

Religious Prosociality and Aggression: It's Real

JOANNA BLOGOWSKA
Department of Psychology
Université Catholique de Louvain

VASSILIS SAROGLOU
Department of Psychology
Université Catholique de Louvain

CATHERINE LAMBERT
Department of Psychology
Université Catholique de Louvain

Individual religiosity relates to prosocial attitudes, behavioral intentions, and behaviors of minimal (or low cost; limited to in-group members) prosociality in hypothetical situations. Yet evidence on religious prosociality through other-oriented, costly helping behavior in real life is still to be documented. Similarly, religiosity relates to cognitive, emotional, and attitudinal components of prejudice toward moral out-groups. Evidence on real behavior of prejudice is nevertheless still needed. In two experiments using the same measure of religiosity and samples from the same population, religiosity predicted helping, in a real-life context, of an in-group member in need (Experiment 1) as well as overt and direct aggression by means of allocating hot sauce to a gay, but not to a neutral, target (Experiment 2). Religious prosociality and aggression are real, concern distinct kinds of targets, and are at the heart of personal religiosity.

Keywords: *prosocial behavior, aggression, prejudice.*

INTRODUCTION

Does religiosity predict prosocial *behavior*? Does it (also) predict antisocial *behavior*, at least toward moral out-groups? These are two key questions that are important for understanding the role individual religiosity plays with respect to social behavior. And, given the relevance of prosocial or antisocial behavior for most other domains of life (interpersonal relationships, intergroup relations, morality, well-being and mental health, sexuality, family and parenting, work, and politics) (Schroeder and Graziano in press), these two questions are essential if we are to understand the role religiosity plays with respect to all major domains of people's lives.

As will be detailed below, these two questions have received much attention in previous research, but this research has some limitations. Most often, it was intentions, or precursors, of prosocial or antisocial behavior that were measured. Real prosocial or antisocial behavior was sometimes measured, but the behaviors used (e.g., generosity and cooperation in experimental games or low willingness to help a person threatening values) did not directly or unambiguously tap into the heart of prosociality (i.e., helping a person in need) or prejudice in action (i.e., physical aggression). Previous research has also sometimes provided a mixed picture of findings, depending on the specific forms of religiosity involved. For instance, prejudice is typically associated with fundamentalism, whereas prosociality is associated with intrinsic and devotional forms of religiosity. This leaves open the question of whether there exist clear prosocial *and* antisocial consequences of the same personal, general religiosity.

Note: This work benefited from Grant ARC 08/13–013 from the Communauté Française de Belgique.

Correspondence should be addressed to Vassilis Saroglou, Department of Psychology, Université Catholique de Louvain, Place du Cardinal Mercier 10, 1348 Louvain-la-Neuve, Belgium. E-mail: vassilis.saroglou@uclouvain.be

The objective of the present work is to investigate religious prosociality and prejudice by focusing on real behaviors that are clearly and unambiguously prosocial, i.e., costly helping of a person in need, or antisocial, i.e., physical aggression against a moral out-group consisting of more than simply the cognitive, emotional, and attitudinal components of prejudice. To get to the heart of individual religion, these questions were examined in the context of general, personal religiosity (attachment to religious faith and practice) and not of very specific religious forms that vary depending on the nature of motivation (intrinsic vs. extrinsic) (Batson, Anderson, and Collins 2005) or the open- versus closed-minded ways of treating beliefs and practices (e.g., religion-as-quest vs. fundamentalism) (Hunsberger and Jackson 2005).

FROM RELIGION TO RELIGIOSITY

The question of whether *religiosity* (i.e., religious attitudes, beliefs, and/or practices), as an individual difference construct, predicts prosocial or antisocial behavior differs from the question of whether *religion per se* (religious concepts and symbols, as in real life or activated in lab experiments) has an influence on prosocial and/or antisocial behavior. Indeed, there is now experimental evidence that religious primes activate prosocial behaviors such as volunteering (Pichon, Boccato, and Saroglou 2007), cooperation, generosity (Ahmed and Hammarstedt 2011; Shariff and Norenzayan 2007), and low retaliation (Saroglou, Corneille, and Van Cappellen 2009), though the extent (in targets) of this prosociality may depend on the devotional versus coalitional character of the religious priming (Ginges, Hansen, and Norenzayan 2009; Preston, Ritter, and Hernandez 2010). However, religious primes, at least some kinds of them, can also activate antisocial behaviors, such as ethnic prejudice (Johnson, Rowatt, and LaBouff 2010), punishment (McKay et al. 2011), aggression (Bushman et al. 2007), and antisocial moral rigidity (Van Pachterbeke, Freyer, and Saroglou 2011). Note that, in line with previous theorization (Hunsberger and Jackson 2005; Saroglou et al. 2005), these priming studies indicated that religion impacts (a) prosociality that is limited to proximal targets and in-group members and (b) prejudice and discrimination against people perceived to threaten religious values.

Does this scenario hold for individual religiosity too? Do religious people really behave more prosocially (at least toward in-group members) than low- or nonreligious people? In parallel, when facing a person who is perceived as a threat to religious values, do religious people really behave aggressively? Previous research has provided findings occasionally confirming these two behavioral tendencies (for reviews on prosociality and prejudice, see, respectively, Saroglou 2013; Hunsberger and Jackson 2005). However, as will be detailed below, these studies present some limitations and have not yet provided evidence based on critical prosocial and antisocial behaviors.

RELIGIOSITY AND PROSOCIAL BEHAVIOR

Religiosity, as an individual difference construct, has been theorized to reflect prosocial attitudes, values, emotions, personality traits, and behaviors (see Saroglou et al. 2005 for a review of major psychological theories; see also Norenzayan and Shariff 2008; Preston, Salomon, and Ritter 2013 for reviews of evolutionary theories). An impressive body of previous research confirms to some extent (modest size of associations) and under conditions (minimal and selective prosociality, also restricted by competing principles) these theorizations (Saroglou 2012, 2013).

However, studies on religiosity and prosociality present some limitations (beyond the correlational nature of the evidence provided). First, although peer ratings seem to validate religious targets' self-perception as being prosocial (see Saroglou 2010 for a review), these evaluations by peers have been empirically criticized as suffering from an in-group bias (Galen et al. 2011) and activation of positive pro-religious stereotype (Galen 2012). Second, several studies have

failed to offer experimental evidence that religiosity (even the most “noble” of its forms, i.e., intrinsic religiosity) translates into real prosocial behavior, especially when the behavior is costly (for reviews, see Batson, Anderson, and Collins 2005; Galen 2012). Third, many studies have focused on intentions (e.g., willingness to help or to volunteer) rather than behavior *per se* (e.g., Blogowska and Saroglou 2011; Saroglou et al. 2005).

Fourth, studies having confirmed the religiosity-prosociality link at the behavioral level (for reviews, see Galen 2012; Saroglou 2013) have focused on behaviors that (a) do not imply costs, (b) imply hypothetical rather than real costs, and (c) do not directly tap into the heart of prosociality, i.e., behavior based on empathy and concern for the others’ needs. These studies tapped, for instance, low retaliation and high cooperation, reciprocity, generosity, and sharing of hypothetical gains. Cooperation, trust, or generosity in economic games designed to examine how people allocate (hypothetical) resources may not be at the very heart of what is commonly and psychologically considered as an altruistically motivated, based on empathy and/or the principle of care for people in need, prosocial behavior (Batson 2010; Eisenberg 2010). Helping a person in need, especially when somehow costly, has typically been considered in social psychology as an exemplar of prosocial behavior. In addition, and importantly, the above-mentioned behaviors in previous studies were measured during the experiment, i.e., most often while the experimenter was present, a fact that may have implicitly increased participants’ willingness to show normative and socially desirable behavior. Showing that religiosity may lead to prosocial behavior in real life, in an ecologically valid research context, is therefore of real importance.

In sum, we are still crucially missing clear evidence that individual religiosity predicts helping a person in need in real life. In a recent critical review, Galen (2012) argued that the religion-prosociality hypothesis seems to be a fallacy (but see Saroglou 2012). Thus, the first objective of the present work (Experiment 1) was to examine whether religiosity predicts helping a person (in-group member) in need, and this in real-life circumstances. Following previous theory assuming that there is a real link between religiosity and prosocial behavior and that religious people are not moral hypocrites who report they value or do good but do not try to do it (Saroglou et al. 2005; see also Saroglou 2012), we hypothesized a positive association between religiosity and helping.

RELIGIOSITY AND AGGRESSION AGAINST MORAL OUT-GROUPS

There is also a dark side to the religiosity-social behavior link, i.e., prejudice and violence toward out-group members, especially those who threaten religious/moral values. Religiosity, especially because of its coalitional and moral dimensions, implies intensification of in-group versus out-group distinctiveness and high sensitivity to moral issues and religious norms, which facilitates prejudice and discrimination against out-group members, especially value-violators who constitute a symbolic or real threat (Rowatt, Carpenter, and Haggard 2013). The religiosity-prejudice link has thus been confirmed for a large spectrum of out-groups: women (for men), single mothers, homosexuals, people of different ethnicity, race, and religion, and atheists (Hunsberger and Jackson 2005). The findings are clearer for religious fundamentalism (Hunsberger and Jackson 2005) and for nonproscribed (e.g., homosexuals) rather than proscribed (e.g., racism after the 1990s) targets of prejudice (Batson, Schoenrade, and Ventis 1993; Hall, Matz, and Wood 2010; Whitley 2009). Interestingly though, anti-gay prejudice is often present not only as a function of fundamentalism (and underlying authoritarianism) but also of mere personal, intrinsic religiosity (Leak and Finken 2011; Rowatt et al. 2009).

However, most of the above evidence is based on explicit paper-and-pencil measures of prejudice, although some studies have also included implicit measures of prejudice (often using the Implicit Association Test). The evidence includes the discriminatory treatment of such out-groups relative to in-groups (e.g., Batson et al. 1999), unwillingness to help (e.g., Jackson and Esses 1997), and legitimization of prejudice (e.g., Pichon and Saroglou 2009), as well as the

expression of negative beliefs, emotions, attitudes, and judgments (e.g., Rowatt et al. 2009; Whitley 2009).

These studies thus do not yet answer a crucial question. Religious people may express negative attitudes toward, and discrimination of, out-group members, but are they capable of going further, to the point of showing aggression—and not only verbal, symbolic, and indirect aggression, but physical and direct? This is an important issue, since one could counter-argue that negative and discriminatory attitudes shown by religious people do not necessarily translate into physical antisocial behavior. The compassionate values of religion (Habito and Inaba 2006) and the need for self-control of negative emotions and thoughts and impulsive acts (McCullough and Willoughby 2009) may act as a brake, preventing an outward display of physical aggression. There is indeed some evidence that religiosity is related to low aggression in general. For instance, religious people tend to report low appreciation and use of hostile humor (Saroglou 2003, 2004), express low aggression in written responses when reacting in hypothetical everyday life situations involving frustration (Saroglou et al. 2005), and are evaluated by peers as using less aggressive behavior (Landau et al. 2002).

However, these studies found low aggression among religious people in the context of interpersonal relations with familiar people and in-group members in general. What if the targets are out-group members that threaten religious values? We hypothesized that religiosity may lead to aggressive behavior toward a target perceived as a threat to one's religious/moral values. Given the previously mentioned evidence on the relationship between religiosity and prejudice, there is no reason to expect that this prejudice would not be translated into behavioral aggression. Religious texts legitimizing violence have been found to induce aggression, and religious people have showed higher sensitivity to such effects (Bushman et al. 2007).

To give us an opportunity to document behavioral aggression toward targets who threaten religious values, we focused on one of the clearest targets of religious prejudice, i.e., homosexuals. As mentioned above, anti-gay prejudice is not only a function of participants' fundamentalism but, often, also of participants' mere personal religiosity. In Experiment 2, we investigated the hypothesis that religiosity predicts physical aggression against a homosexual person who praises gay rights. To do so, we used the hot sauce allocation paradigm, which is one of the most common behavioral measures of physical aggression (Lieberman et al. 1999; Ritter and Eslea 2005).

EXPERIMENT 1

Method

Participants were 59 Bachelor of psychology students at a Belgian university (mean age and range: 19.5, 18–27; 51 women). The majority (37) reported Christian religious affiliation, one reported Muslim, and the others (21) no religious affiliation. Participants were met “accidentally” by our collaborator (a Master's student, a 40-year-old woman) on the underground floor of the department building after exiting, individually, a lab room where they had finished participating in another study for which they had received credit for an introductory psychology course. Given the distance in age and level of studies, the collaborator was unfamiliar to the participants (the 800 Bachelor's students in that department have no contact at all with Master's students, and none of the participants knew that target). Also, since every participant was approached after exiting the lab, the interaction between the collaborator and the participant took place without the experimenter from the previous study being present.

The collaborator introduced herself as a Master's student in psychology who needed participants to carry out the empirical research for her Master's thesis. She requested participants to fill in a questionnaire, which would take approximately 30 minutes. She did not offer any compensation. Participants then either agreed or declined to help her. Then, the collaborator informed them that their response (agreement or refusal) was indeed the unique objective of the study and

asked them to note on a piece of paper the reasons why they either agreed or refused to help her. She guaranteed that their answers would remain anonymous and confidential.

In the previous study, before participants had exited the lab and “accidentally” met our collaborator, participants were administered, among others, a measure of personal religiosity and a seven-point index of the importance of spirituality in life. The religiosity measure, which has been extensively used in previous research (e.g., Blogowska and Saroglou 2011; Saroglou et al. 2005), consisted of three items (seven-point Likert scales) measuring the importance of God and the importance of religion in life, as well as frequency of prayer ($\alpha = .91$). This measure is quite close to classic intrinsic orientation scale (Saroglou and Mathijssen 2007).

The agreement or refusal to help by filling in the questionnaire was coded as a dummy variable. The justifications participants provided to explain their agreement or refusal to help were read by two judges who classified them into four categories: availability (being available or not), empathy (mentioning or not the fact that the request came from a person in need), reciprocity (mentioning or not the possibility of oneself being in the same position of need a few years later during the Master’s), and kindness (willingness to be kind) versus lack of it (evoking dislike for the task or being indifferent toward the person who made the request). Afterwards, the four categories were combined into one, called here *prosocial justifications*. Each participant was attributed a score of 1 (caring for others and reciprocity), 0 (no prosocial justifications or only availability-related justifications provided), or -1 (being unkind).

Results

Half of the participants (29) offered help, whereas the other 30 refused. Note that the help requested was somehow costly, not only in terms of the amount of time to spend (30 minutes), but also because participants had just previously finished another experiment and thus could reasonably be suspected of not being enthusiastic about participating in a new study.

Bivariate correlational analyses showed a positive association between helping and religiosity, $r = .22, p < .05$. The same association was found between helping and spirituality, $r = .23, p < .05$. The associations were also significant when controlling for age and gender, $rs = .24, p < .05$.

All 27 prosocial justifications (scored 1) come from the 29 participants who offered help; only two of them did not provide any justification. Out of the 30 participants who refused to help, 20 did not provide any prosocial justifications or provided only availability-related justifications (scored 0), whereas 10 provided unkind, nonprosocial answers (scored -1). Among those who refused to help, there were negative associations of religiosity ($r = -.36, p = .01$) and spirituality ($r = -.39, p < .01$) with unkind justifications (rather than lack of prosocial or availability-based ones) of the decision made. In the whole sample, not surprisingly because of the overlap between prosocial justifications and behavior of help, religiosity and spirituality were positively related to prosocial (vs. unkind) justifications ($rs = .30, .34, p < .01$).

Discussion

Results confirmed the hypothesis that individual religiosity reflects real prosocial behavior, i.e., a behavior that is somehow costly, other-oriented, and not based on immediate cooperation and reciprocity concerns in hypothetical situations as was the case in previous studies. Religious participants were more likely than nonreligious participants to offer help to a person in need in a real-life context, and this without the presence of an authority figure (e.g., an experimenter). Prosocial justifications underlined religious participants’ tendency to help; unkind answers rather than excuses (e.g., nonavailability) were more present as a function of low/nonreligiosity for those who did not help.

This kind of helping may not imply very high costs as in the case of heroic altruism, but is still costly. Helping was evidenced at least toward an in-group member who asked for help

with a task that was relevant to the students' environment. Whether this prosocial behavior could extend to unknown targets with requests that are distant from one's own needs is an issue for further investigation. Nevertheless, previous evidence on willingness to help—rather than real behavior—suggests that extended altruism does not exist as a function of traditional forms of religiosity, but as a function of spirituality (Blogowska and Saroglou 2011; Saroglou et al. 2005). Also, the behavior studied here was solicited and public. It could be interesting to examine in further research whether the present effect extends to spontaneous and/or anonymous help. Previous research suggests that there may be differences in the way religiosity relates to these distinct kinds of prosocial self-reported behavior (Hansen, Bandenberg, and Patterson 1995; Hardy and Carlo 2005).

Since participants had answered questions on religiosity during the previous hour before “accidentally” meeting the collaborator, we cannot exclude that the religious questions may have functioned as religious primes. Answering questions on religion has previously been found to prime religion (e.g., Ginges, Hansen, and Norenzayan 2009). Nevertheless, even if this was the case, the results are still important, in accordance with the hypothesis. They show that when people are attentive to their attitudes toward religion, those who are religious tend to behave prosocially when interacting with a person in need. By considering real behavior as an outcome, they also extend recent studies showing that the interaction between individual religiosity and the salience of religion increases prosocial attitudes (Malhotra 2010; Van Cappellen and Saroglou 2012). Note also that the change of room and context (from the experimental lab with an authority figure to the real-life situation of meeting a person in need of help) may have contributed to diminishing possible influences of a hypothetical religious prime.¹

EXPERIMENT 2

Experiment 1 provided evidence that individual religiosity predicts people's tendency to show prosocial behavior by offering help to a person in need. Experiment 2 focused on the dark side of the religion-social behavior link, i.e., antisocial behavior. Using a similar sample to that of Experiment 1, we investigated aggression oriented to moral out-group members, i.e., homosexuals. Similarly to Experiment 1, which examined real prosocial behavior, the objective here was to focus on aggressive behavior and not on simple negative, cognitive and emotional, attitudes that have been documented in the context of religious prejudice. Using the hot sauce paradigm (Lieberman et al. 1999; Ritter and Eslea 2005), we operationalized aggression as the amount of hot sauce allocated to the target. We hypothesized that religious participants would show high aggression when interacting with a (hypothetical) homosexual person who praises social progress on gay rights, but not necessarily when interacting with a (hypothetical) person (no specific mention on sexual orientation was provided) who praises technological progress. For validation purposes, we also included a self-reported measure of dispositional aggression and a measure of explicit anti-gay prejudice.

Method

One hundred thirty undergraduate psychology students at a Belgian university took part in the study (115 women; mean age, standard deviation, and range: 19.92, 1.23, and 18–26). The

¹Note that measuring individual religiosity either preexperimentally or postexperimentally may anyway be methodologically problematic and potentially risky. Postexperimentally, it cannot be excluded that the experimental task affects religiosity: for instance, behaving prosocially may increase religiosity. Preexperimentally, even if religiosity is measured days before, it cannot be excluded that religious participants are already religiously primed some hours before the experiment, for instance, through the prayer they may have said in the morning or the previous evening.

majority identified themselves as believers (almost all Christians, i.e., 82 Catholics, two Orthodox, and three Protestants; one was Muslim) and 42 participants identified themselves as nonbelievers or atheists. In order to homogenize the religious background of believers, we did not retain data from the Muslim participant. The study was advertised as an investigation of “personality and taste.”

Upon individually entering the experimental room, participants were randomly assigned to two conditions. In both conditions they were asked to read a text supposedly written by another participant. The title of both texts was: “What has been the greatest progress of society in the last decades?” Those in the control condition read a text praising technological progress, whereas those in the experimental condition read a text written by a gay person who praised social progress in the acceptance of gay rights.²

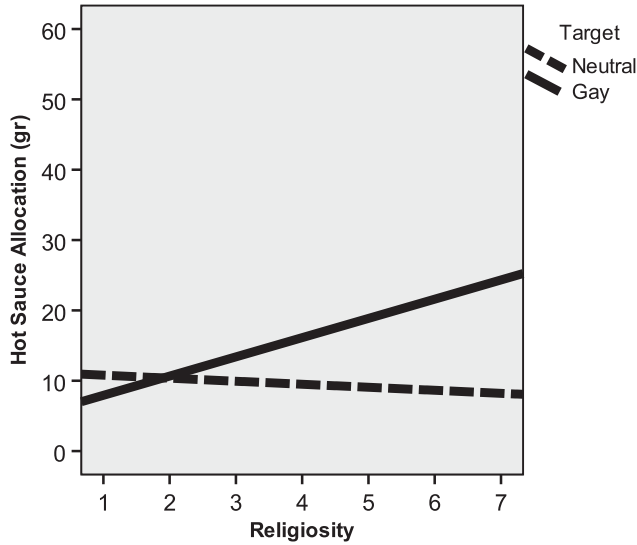
After reading the text, participants in both conditions were informed that the author of the text would participate in another part of the study dedicated to taste preferences. They were asked to allocate a quantity of sauce the other person would consume. It was specified that the sauce they would allocate was (allegedly) either hot or sweet, but that the experimenter was blind to the kind of sauce each participant received. In fact, participants were given only hot sauce to allocate. We chose the “Xtra Hot Sauce” produced by the company Santa Maria. In a pretest we conducted with 10 evaluators, this sauce turned out to be quite spicy (an average rating of 7.10 on a nine-point scale). In order for participants of Experiment 2 to know which kind of sauce they would allocate, they were asked to taste a minimal quantity of the sauce with a small plastic spoon. Afterwards, they were given a chocolate to remove the taste of the sauce. They also received a short questionnaire allegedly filled in by the other participant, specifying his/her various taste preferences (sweet, spicy, sour, and salty). The questionnaire indicated that the other participant does not like spicy food. Afterward, participants were left alone in the room with a considerable quantity of (hot) sauce, a big plastic spoon, and a plastic cup. It was specified that they could allocate as much of the sauce as they wanted and put it in the cup. Participants placed the cup filled with the sauce in a small metal box and covered it, since they were informed that the experimenter should be blind to the amount of the sauce. After a few minutes, the experimenter came back and collected the metal box containing the cup filled with the hot sauce. Nine participants were excluded from the analyses because they were not willing to allocate the sauce to the other participant (seven) or reported an allergy and thus were unable to taste the hot sauce (two). The weight (in grams) of hot sauce they chose to allocate constituted the dependent measure of aggression. At the end, participants were administered measures of (self-reported) aggression, explicit anti-gay prejudice, and religiosity. The whole procedure took approximately 25–30 minutes.

Self-reported aggression was measured through the short form of the Buss-Perry Aggression Questionnaire (Diamond and Magaletta 2006). Given the purpose of the present study, we retained the nine items referring to physical aggression, anger, and hostility ($\alpha = .80$), and did not include the items related to verbal aggression. We measured explicit anti-gay prejudice with two items

²Control condition: “For me, the greatest progress is undoubtedly the success in the field of new technologies! For example, thanks to the improvement of transport means, travel even between two parts of the world that are far away from one another has become faster than before. New technologies in air, sea and road transport have facilitated everybody’s life. Even short distance traveling has become more comfortable thanks to innovations such as high-speed trains, for example, and the improvement of airline networks which connect more and more places in Europe and in the world.”

Gay condition: “For me, the greatest progress is undoubtedly obtaining more rights for gay people! Sexual orientation is not a taboo subject anymore and people now have the courage to speak openly about it. Gays and lesbians have fought to get legitimate rights concerning marriage or adoption. They are not afraid to protest against discrimination and I hope to see more and more movements such as Gay Pride. With gay rights, it should only become easier for gay people to adopt children and become more visible in society. As a homosexual person I have a lot of appreciation for the progress society has made in last decades.”

Figure 1
Aggressive behavior as a function of participants' religiosity and condition



(both seven-point Likert scales) borrowed from the European Social Survey: (1) “To what degree would you like a homosexual person to be your neighbor?”; and (2) “To what degree would you like a homosexual person to be your political representative?” ($\alpha = .85$). Finally, we used the same three-item measure of general, personal religiosity as in Experiment 1 ($\alpha = .85$).

Results

The amount of hot sauce allocated was positively related to self-reported aggression in the gay condition ($r = .20, p < .05$) but not in the control condition ($r = -.08, n.s.$). Moreover, it was related to the explicit anti-gay prejudice in the gay condition ($r = .21, p < .05$), but not the control condition ($r = .06, n.s.$). Thus, the allocation of the hot sauce to the gay target who wrote a pro-gay text can reasonably be accepted as a measure of aggressive behavior in the context of anti-gay prejudice. Other preliminary analyses showed that there was no effect of the condition on religiosity, self-reported aggression, and anti-gay explicit prejudice. Gender (women) was positively related to hot sauce allocation ($r = .24, p < .01$), but unrelated to self-reported aggression and anti-gay prejudice.

A moderated regression analysis was conducted with aggressive behavior (hot sauce allocation) being regressed on the experimental condition (contrast coded: $-1 =$ neutral author of the text on technological progress; and $1 =$ gay author of the pro-gay rights text), religiosity (centered), and the product of their interaction. There was a marginally significant effect of condition, $B = .15, t(123) = 1.74, p = .08$, with more hot sauce allocated to the gay target. A main effect of religiosity was observed on high hot sauce allocation, $B = .20, t(123) = 2.38, p < .05$. More importantly, the interaction between religiosity and condition in predicting aggressive behavior was significant, $B = .26, t(122) = 3.13, p = .002 (R^2 = .12)$. Including gender as a covariate did not change the above results, but increased the explained variance ($R^2 = .19$). A simple slope analysis revealed that the gay, compared to the neutral, condition had no effect on aggression among participants low in religiosity (one SD below the mean), $B = -.12, t(123) = -.99, n.s.$, but increased aggression among participants high on religiosity (one SD above the mean), $B = .41, t(123) = 3.45, p < .001$ (see also Figure 1, depicting regression of anti-gay aggression on

religiosity in the gay condition, $B = .35$, $t(64) = 3.00$, $p < .01$, and the neutral condition, $B = -.12$, $t(61) = 0.96$, n.s.).

Discussion

As hypothesized, when given the opportunity, religious participants, interacting with a supposedly gay person who praised gay rights, tended to express behavioral aggression by allocating large amounts of hot sauce to this target. This was not the case when the target was morally neutral and supposedly praised society's technological progress. This study extends and clarifies, through a behavioral measure of physical aggression, previous work on explicit and implicit religious prejudice against out-groups that threaten religious and/or moral values (Hunsberger and Jackson 2005; Tsang and Rowatt 2007). It suggests that, despite key religious values of tolerance, compassion, and love (Habito and Inaba 2006), religiosity predicts not only negative and discriminatory beliefs, emotions, and attitudes toward targets threatening religious/moral values, but also physical forms of aggression.

Prudence is needed before concluding a substantial link between religiosity and all forms of aggression. The hot sauce allocation allowed for a behavioral expression of direct and overt physical aggression, but the target of aggression was not physically present. It may be that, in the presence of the target, religious people exert self-control in order not to show face-to-face interpersonal physical aggression. Being watched by the "victim" may increase self-awareness of one's aggression and/or reciprocity concerns, thus resulting in self-control and inhibition of aggression. Reciprocity concerns (Norenzayan and Shariff 2008), as well as self-control and regulation of negative emotions and behaviors (McCullough and Willoughby 2009) are strongly emphasized in the context of religion and individual religiosity.

GENERAL DISCUSSION

These two experiments showed that religiosity is associated with both real prosocial behavior, i.e., costly helping of a person in need (Experiment 1), and real antisocial behavior through the allocation of hot sauce to a gay person supporting gay rights but not to someone praising technological progress (Experiment 2). Religious prosociality and prejudice are thus real. They do not concern only, respectively, positive or negative beliefs, emotions, and attitudes, but they translate into behaviors that are exemplary of prosociality (costly helping) in real life and (physical) aggression in the laboratory. In line with previous research emphasizing the importance of distinguishing between in-groups and out-groups when studying the links between religion and social behavior (Batson, Anderson, and Collins 2005; Saroglou 2013), prosociality here was documented toward an in-group member (another student), whereas aggression was documented against a member of a prototypical, for traditional religion, moral out-group.

As far as prosociality is concerned, Experiment 1 provided a critical test of the religion-prosociality hypothesis. Previous studies of the religiosity-prosociality link have used either paper-and-pencil measures of prosocial intentions or behaviors of "minimal" prosociality relative to distribution of resources within a lab experiment (e.g., cooperation and generosity in hypothetical situations) (see Saroglou 2013 for a review). Nevertheless, a study proving that religiosity, at least when activated, can predict a costly prosocial behavior toward a target in need, clearly thus other-oriented in nature, occurring in a real-life context and not during a lab experiment, and without an authority figure (e.g., experimenter) being present, was missing. However, the size of the effect found was modest, suggesting that the difference between believers and nonbelievers in prosocial behavior is far from being a black-white issue. Note that the effect size was comparable to the one found in a meta-analysis of dozens of studies on religiosity and agreeableness (mean effect size, $r = .20$) (Saroglou 2010).

One may argue that the findings of Experiment 1 show a discrepancy with respect to the well-known work by Batson (see Batson, Anderson, and Collins 2005) who suggested that (intrinsic) religiosity does not imply costly prosocial behavior. We suspect there may be an important contextual difference here. Among young people of the 2010s living in a secularized country (Belgium is, after France, the most secularized Western European country), religiosity may be much more intrinsic in nature and prosocial consequences (in Allport and Ross's [1967] terms) than among students of the 1980s (as in Batson's studies) living in U.S. regions where religion was predominant in society.

As far as aggression toward a value-violator is concerned, the hot sauce allocation in Experiment 2 may not be a perfect way to measure aggression. Like other measures of behavioral aggression in the laboratory, it presents some methodological limitations. Nevertheless, it is considered a reliable measure of overt and not covert aggressive behavior (Ritter and Eslea 2005). In the present study, behavioral aggression confirmed and even clarified the nature of the explicit religious prejudice against homosexuals: religious people tend not only to dislike a gay target (they do not want him as neighbor or as a political representative) but tend to express physical aggression, possibly moved by much stronger emotions than simply disliking. For instance, the emotion of disgust has been found to underline homonegativity (Olatunji 2008) and disapproval of moral impurity more generally (Horberg et al. 2009) and to be elicited by contact with out-group religious beliefs (Ritter and Preston 2011). The behavioral findings of Experiment 2 also solidify and extend previous research suggesting that religiosity implies not only "hating the sin" but also "hating the sinner" (Batson et al. 1999; but see Mak and Tsang 2008).

More generally, Experiment 2 suggests that religious prejudice against value-violators is not limited to explicit disapproval (Whitley 2009), implicit negative cognitions and emotions (Tsang and Rowatt 2007), and unwillingness to help the target in need (e.g., Batson et al. 1999; Jackson and Esses 1997). It goes further, translating into explicit aggressive behavior. Obviously, religious values of compassion and tolerance are not sufficient to exert an inhibition of aggressive behavior against moral out-groups. They seem, rather, to be dominated by alternative religious norms condemning behaviors and people perceived to threaten religious values.

Future research should clarify whether the aggression found in the present study was oriented to a person for simply being gay and/or for advocating gay rights. The two are conceptually distinct, although practically they may overlap importantly: gay people most often defend gay rights; religious homophobia often leads to a nondistinction in behavior between disliking gay advocacy and disliking the gay as a person (Batson et al. 1999); and in Experiment 2 religiosity predicted both aggression against the defender of gay rights and disliking a gay neighbor. Prudence is also needed to not necessarily extend the present findings to all forms of religious prejudice. Indeed, prejudice against homosexuals is a strong kind of religious prejudice. It is present not only among fundamentalists and authoritarians, but also among people who are "simply" religious, i.e., without being necessarily fundamentalists (Leak and Finken 2011; Rowatt et al. 2009). One hypothesis for future research could be that religious prejudice against other kinds of out-groups (e.g., ethnic and religious out-groups) is weaker, not necessarily leading to behavioral aggression.

Moreover, prudence is needed to not necessarily infer from the present correlational findings direct causal directions from religiosity to prosociality and prejudice; several mediating mechanisms and alternative causal directions are possible (on prosociality, see Galen 2012; Saroglou 2012, 2013; on prejudice, see Rowatt, Carpenter, and Haggard 2013). Regarding the religion-prosociality link, some have contested the causal role of religion in this relation (Galen 2012), whereas others reason in terms of the need to empirically verify the explanatory psychological mechanisms besides this observed link (Myers 2012; Saroglou 2012) and propose a series of cognitive, emotional, moral, social, and personality mechanisms (Norenzayan and Shariff 2008; Preston, Salomon, and Ritter 2013; Saroglou 2013). Finally, replicating the present studies in

samples of other than Christian (Catholic) background and better balanced in terms of gender would reinforce the generalizability of the findings.

Taken together, the two studies suggest that “loving your neighbor” and “hating the sinner” are two attitudes that coexist among religious people and translate into behavior. Religiosity implies both real prosocial behavior toward in-group members in need and real aggressive behavior toward people who threaten religious moral values. The two sides of religion seem to coexist within the same people: across the two studies, the samples came from the exact same population. It is also important to note that, across the two studies, the measure of religiosity we used was identical. This suggests that the religious paradox (co-existence of prosocial and antisocial tendencies) is not necessarily a consequence of distinct religious dimensions. For instance, it is generally assumed that it is fundamentalists who show out-group prejudice, whereas nonfundamentalist religious people are prosocial (Hood, Hill, and Spilka 2009). However, recent work has shown that religious fundamentalists are not only antisocial (toward out-groups), but also prosocial (toward in-groups) (Blogowska and Saroglou 2011). Extending that line of research by focusing on mere personal religiosity, the present work suggests that the religious paradox can be identified at the heart of religion rather than only in its margins (fundamentalism).

REFERENCES

- Ahmed, Ali and Mats Hammarstedt. 2011. The effect of subtle religious representations on cooperation. *International Journal of Social Economics* 38(11):900–10.
- Allport, Gordon W. and J. Michael Ross. 1967. Personal religious orientation and prejudice. *Journal of Personality and Social Psychology* 5(4):432–43.
- Batson, C. Daniel. 2010. Empathy-induced altruistic motivation. In *Prosocial motives, emotions, and behavior: The better angels of our nature*, edited by Mario Mikulincer and Phillip R. Shaver, pp. 15–34. Washington, DC: American Psychological Association.
- Batson, C. Daniel, Stephanie L. Anderson, and Elizabeth Collins. 2005. Personal religion and prosocial motivation. In *Advances in motivation and achievement*, Vol. 14, edited by Martin H. Maehr and Stuart A. Karabenick, pp. 151–85. Greenwich, CT: JAI Press.
- Batson, C. Daniel, Randy B. Floyd, Julie M. Meyer, and Alana L. Winner. 1999. “And who is my neighbor?": Intrinsic religion as a source of universal compassion. *Journal for the Scientific Study of Religion* 38(4):445–57.
- Batson, C. Daniel, Patricia Schoenrade, and Larry W. Ventis. 1993. *Religion and the individual: A social-psychological perspective*. New York: Oxford University Press.
- Blogowska, Joanna and Vassilis Saroglou. 2011. Religious fundamentalism and limited prosociality as a function of the target. *Journal for the Scientific Study of Religion* 50(1):44–60.
- Bushman, Brad J., Robert D. Ridge, Enny Das, Colin W. Key, and Gregory L. Busath. 2007. When God sanctions killing: Effect of scriptural violence on aggression. *Psychological Science* 18(3):204–07.
- Diamond, Pamela M. and Phillip R. Magaletta. 2006. The short-form Buss-Perry Aggression Questionnaire (BPAQ-SF): A validation study with federal offenders. *Assessment* 13(3):227–40.
- Eisenberg, Nancy. 2010. Empathy-related responding: Links with self-regulation, moral judgment, and moral behavior. In *Prosocial motives, emotions, and behavior: The better angels of our nature*, edited by Mario Mikulincer and Phillip R. Shaver, pp. 129–48. Washington, DC: American Psychological Association.
- Galen, Luke W. 2012. Does religious belief promote prosociality? A critical examination. *Psychological Bulletin* 138(5):876–906.
- Galen, Luke W., Christine M. Smith, Nathan Knapp, and Nicole Wyngarden. 2011. Perceptions of religious and nonreligious targets: Exploring the effects of perceivers’ religious fundamentalism. *Journal of Applied Social Psychology* 41(9):2123–43.
- Ginges, Jeremy, Ian Hansen, and Ara Norenzayan. 2009. Religion and support for suicide attacks. *Psychological Science* 20(2):224–30.
- Habito, Ruben L. F. and Keishin Inaba, ed. 2006. *The practice of altruism: Caring and religion in global perspective*. Cambridge, UK: Cambridge Scholars.
- Hall, Deborah L., David C. Matz, and Wendy Wood. 2010. Why don’t we practice what we preach? Social-cognitive motives behind religious racism. *Personality and Social Psychology Bulletin* 14(1):126–39.
- Hansen, David E., Brian Vandenberg, and Miles L. Patterson. 1995. The effects of religious orientation on spontaneous and nonspontaneous helping behaviors. *Personality and Individual Differences* 19(1):101–04.

- Hardy, Sam A. and Gustavo Carlo. 2005. Religiosity and prosocial behaviours in adolescence: The mediating role of prosocial values. *Journal of Moral Education* 34(2):231–49.
- Hood, Ralph W., Peter C. Hill, and Bernard Spilka. 2009. *The psychology of religion: An empirical approach*, 4th ed. New York: Guilford.
- Horberg, E. J., Christopher Oveis, Dacher Keltner, and Adam B. Cohen. 2009. Disgust and the moralization of purity. *Journal of Personality and Social Psychology* 97(6):963–76.
- Hunsberger, Bruce and Lynne M. Jackson. 2005. Religion, meaning, and prejudice. *Journal of Social Issues* 61(4):807–26.
- Jackson, Lynne M. and Victoria M. Esses. 1997. Of scripture and ascription: The relation between religious fundamentalism and intergroup helping. *Personality and Social Psychology Bulletin* 23(8):893–906.
- Johnson, Megan K., Wade C. Rowatt, and Jordan LaBouff. 2010. Priming Christian religious concepts increases racial prejudice. *Social Psychological and Personality Science* 1(2):119–26.
- Landau, Simha F., Kaj Björkqvist, Kirsti M. J. Lagerspetz, Karin Österman, and Lior Gideon. 2002. The effect of religiosity and ethnic origin on direct and indirect aggression among males and females: Some Israeli findings. *Aggressive Behavior* 28(4):281–98.
- Leak, Gary K. and Laura L. Finken. 2011. The relationship between the constructs of religiousness and prejudice: A structural equation model analysis. *International Journal for the Psychology of Religion* 21(1):43–62.
- Lieberman, Joel D., Sheldon Solomon, Jeff Greenberg, and Holly A. McGregor. 1999. A hot new way to measure aggression: Hot sauce allocation. *Aggressive Behavior* 25(5):331–48.
- Mak, Heather K. and Jo-Ann Tsang. 2008. Separating the “sinner” from the “sin”: Religious orientation and prejudiced behavior toward sexual orientation and promiscuous sex. *Journal for the Scientific Study of Religion* 47(3):379–92.
- Malhotra, Deepak. 2010. (When) are religious people nicer? Religious salience and the “Sunday effect” on pro-social behavior. *Judgment and Decision Making* 5(2):138–43.
- McCullough, Michael E. and Brian L. B. Willoughby. 2009. Religion, self-regulation, and self-control: Associations, explanations, and implications. *Psychological Bulletin* 135(1):69–93.
- McKay, Ryan, Charles Efferson, Harvey Whitehouse, and Ernst Fehr. 2011. Wrath of God: Religious primes and punishment. *Proceedings of the Royal Society B: Biological Sciences* 278(1713):1858–63.
- Myers, David G. 2012. Reflections on religious belief and prosociality: Comment on Galen (2012). *Psychological Bulletin* 138(5):913–17.
- Norenzayan, Ara and Azim Shariff. 2008. The origin and evolution of religious prosociality. *Science* 322(5898):58–62.
- Olatunji, Bunmi O. 2008. Disgust, scrupulosity and conservative attitudes about sex: Evidence for a mediational model of homophobia. *Journal of Research in Personality* 42(5):1364–69.
- Pichon, Isabelle, Giulio Boccato, and Vassilis Saroglou. 2007. Nonconscious influences of religion on prosociality: A priming study. *European Journal of Social Psychology* 37(5):1032–45.
- Pichon, Isabelle and Vassilis Saroglou. 2009. Religion and helping: Impact of target, thinking styles and just-world beliefs. *Archive for the Psychology of Religion* 31(2):215–36.
- Preston, Jesse Lee, Ryan S. Ritter, and J. Ivan Hernandez. 2010. Principles of religious prosociality: A review and reformulation. *Social and Personality Psychology Compass* 4(8):574–90.
- Preston, Jesse Lee, Erika Salomon, and Ryan S. Ritter. 2013. Religious prosociality: Personal, cognitive, and social factors. In *Religion, personality, and social behavior*, edited by Vassilis Saroglou, pp. 149–69. New York: Psychology Press.
- Ritter, Dominik and Mike Eslea. 2005. Hot sauce, toy guns, and graffiti: A critical account of current laboratory aggression paradigms. *Aggressive Behavior* 31(5):407–19.
- Ritter, Ryan S. and Jesse Lee Preston. 2011. Gross gods and icky atheism: Disgust responses to rejected religious beliefs. *Journal of Experimental Social Psychology* 47(6):1225–30.
- Rowatt, Wade C., Tom Carpenter, and Megan Haggard. 2013. Religion, prejudice and intergroup relations. In *Religion, personality, and social behavior*, edited by Vassilis Saroglou, pp. 170–92. New York: Psychology Press.
- Rowatt, Wade C., Jordan LaBouff, Megan Johnson, Paul Froese, and Jo-Ann Tsang. 2009. Associations among religiousness, social attitudes, and prejudice in a national random sample of American adults. *Psychology of Religion and Spirituality* 1(1):14–24.
- Saroglou, Vassilis. 2003. Humor appreciation as function of religious dimensions. *Archive for the Psychology of Religion* 24(1):144–53.
- . 2004. Being religious implies being different in humour: Evidence from self- and peer-ratings. *Mental Health, Religion, and Culture* 7(3):255–67.
- . 2010. Religiousness as a cultural adaptation of basic personality traits: A five factor model perspective. *Personality and Social Psychology Review* 14(1):108–25.
- . 2012. Is religion not prosocial at all? Comment on Galen (2012). *Psychological Bulletin* 138(5):907–12.
- . 2013. Religion, spirituality, and altruism. In *APA handbook of psychology, religion and spirituality*, Vol. 1, edited by Kenneth I. Pargament, Julie J. Exline, and James W. Jones, pp. 439–57. Washington, DC: American Psychological Association.
- Saroglou, Vassilis, Olivier Corneille, and Patty Van Cappellen. 2009. “Speak, Lord, your servant is listening”: Religious priming activates submissive thoughts and behaviors. *International Journal for the Psychology of Religion* 19(3):143–54.

- Saroglou, Vassilis and François Mathijsen. 2007. Religion, multiple identities, and acculturation: A study of Muslim immigrants in Belgium. *Archive for the Psychology of Religion* 29(1):177–98.
- Saroglou, Vassilis, Isabelle Pichon, Laurence Trompette, Marijke Verschuere, and Rebecca Dernelle. 2005. Prosocial behavior and religion: New evidence based on projective measures and peer ratings. *Journal for the Scientific Study of Religion* 44(3):323–48.
- Schroeder, David A. and William G. Graziano, ed. In press. *The Oxford handbook of prosocial behavior*. New York: Oxford University Press.
- Shariff, Azim F. and Ara Norenzayan. 2007. God is watching you: Priming God concepts increases prosocial behavior in an anonymous economic game. *Psychological Science* 18(9):803–09.
- Tsang, Jo-Ann and Wade C. Rowatt. 2007. The relationship between religious orientation, right-wing authoritarianism, and implicit sexual prejudice. *International Journal for the Psychology of Religion* 17(2):99–120.
- Van Cappellen, Patty and Vassilis Saroglou. 2012. Awe activates religious and spiritual feelings and behavioral intentions. *Psychology of Religion and Spirituality* 4(3):222–36.
- Van Pachterbeke, Matthieu, Christopher Freyer, and Vassilis Saroglou. 2011. When authoritarianism meets religion: Sacrificing others in the name of abstract deontology. *European Journal of Social Psychology* 41(7):898–903.
- Whitley, Bernard E. 2009. Religiosity and attitudes toward lesbians and gay men: A meta-analysis. *International Journal for the Psychology of Religion* 19(1):21–38.