue to influence my current life,” “I am a link in the chain of my family’s heritage, a bridge between past and future,” and “I still have strong emotional ties with someone who has died.” Reliability for both subscales was satisfactory ($\alpha = .76$).

Mediators: Perception of the cognitive, social, and emotional aspects of religious attendance. The measures used were purposefully developed herein to assess what is specifically involved or experienced during the Mass. Therefore, all items explicitly refer to the Mass or to a specific aspect of the Mass. Items were presented in French; here, we give our English translation. The *cognitive* aspect refers to the potential role the Mass plays in the comprehension of faith and personal reflection. This scale was composed of five items for which reliability was satisfactory ($\alpha = .85$): “The Mass helps me to understand the truths about faith.” “The Mass helps me to understand the meaning of the Bible.” “The Mass helps in my personal reflection.” “I particularly appreciate the homily because the ideas developed allow me to think.” “I particularly appreciate the biblical texts reading because it helps me in my personal reflection.” The *social* aspect refers to the potential role the Mass plays in promoting social connectedness with the parish members. It also is composed of five items for which reliability was satisfactory ($\alpha = .84$): “The Mass allows me to be a part of the great family of believers.” “During the Mass, I feel that I maintain strong bonds with the members of my parish.” “During the Mass, I feel closer to the other believers.” “I particularly appreciate the moment when we all say the Our Father because I feel that we all belong to one great family.” “I particularly appreciate collective gestures and speeches because they allow me to feel closer to others.” Finally, the *emotional* aspect of the Mass refers to the positive emotions felt during the Mass. We assessed six specific positive emotions (love, awe, pride, gratitude, amusement, and peace) plus one more general item on emotions felt toward the beauty of the church: “I particularly appreciate the beauty of the church and the emotions I feel when I contemplate it.” Reliability was satisfactory ($\alpha = .82$). We computed an average score for this subscale and also looked at each specific positive emotions individually. All scales were 7-point Likert scales.

We used a measure of spontaneous tendency to share hypothetical gains (Clobert & Saroglou, 2013). Participants were asked to indicate what they would do with the money if they were to hypothetically win €100,000 from the national lottery. They were asked what percentage of the amount they would allocate to each kind of expense and to write it in the space provided (eight lines) below the question. When responding, participants were unaware that we were interested in calculating how much they would keep for themselves and how much they would give to other people. Then two independent judges classified the different kinds of expenses into two categories: expenses for others (family, friends, donations to charity) and for oneself. We

computed a score for each participant ranging from 1 to 4, 1 meaning 0–25% of expenses for others, then 2 (26–50%), 3 (51–75%), and 4 (76–100%). Higher score reflects higher intentions to share. This procedure was chosen to not be explicit about the true purpose of the question and therefore reduce social desirability bias that is related to religiousness (see Sedikides & Gebauer, 2010). More important, this procedure allowed measuring spontaneous tendency for sharing.

RESULTS

Means, standard deviations, and bivariate associations of all measures are detailed in Table 1. As can be seen in Table 1, the correlations between sharing and all three religiousness and spirituality variables were positive and were significant for spirituality and church attendance. For each of the three religiousness and spirituality variables (personal religiousness, church attendance, and spirituality) a multiple mediator analysis was performed on sharing, entering simultaneously the three mediators: cognitive, social, and emotional aspects of the Mass. Given the large age range of the sample, age was included as a covariate in all of the analyses. A bootstrapping method was used to test our multiple mediator models (Preacher & Hayes, 2008). This nonparametric resampling procedure is one of the more powerful and valid methods for testing indirect effects for a single-step multiple mediator model (see Preacher & Hayes, 2004). Given the purpose of our study, this procedure allows us to enter simultaneously multiple mediators and thus to test the unique indirect effect of each mediator controlling for the other mediators. It also is possible to determine, by the test of contrast, whether one mediator accounts for more of the mediated effect than the others. All results were based on 5,000 bootstrap samples. We report data parameters and bias corrected and accelerated 95% confidence intervals (BCa CI), using the SPSS version of the Preacher and Hayes' (2008) macro.

A total of 3 (religiousness, church attendance, and spirituality) \times 1 (willingness to share) multiple mediator models were tested. To stay concise, we report in detail only the results for the religiousness scale. Results for church attendance and for spirituality can be found in Table 2. The total indirect effects were not significant, so we directly report the specific indirect effects. This case has been discussed in the literature (Preacher & Hayes, 2004; Shrout

TABLE 1
Means, Standard Deviations, and Correlations for All Measures

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Age	55.3	19.2	—	—	—	—	—	—	—
2. Religiousness	6.2	1.1	-.01	—	—	—	—	—	—
3. Church attendance	4.0	0.9	.06	.48***	—	—	—	—	—
4. Spirituality	5.1	1.2	.14**	.23***	.10*	—	—	—	—
5. Cognitive (Mass)	5.5	1.2	-.11**	.43***	.30***	.38***	—	—	—
6. Emotional (Mass)	4.7	1.2	-.16**	.47***	.31***	.39***	.69***	—	—
7. Social (Mass)	5.3	1.1	.10*	.44***	.36***	.36***	.59***	.63***	—
8. Sharing	2.7	1.3	.33***	.07	.11*	.10*	-.02	.01	.14**

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

TABLE 2
 Bootstrapped Single-Step Multiple Mediator Models for Religiousness, Church Attendance, and Spirituality
 as Predictors and Sharing as Outcome

Outcome	Predictors	Specific Indirect Effects			
		Emotional	Cognitive	Social	Contrast Cognitive/Social
Sharing	Religiousness	.008; [−.07, .08]	−.05; [−.11, .01]	.06; [.005, .13]	−.11; [−.22, −.01]
	Church attendance	.01; [−.05, .08]	−.04; [−.11, .01]	.06; [.001, .14]	−.10; [−.22, −.01]
	Spirituality	.01; [−.05, .07]	−.04; [−.09, .01]	.05; [.004, .10]	−.08; [−.17, −.01]

Note. Numbers provided are point estimates and in brackets 95% bias corrected and accelerated confidence intervals.

& Bolger, 2002). When considering multiple mediators, it is possible that one acts as a true mediator and another one as a suppressor, therefore the total direct effect should not be expected to be significant, even though it is present and real (Hayes, 2009). In the present study, unlike the other mediators, the cognitive aspect was slightly negatively related to willingness to share ($\beta = -0.10$, $SE = 0.07$, $ns.$) so that we were unable to show significant total indirect effects. The specific indirect effects indicate that only the social aspect of the Mass (point estimate = .06, 95% BCa CI [.005, .13]) is a significant mediator of the relation between religiousness and sharing. This was not the case for the cognitive and emotional aspects (respectively, point estimates = $-.05$ and $.01$, 95% BCa CIs [−.11, .02] and [−.07, .08]). Moreover, contrasting the three indirect effects revealed that the indirect effect via the social aspect was significantly stronger than the one via the cognitive aspect (point estimate of contrast = $-.11$, 95% BCa CI [−.22, −.01]), but not than the one via the emotional aspect (point estimate of contrast = $-.05$, 95% BCa CI [−.17, .06]). Taken as a set, this suggests that the association between religiousness and willingness to share is significantly mediated by the social aspect of the Mass.

We also ran a multiple mediator model including each positive emotion score to explore whether some of them might play a significant role in the relation between religiosity and sharing (see Table 3 for full results). Love was a significant mediator of the relation between

TABLE 3
 Bootstrapped Single-Step Multiple Mediator Models for Religiousness,
 Church Attendance, and Spirituality as Predictors and Sharing as Outcome

Outcome	Predictors	Specific Indirect Effects	
		Love	Pride
Sharing	Religiousness	.10; [.03, .18]	−.03; [−.08, .001]
	Church attendance	.07; [.02, .13]	−.04; [−.09, −.004]
	Spirituality	.06; [.02, .11]	−.03; [−.07, −.001]

Note. Numbers provided are point estimates and in brackets 95% bias corrected and accelerated confidence intervals.

TABLE 4
 Bootstrapped Two-Step Multiple Mediator Models for Religiosity, Church Attendance, and Spirituality as Predictors and Sharing as Outcome

Outcome	Predictors	Indirect Effects
		M1 = Social → M2 = Love
Sharing	Religiosity	.02; [.001, .04]
	Church attendance	.03; [.003, .05]
	Spirituality	.02; [.003, .04]

Note. Numbers provided are point estimates and in brackets 90% bias corrected confidence interval.

religiosity and sharing (point estimate = .03, 95% BCa CI [.03, .18]). In the models with church attendance and spirituality as predictors, pride was a significant suppressor, respectively (point estimates = -.04, -.03, 95% BCa CI [-.09, -.004], [-.03, -.001]).

The mediational analyses revealed two mediators, the social aspect of the Mass, and love felt during the Mass. We therefore ran the following multiple mediator model: religious variables predicting sharing through first the social aspect of the Mass and second love. We used the PROCESS macro developed by Hayes (2013). Age was again included as a covariate, we report the results based on 5,000 bootstrap samples, bias corrected, and a 90% confidence interval (see full results in Table 4). The indirect effect of religiosity on sharing through the social aspect of the Mass and love was significant, 90% BCa CI [.001, .04] (see Fig. 1). The alternative model with love as the first mediator and the social aspect as the second, was not significant for any of the religious variables.

DISCUSSION

The “Sunday effect” refers to the fact that believers were found to be prosocial on Sundays, not necessarily the other days, a finding possibly due to attendance of religious services (Malhotra,

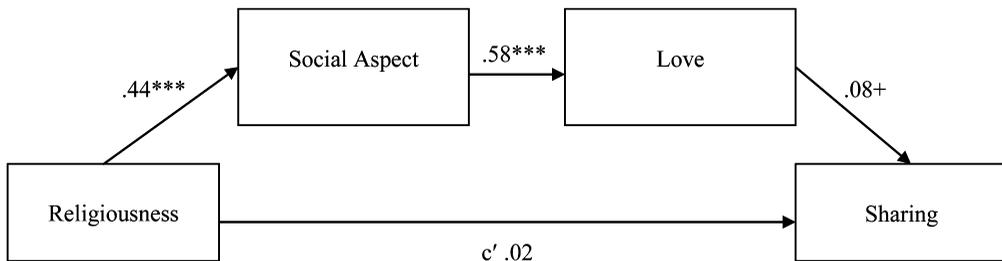


FIGURE 1 Bootstrapped two-step multiple mediator model of the effect of religiosity on sharing through the social aspect of the Mass and feelings of love. Note. Numbers on paths represent unstandardized regression coefficients. ***p < .001, †p = .06.

2010). The present study aimed at investigating by which aspect of the religious service prosociality is promoted among churchgoers. We investigated three broad aspects of religious attendance (i.e., cognitive, emotional, and social aspects of the Mass), as perceived by churchgoers, and we concurrently tested their role with regard to prosocial behavior (spontaneous sharing of hypothetical gains). First, our results suggest that among the different aspects of the Mass measured in the present study, it is the social one that seems to be a key ingredient in promoting prosociality among the more religious participants. The cognitive and emotional aspects of the Mass as measured in this study were not significant independent mediators of the religiosity–prosocial behavior link. Second, when looking at specific positive emotions separately, instead of only looking at general positive emotionality, results show that the emotion of love significantly mediated the relation between religion and the sharing measure. However, the emotion of pride, a highly self-focused positive emotion, turned out to be a significant suppressor. Furthermore, the full mediational model indicated that, for the more religious, the social aspect of the Mass (perception of social bonding with others in a community) predicts higher prosociality (spontaneous generosity toward others and charity) through strengthened feelings of love.

Donation is a costly behavior, and the results may suggest that it requires something more stimulating than simple cognitive understanding of religious teachings or global positive emotionality. Stronger collective cohesion, known to reinforce shared beliefs and to enhance commitment to the group's ideology (Graham & Haidt, 2010; Rossano, 2012), provides this motivation shot. In addition, the strong explanatory power of the social aspect of the religious collective ritual in reinforcing prosociality may be due to the fact that it is only through this group feeling that positive emotions spiral up and that religious norms are acted. The cognitive aspect of the Mass may be too intraindividual to be efficiently involved in an interindividual outcome.

We also found that the specific emotion of love underlines religious prosociality. Theoretically, other specific positive emotions such as awe, gratitude, or elevation were also suitable candidates. Three explanations are possible for why those emotions did not turn out to mediate the religiosity–prosociality association. First, the outcome of this study was donation to others, which is a highly social behavior involving money. Other results may be expected when considering other prosocial dependent variables such as volunteer time. Of interest, awe has been shown to increase willingness to give time but not money to help others (Rudd et al., 2012). Second, the specific context of the present study, the Catholic Sunday Mass, may not be the best setting to strongly elicit all kinds of positive emotions. Therefore, love might be the central positive emotion and explain religious prosociality in this context. Third, and this explanation also applies to the cognitive aspect of religion, we did not compare between religious and nonreligious people in the present study. The sample was composed of people who attend church, which is already a subcategory among the believers (especially in a Western secularized where some believers may not practice). This may have resulted in importantly restricted variation on religiosity and therefore on much weaker effects than if the sample included nonpractitioners or nonbelievers. Future studies should extend the present one by addressing the same questions in a more heterogeneous sample. Possibly, in such a study, all three hypothesized aspects of religious collective ritual may turn out to be significant. Note, however, that the present results suggest that even on the high end of the spectrum, higher religiousness still predicts more sharing. The religiosity–prosociality link found in the present study reflects differences among believers as a function of their degree of religiosity.

In the present study, we used a measure of *spontaneous* expression of generosity intentions (sharing with others a hypothetical gain of €100,000 from the lottery). The findings go beyond suspicions of contamination by bias such as positivity or social desirability: we used a behavioral measure and not a scale-based willingness to act prosocially, but in addition, when responding, participants were unaware of the prosocial goal of the measure used. Even more, the study was advertised as focusing on “well-being” and not on social or moral constructs.

The present study suffers from several limitations. First, the mechanisms investigated were specifically related to the experience of the Mass. This makes sense given the exploratory nature of the study, which was to focus for the first time on the aspects of religious attendance that may contribute to religious prosociality. We chose proximal explanatory factors that closely relate to the experience of attending a religious service. It would therefore be interesting to complement this research by looking at the more specific psychological mechanisms underlying the role of each of the three aspects of the religious collective ritual (cognitive, emotional, and social perceived effects). Of course, because $A \rightarrow B$, that is, the social aspect of the Mass and feelings of love promote prosociality, it does not mean that B needs A, many other factors can lead to B. Future research could investigate the role of negative emotions as another potential mechanism by which religious attendance promotes prosociality—again within the limits of religious prosociality, which is most often limited to non-value-threatening targets. Indeed, when feeling negative emotions, people feel encouraged to reduce them by pairing them with the positive emotions associated with helping (Cialdini, Baumann, & Kenrick, 1981). Third, the last mediational model including two mediators in a row, that is, from religious belief to prosociality through the social aspect of the Mass and feelings of love, was significant only using a one-tailed test. Given that both mediations were significant separately, we believe that the reliance to a one-tailed test is warranted.

In sum, to our knowledge no prior research has empirically investigated the question of the possible mechanisms by which religious collective rituals may contribute to enhance religious prosociality. We investigated the social, emotional, and cognitive aspects of the Mass that might be involved in promoting prosociality toward others (significant others such as family, friends, acquaintances and people in need). Our results attest of a predominant role of the social aspect of the Mass and feelings of love on such prosociality. These results may shed some light on the reasons why, for centuries, and across various religious traditions and cultures, religious temples are one of the (several but few) places where beggars wait religious attendees to exit from their collective prayer.

FUNDING

The present research was supported by a Doctoral Fellowship from the National Fund for Scientific Research, Belgium to Patty Van Cappellen.

REFERENCES

- Ahmed, A. M. (2009). Are religious people more prosocial? A quasi-experimental study with Madrasah pupils in a rural community in India. *Journal for the Scientific Study of Religion*, 48, 368–374.

- Ahmed, A., & Salas, O. (2013). Religious context and prosociality: An experimental study from Valparaíso, Chile. *Journal for the Scientific Study of Religion*, 52, 627–637.
- Altemeyer, B. (2010). Atheism and secularity in North America. In P. Zuckerman (Ed.), *Atheism and secularity: Vol. 2. Global experiences* (pp. 1–21). Santa Barbara, CA: Praeger.
- Anderson, L. R., & Mellor, J. M. (2009). Religion and cooperation in a public goods experiment. *Economics Letters*, 105, 58–60.
- Bekkers, R., & Wiepking, P. (2007). *Generosity and philanthropy: A literature review*. Report commissioned by the John Templeton Foundation. Retrieved from Social Sciences Research Network: <http://ssrn.com/abstract=1015507>
- Blogowska, J., Lambert, C., & Saroglou, V. (2013). Religious prosociality and aggression: It's real. *Journal for the Scientific Study of Religion*, 52, 524–536.
- Chang, W.-C. (2006). Determinants of religious giving in an Eastern-culture economy: Empirical evidence from Taiwan. *Review of Religious Research*, 47, 363–379.
- Cialdini, R. B., Baumann, D. J., & Kenrick, D. T. (1981). Insights from sadness: A three-step model of the development of altruism as hedonism. *Developmental Review*, 1, 207–223.
- Clobert, M., & Saroglou, V. (2013). Intercultural non-conscious influences: Prosocial effects of Buddhist priming on Westerners of Christian tradition. *International Journal of Intercultural Relations*, 37, 459–466.
- DeSteno, D., Bartlett, M. Y., Baumann, J., Williams, L. A., & Dickens, L. (2010). Gratitude as moral sentiment: Emotion-guided cooperation in economic exchange. *Emotion*, 10, 289–293.
- Durkheim, E. (1912). *Les formes élémentaires de la vie religieuse [The elementary forms of religious life]*. Paris, France: Presses Universitaires de France.
- Graham, J., & Haidt, J. (2010). Beyond beliefs: Religions bind individuals into moral communities. *Personality and Social Psychology Review*, 14, 140–150.
- Hardy, A. (1979). *The spiritual nature of man: A study of contemporary religious experience*. Oxford, UK: Clarendon Press.
- Hay, D. (1982). *Exploring inner space*. Harmondsworth, UK: Penguin.
- Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, 76, 408–420.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: Guilford.
- Isen, A. M. (1987). Positive affect, cognitive processes, and social behavior. In L. Berkovitz (Ed.), *Advances in experimental social psychology* (Vol. 20, pp. 203–253). New York, NY: Academic Press.
- Kim-Prieto, C., & Diener, E. (2009). Religion as a source of variation in the experience of positive and negative emotions. *The Journal of Positive Psychology*, 4, 447–460.
- Lambert, N. M., Fincham, F. D., Braithwaite, S. R., Graham, S. M., & Beach, S. R. H. (2009). Can prayer increase gratitude? *Psychology of Religion and Spirituality*, 1, 139–149.
- 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.
- Marris, J. S., Jagers, R. J., Hatcher, C. A., Lawhon, G. D., Murphy, E. J., & Murray, Y. F. (2000). Religiosity, volunteerism, and community involvement among African American men: An exploratory analysis. *Journal of Community Psychology*, 28, 391–406.
- Pavey, L., Greitemeyer, T., & Sparks, P. (2011). Highlighting relatedness promotes prosocial motives and behavior. *Personality and Social Psychology Bulletin*, 37, 905–917.
- Pichon, I., Boccato, G., & Saroglou, V. (2007). Nonconscious influences of religion on prosociality: A priming study. *European Journal of Social Psychology*, 37, 1032–1045.
- Piedmont, R. L. (1999). Does spirituality represent the sixth factor of personality? Spirituality transcendence and the Five-Factor Model. *Journal of Personality*, 67, 985–1013.
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, and Computers*, 36, 717–731.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40, 879–891.
- 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.
- Preston, J. L., Salomon, E., & Ritter, R. S. (2013). Religious prosociality. In V. Saroglou (Ed.), *Religion, personality, and social behavior* (pp. 149–169). New York, NY: Psychology Press.

- Rossano, M. J. (2012). The essential role of ritual in the transmission and reinforcement of social norms. *Psychology Bulletin*, *138*, 529–549.
- Rowatt, W. C., Carpenter, T., & Haggard, M. (2014). Religion, prejudice, and intergroup relations. In V. Saroglou (Ed.), *Religion, personality, and social behavior* (pp. 170–193). New York, NY: Psychology Press.
- Rudd, M., Vohs, K. D., & Aaker, J. L. (2012). Awe expands people's perception of time and enhances well-being. *Psychological Science*, *23*, 1130–1136.
- Ruffle, B. J., & Sosis, R. (2007). Does it pay to pray? Costly ritual and cooperation. *The BE Journal of Economic Analysis & Policy*, *7*(Contributions), Article 18. Retrieved from <http://www.bepress.com/bejeap/vol7/iss1/art18/>
- Ruiter, S., & De Graaf, N. D. (2006). National context, religiosity, and volunteering: Results from 53 countries. *American Sociological Review*, *71*, 191–210.
- Ruiter, S., & De Graaf, N. D. (2010). National religious context and volunteering more rigorous tests supporting the association. *American Sociological Review*, *75*, 179–184.
- Saroglou, V., Corneille, O., & Van Cappellen, P. (2009). Speak, Lord, Your servant is listening: Religious priming activates submissive thoughts and behaviors. *The International Journal for the Psychology of Religion*, *19*, 143–154.
- Saroglou, V. (2013). Religion, spirituality, and altruism. In K. I. Pargament, J. Exline, & J. Jones (Eds.), *APA Handbook of psychology, religion and spirituality* (Vol. 1, pp. 439–457). Washington, DC: American Psychological Association.
- Saroglou, V., & Munoz-Garcia, A. (2008). Individual differences in religion and spirituality: An issue of personality traits and/or values. *Journal for the Scientific Study of Religion*, *47*, 83–101.
- Schnall, S., Roper, J., & Fessler, D. M. T. (2010). Elevation leads to altruistic behavior. *Psychological Science*, *21*, 315–320.
- 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.
- Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods*, *7*, 422–445.
- Sosis, R., & Alcorta, C. (2003). Signaling, solidarity, and the sacred: The evolution of religious behavior. *Evolutionary Anthropology*, *12*, 264–274.
- Stark, R., & Finke, R. (2000). *Acts of faith: Explaining the human side of religion*. Berkeley, CA: University of California Press.
- Twenge, J. M., Baumeister, R. F., DeWall, C. N., Ciarocco, N. J., & Bartels, J. M. (2007). Social exclusion decreases prosocial behavior. *Journal of Personality and Social Psychology*, *92*, 56–66.
- 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. *The International Journal for the Psychology of Religion*, *21*, 97–105.
- Van Cappellen, P., & Rimé, B. (2014). Positive emotions and self-transcendence. In V. Saroglou (Ed.), *Religion, personality, and social behavior* (pp. 123–146). New York, NY: Psychology Press.
- Van Cappellen, P., & Saroglou, V. (2012). Awe activates religious and spiritual feelings and behavioral intentions. *Psychology of Religion and Spirituality*, *4*, 222–236.
- Van Cappellen, P., Saroglou, V., Iweins, C., Piovesana, M., & Fredrickson, B. L. (2013). Self-transcendent positive emotions increase spirituality through basic world assumptions. *Cognition & Emotion*, *27*, 1378–1394.
- Van Cappellen, P., Toth-Gauthier, M., Saroglou, V., & Fredrickson, B. (in press). Religion and well-being: The mediating role of positive emotions. *Journal for Happiness Studies*.
- Willemuth, S. S., & Heath, C. (2009). Synchrony and cooperation. *Psychological Science*, *20*, 1–5.