

# Does religion affect behavior?

Associations of religious beliefs with aggressive and prosocial behavior: The possible mediating role of empathy

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### **Abstract**

Christianity dominated societies in Western-Europe and USA for centuries, but ever since the 1950's it is past its heyday. This process should be considered rather alarming, because research on religiosity has shown its beneficial effects on behavior. The present study examines whether two types of religious beliefs are associated with prosocial and aggressive behavior. Besides, it is investigated whether empathy mediates the relation between religious beliefs, prosocial and aggressive behavior. The sample of the present study consists of 128 female and 40 male participants, ranging from 18 to 26 years old. The Prosocial Tendencies Measure assesses the prosocial tendencies of individuals. To measure aggressive behavior, the participants complete the Proactive/Reactive Aggression questionnaire. Two types of religiosity are distinguished: 'traditional religious beliefs' and 'spiritual beliefs'. Different scales of the Revised Paranormal Beliefs Scale measure traditional religious beliefs and spiritual beliefs. Church attendance and frequency of praying are also used as indicators of traditional beliefs. For measuring empathic tendencies, the Dutch version of the Interpersonal Reactivity Index is used. Results support the prospect that traditional religious beliefs are positively related to prosocial behavior. There is no evidence that either traditional religiosity or spiritual beliefs are associated with aggressive behavior. Empathy is only found positively related to prosocial behavior. No support is found for a mediating effect of empathy.

## **Introduction**

In modern Western societies, secularization is happening at a pace never seen before (Gorski & Altinordu, 2008). Christianity dominated societies for centuries, but ever since the 1950's it is past its heyday in Western-Europe and the USA, based on the amount of followers. This process should be considered rather alarming, because research on aspects beneficial effects on behavior (i.e., Markstrom, Huey, Stiles, & Krause, 2010; Ozorak, 2003; Paek, 2006). Almost all major religions have been linked to the expression and development of positive traits, by promoting normative beliefs and moral values (Gutierrez & Mattis, 2014; Hardy & Carlo, 2005; Huber & MacDonald, 2012). Furthermore, religious individuals have a higher propensity to engage in altruistic behavior, such as formal volunteering (Ozorak, 2003). Additionally, research has suggested that religion inhibits aggressive behavior (i.e., Leach, Bermann, & Eubanks, 2008; Pearce, Jones, Schwab-Stone, & Ruchkin, 2003). The religious social networks grant social control and share the same values and norms which, in turn, inhibit aggressive behavior (Pearce et al., 2003). With the process of a declining amount of religious followers kept in mind, will the next generation of our societies miss opportunities to develop less aggressive and more prosocial behavior?

In the present study the effects of religiosity on prosocial and aggressive behavior are investigated. It is expected that religion affects behavior, in the way that individuals with higher levels of religious beliefs show more prosocial behavior and less aggressive behavior. Besides, the possibility of empathy as a mediator of these associations is examined.

### **Religiosity Linked to Higher Prosociality**

The link between religiosity and prosocial behavior, where religiosity is defined as showing faith in and maintaining a relationship with a higher power or God (Dobbelaere, 2011), will be explained. Prosocial behavior is defined as behaviors intended to benefit other people or society as a whole. The focus is on the other's needs (Carlo & Randall, 2002). The relationship between the two concepts could be well explained by the effects of priming. Feeling the presence of a supernatural being is shown to increase altruistic behavior significantly (Shariff & Norenzayan, 2007). Furthermore, another application of priming, the subliminal presentation of religious words, support this finding (Pichon, Boccato, & Saroglou, 2007). Moreover, in a review study higher levels of generosity were nearly always associated with primed groups, compared to secular control groups in anonymous cash- or dictator games (Galen, 2012).

The religious prosociality hypothesis states that religion stimulates acts with personal costs that benefit others (Galen, 2012; Landau, Björkqvist, Lagerspetz, Österman, & Gideon, 2002; Norenzayan & Shariff, 2008). Previous studies found supporting evidence for this hypothesis. A review-study, based upon the survey results of 117.007

participants from 53 countries, showed that members of a church are most likely to provide disaster relief, donate blood or volunteer to help others (Ruiter & De Graaf, 2006). Furthermore, another study suggested that religious individuals, in various levels of devotion, have a greater chance to be members of charitable organizations (Stavrova & Siegers, 2014). In a study based on peer ratings, religious individuals show higher levels of altruistic behavior (Saroglou, Pichon, Trompette, Verschueren, & Dernelle, 2005). In sum, these studies suggest that religion has a positive influence on prosocial behavior (Ruiter & De Graaf, 2006; Saroglou et al., 2005; Stavrova & Siegers, 2014).

### **Religiosity Linked to Lower Aggression**

Despite the decrease of youth violence in the past decade, aggressive behavior, as measured by the prevalence of externalized disorders, still remain high with estimates of 10% or more of all youngsters (Lovett & Sheffield, 2006). Aggressive behavior remains one of the most substantial social problems in many societies (Parke & Slaby, 1983). The link between religiosity and aggressive behavior, where aggressive behavior is defined as behavior with the intention to harm another living being (Baron & Richardson, 1994), could be explained in three ways (Huesmann, Dubow, & Boxer, 2011). First, religion can influence parenting skills in such a manner that the atmosphere becomes more positive and more non-violent values are transmitted. Parents see their child as a *"holy gift from God"* who requires special attention and care. This will decrease the likelihood that their children will develop aggressive behavior (Bridges & Moore, 2002; Mahoney, Pargament, Swank, & Tarakeshwar, 2001). Second, when problems in parenting and marriage occur, the religious social network is likely to give support (Huesmann et al., 2011). This support results in a less aggressive atmosphere which, in turn, has a positive effect on the development of the child. Third, religion may improve strong internal self-regulating standards in children, which include normative beliefs counteracting aggressive behavior (Huesmann et al., 2011; Smith, 2003).

Likewise, in a systematic review, 40 published studies were used to assess the relationship between religiosity and delinquency. A total of 30 studies showed a negative association between religiosity and delinquency (Johnson, Li, Larson, & McCullough, 2000). In another review numerous studies have examined the relation between religiosity of parents and the child's aggressive behavior. Congruently, negative associations are found (Huesmann et al., 2011). Another study measured religiosity with the Religious Orthodoxy Scale and the Religious Tranquility Scale. These scales are designed to measure one's acceptance of the church and its teachings, and whether an individual experiences support of a house of prayer or religion (Watkins, 2003). This study conformingly showed that higher scores on religiosity predict lower scores on aggressive behavior. Taken together, these studies suggest that religion induce aggressive behavior (Huesmann et al., 2011; Johnson et al., 2000; Landau et al., 2002;

Leach et al., 2008; Watkins, 2003).

### **Distinctions Between Types of Religiosity**

In the literature contradicting results are found about links of religiosity with behavior. Some studies did not find positive associations between religious beliefs and prosocial behavior (i.e., Chau, Johnson, Bowers, & Darvill, 1990; Hunsberger & Platonow, 1986) whereas other studies did not find negative associations between religious beliefs and aggressive behavior (i.e., Bushman, Ridge, Das, Key, & Busath, 2007). These inconsistencies may be due to differences in ways of operationalizing and measuring religiosity (Bradley, 2009; Duriez, 2004; Francis, Croft, & Pyke, 2012). Some studies have examined religious habits, such as frequency of church attendance, while other studies have focused more on cognitions related to the belief in a divine power (Horwath & Lees, 2010; Johnson et al., 2000). In several studies religiosity is differentiated into intrinsic and extrinsic religious orientations (Chau et al., 1990; Francis et al., 2012; Hunsberger & Platonow, 1986; Leach et al., 2008). In general, individuals high in intrinsic religious orientation feel highly connected to their faith and God (Leach et al., 2008). The extrinsic scale of Allport and Ross (1967) refers to looking for the social aspects in being religious, such as status and safety, rather than genuine faith. Intrinsic religiosity is positively associated with prosocial behavior and negatively related to aggressive tendencies (Ji, Pendergrast, & Perry, 2006; Leach et al., 2008). However, extrinsic religiosity was shown to be either unconnected or even negatively connected to prosocial behavior (Chau et al., 1990; Hunsberger & Platonow, 1986).

Distinction in religiosity can also be made by the way individuals perceive God. Concepts of God as authoritarian or benevolent are existent in nearly every faith tradition. Concepts of an authoritarian God are associated with increased aggressive behavior and decreased prosocial behavior, whereas concepts of a benevolent God are shown to be associated with decreased rates of aggressive behavior and higher rates of prosocial behavior (Johnson, Li, Cohen, & Okun, 2013). Finally, a distinction between religious beliefs and spiritual beliefs can be made, although is widely discussed since they seem to overlap (Bradley, 2009). Some researchers suggest that religiosity is consistent with organized, traditional religious rituals and behaviors (church attendance and praying), while spirituality would consist of an individual relationship with a higher power (Einolf, 2013; Leach et al., 2008).

### **Does Empathy Mediate the Association Between Religion and Behavior?**

As findings about the associations between religiosity and behavior are inconsistent across studies, it would be useful to identify underlying processes that can explain these associations. Studies demonstrate the possibility that religiosity is associated with higher empathy, which in turn is associated with higher prosociality (Khan, Watson, & Habib, 2005; Markstrom et al., 2010). Empathy is the ability to

understand and share feelings, imagine the emotional state of mind of others and react to it (Christov-Moore et al., 2014; Eisenberg & Eggum, 2010; Vachon, Lynam, & Johnson, 2014; Vossen, Piotrowski, & Valkenburg, 2015).

Several studies show positive links between religiosity - in a more inward or personal way - and empathy (Bradley, 2009; Huber & MacDonald, 2012; Ozorak, 2003). Although, church attendance is found to be positively associated with empathy in some studies (Guterriez & Mattis, 2014), it is shown less influential than religious beliefs on empathy (Huber & MacDonald, 2012; Khan et al., 2005; Markstrom et al., 2010). Similar results have been found in other studies. These studies showed that participants with high levels of intrinsic religious orientation have higher levels of empathy (Khan et al., 2005; Paek, 2006). Furthermore, the image of God is shown to be related to empathy (Francis et al., 2012). A perception of a 'God of mercy' correlates positively to empathy, while a perception of a 'God of justice' correlates to lower levels of empathy. Moreover, a less literal and more symbolical manner of interpretation of religious ideas is positively related to higher levels of empathy (Duriez, 2004). To conclude, an intrinsically and cognitive approach of religiosity is likely to be positively associated with higher levels of empathy.

Considering the association between religiosity and empathy, and between empathy and prosocial behavior, empathy may mediate between religiosity and prosocial behavior. Therefore it is plausible that empathy also could be correlated negatively with aggressive behavior. Some studies have shown that people high in empathy tend to be less aggressive (Björkqvist et al., 2000; Gini, Albiero, Benelli, & Altoe, 2007; Jolliffe & Farrington, 2006; Vachon et al., 2014; Vossen et al., 2015). Finally, it is shown that adolescents with lower levels of empathy show more aggressive behavior (Gini et al., 2007; Jolliffe & Farrington, 2006; Vossen et al., 2015). More specifically, research indicates that empathy inhibits youth aggressive behavior (Batanova & Loukas, 2014; Gini et al., 2007).

### **The Present Study**

The main goal of the present study is to examine if religious beliefs are related to people's behavior. The relation between religious beliefs and prosocial behavior is expected to be positive, while the relation between religious beliefs and aggressive behavior is expected to be negative. Religiosity is delineated into two measurable concepts: Traditional religious beliefs and spiritual beliefs. In this study it is hypothesized that: Traditional religious beliefs and spiritual beliefs are positively associated with prosocial behavior and negatively associated with aggressive behavior. The secondary goal is to examine if these associations are mediated by empathy.

### **Method**

#### **Sample**

A total of 241 participants responded to an online questionnaire. A selection was made to make the group more homogenous in terms of age, resulting in a sample of 168 participants whose age ranged from 18 to 26 years ( $M = 22.25$ ,  $SD = 2.25$ ). Among these participants, 76,2% was female and 23,8% was male. 70,0% of the participants were students and most of the students attended Higher Vocational Education, a university or were pre-master students. Participants were predominantly born in the Netherlands (96,4%) and most of them reported being religious (59,5%).

### **Procedure**

The collection of the sample was conducted by Bachelor and Master students of the University Utrecht. The students shared the link to the online questionnaire on their personal Facebook pages. At the beginning of the survey, the 241 participants were informed of their rights: they could quit the experiment at any time and leave any question blank, without justification. All responses would be kept strictly anonymously and no rewards were provided.

### **Measures**

**Empathy.** The Dutch version of the Interpersonal Reactivity Index was used to measure empathic tendencies ([IRI]; Davis, 1983). This self-report questionnaire consists of four subscales. Each subscale includes seven items that can be answered on a 5-point scale ranging from *does not describe me well* to *describes me very well*. The first subscale, Empathic Concern, measures the tendency to experience feelings of concern, compassion and warmth for other people (e.g., I often have tender, concerned feelings for people less fortunate than me;  $\alpha = .70$ ). The second subscale, Perspective Taking, assesses the tendency to adopt the viewpoint of other people in everyday life (e.g., I sometimes try to understand my friends better by imagining how things look from their perspective;  $\alpha = .69$ ). The third subscale, Fantasy, focuses on the tendency to transpose oneself into the actions and feelings of fictive characters (e.g., I really get involved with the feelings of the characters in a novel;  $\alpha = .82$ ). The final subscale, Personal Distress, measures one's feelings of discomfort in reaction to other people's emotions (e.g., Being in a tense emotional situation scares me;  $\alpha = .70$ ). The psychometric properties of the IRI and the separate subscales are assessed. Firstly, the four subscales have sufficient test-retest reliabilities (varying from .62 to .71) and internal reliabilities (reaching from .71 to .77; Davis, 1980). Furthermore, the overall construct validity and the internal consistency of the total IRI are satisfactory (De Corte et al., 2007).

**Prosocial behavior.** The Prosocial Tendencies Measure (PTM) was used to assess the prosocial tendencies of individuals. Within this questionnaire six subscales can be distinguished, referring to six types of prosocial behavior. Each item has to be answered on a 5-point scale ranging from *does not describe me at all* to *describes me greatly*. Firstly, the subscale Altruism Prosocial Behavior, consisting of six items,

measures voluntarily helping motivated by the needs of someone else (e.g., I often help even if I don't think I will get anything out of helping;  $\alpha = .69$ ). Secondly, the subscale Compliant Prosocial Behavior consists of two items which measure helping others in response to a (non-)verbal request (e.g., When people ask me to help them, I don't hesitate;  $\alpha = .81$ ). Thirdly, the Emotional Prosocial Behavior subscale consists of five items and assesses the propensity to help someone in emotionally evocative circumstances (e.g., I respond to helping others best when the situation is highly emotional;  $\alpha = .88$ ). Fourthly, the four items of Public Prosocial Behavior subscale measure the tendency to act prosocially in front of others (e.g., I can help others best when people are watching me;  $\alpha = .85$ ). Fifthly, the Anonymous Prosocial Behavior subscale, which consists of five items, measures helping without other people's knowledge (e.g., I think that helping others without them knowing is the best type of situation;  $\alpha = .82$ ). Lastly, the three items of the subscale Dire Prosocial Behavior measure the tendency to help others in an emergency situation (e.g., I tend to help people who are in real crisis or need;  $\alpha = .76$ ). Multiple studies described in the article of Carlo and Randall (2002) have shown adequate internal consistency, test-retest reliability, discriminant, predictive, construct and convergent validity of the PTM in usage with late adolescents or young adults (Carlo, Hausmann, Christiansen, & Randall, 2003; Carlo & Randall, 2002).

**Aggressive behavior.** To measure aggressive behavior, the participants have completed the Proactive/Reactive Aggression ([PRA]; Dodge, 2003; Dodge & Coie, 1987). This questionnaire consists of a total of 23 items answered on a 7-point scale varying from *does not apply* to *applies very much*. In the present study, 7 items of the PRA were excluded, because these items measured victimization. Eventually, 16 items were included in the composite variable of aggressive behavior. Some examples of the items can be translated as: "I try to get what I want by threatening others", "Other people know I do not like them if they do not do what I want" ( $\alpha = .85$ ).

Concerning the psychometric properties, it is known that the internal consistencies of the subscales of the PRA are good, when administered by parents, teachers and forensic staff raters (Dodge & Coie, 1987). Besides, the discriminant validity (Collett, Ohan, & Myers, 2003), the predictive validity (Brendgen, Vitaro, & Lavoie, 2001) and the convergent validity (Dodge & Coie, 1987; Poulin & Boivin, 2000) are supported in several studies.

**Traditional religious beliefs.** Someone's traditional religious beliefs were measured by the composite of two questions and a subscale. Firstly, religious attendance as a behavioral index was assessed by one question: "How often do you attend a religious service?". Answers were given on a 9-point scale from *never* to *a few times a week*. Secondly, the frequency of praying outside a house of prayer was assessed by an



other question: "How often do you pray at another place than a church, mosque or synagogue?". Answers on this question were given on an 8-point scale ranging from *never* to *several times a day*. The third part that contributed to someone's level of traditional religious beliefs, was the score on the subscale Traditional Religious Belief of the Revised Paranormal Beliefs Scale ([R-PBS]; Tobacyk, 2004). The entire R-PBS provides insight in the degree of belief in different forms of supernatural matters and contains 26 items on a 7-point scale from *strongly disagree* to *strongly agree*. The subscale Traditional Religious Belief consists of four items (e.g., I believe in God). These four items seemed to correlate highly with the two previous questions, therefore composed into the 'Traditional religious beliefs'-variable ( $\alpha = .93$ ).

**Spiritual beliefs.** To measure spiritual beliefs, two other subscales of the R-PBS are used (Tobacyk, 2004). These includes 8 items of the Spiritualism and Precognition subscales (e.g., Reincarnation does occur). As these two subscales correlate highly with one another, they were combined to represent the composite variable 'Spiritual beliefs' ( $\alpha = .90$ ).

### Analysis Plan

Firstly, to investigate whether religious beliefs are associated with aggressive and prosocial behavior, simple regression analyses were conducted. Secondly, to examine whether these associations are mediated by empathy, the four steps of the mediation model of Baron and Kenny (1986) were applied. A simple regression was performed in the first three steps. The fourth step was to conduct a multiple regression analysis.

## Results

### Descriptive Statistics and Correlations

Correlations among the variables age, prosocial behavior, aggressive behavior, traditional religious beliefs, spiritual beliefs and empathy were calculated to examine their association with one another. Table 1 shows the means and standard deviations as well as the inter-item correlations among the variables. A negative significant correlation was found between traditional religious beliefs and age, showing that younger participants scored higher on traditional religious beliefs than older participants ( $r = -.17, p = .028$ ). A positive correlation between traditional religious beliefs and prosocial behavior was found ( $r = .28, p < .001$ ), demonstrating that higher levels of traditional religious beliefs are related to higher levels of prosocial behavior. Additionally, a significant positive correlation is found between spiritual beliefs and prosocial behavior ( $r = .17, p = .040$ ). The higher the level of spiritual beliefs, the higher the level of prosocial behavior. Prosocial behavior was found negatively correlated to aggression ( $r = -.19, p = .016$ ) and positively correlated to empathy ( $r = .25, p = .002$ ). Higher levels of prosocial behavior relate to higher empathy and lower levels of aggression. Furthermore, empathy

is found to be positively correlated to spiritual beliefs ( $r = .25, p < .001$ ), which means that a higher level of empathy is associated with a higher level of spiritual beliefs.

Table 1  
Descriptive statistics variables and correlations ( $n=168$ )

	Variable	1.	2.	3.	4.	5.	6.
1.	Age	-					
2.	Prosocial behavior	-.05	-				
3.	Aggressive behavior	.02	-.19*	-			
4.	Traditional religious beliefs	-.17*	.28**	-.05			
5.	Spiritual beliefs	.03	.17*	-.08	.10	-	
6.	Empathy	-.01	.25**	-.15	.05	.30**	-
<i>M</i>		22.27	3.39	1.65	3.39	2.36	3.32
<i>SD</i>		2.25	0.37	0.43	2.21	1.09	0.46

Note. *M* = Mean, *SD* = Standard deviation, *p* = Significance, \*  $p < .05$ , \*\*  $p < .01$ .

To examine possible differences between men and women, independent samples t-tests with an alpha level of .05 were conducted (see Table 2). One significant gender difference was found in the empathy scores, showing that women have higher empathy scores ( $M = 3.43, SD = 0.38$ ) than men ( $M = 3.05, SD = 0.52$ ;  $t(167) = -4.30, p < .001$ ).

Table 2  
Means and standard deviations of the variables sorted by gender ( $N$  for males = 40,  $N$  for females = 128)

	<i>t</i> -value	Males		Females	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Prosocial behavior	-1.18	3.33	0.44	3.41	0.35
Aggressive behavior	1.35	1.64	0.69	1.48	0.43
Traditional religious beliefs	-.55	3.22	2.36	3.44	2.17
Spiritual beliefs	-2.10	1.96	1.19	2.45	1.30
Empathy	-4.41**	3.00	0.54	3.41	0.39

Note. *M* = Mean, *SD* = Standard deviation, *t* = test statistics, *p* = Significance; \*\*\*  $p < .001$

## Regression Analyses

**Prosocial behavior.** A simple regression analysis is used to answer the first part of the main research question 'What are the associations between religious beliefs and prosocial behavior?'. In this model, prosocial behavior is the dependent variable. Age,

gender, traditional religious beliefs and spiritual beliefs are the independent variables. Results are shown in Table 3.

Table 3  
*Regression analysis traditional religious beliefs and spiritual beliefs predicting prosocial behavior (N=150)*

Predictor	Prosocial behavior		
	<i>B</i>	<i>SE B</i>	<i>R</i> <sup>2</sup>
Model			.11**
Constant	3.10***	.32	
Age	0.00	.01	
Gender	0.05	.07	
Traditional religious beliefs	0.05**	.01	
Spiritual beliefs	0.04	.03	

*Note.* *B* = Unstandardized coefficient, *SE* = Standard error, *R*<sup>2</sup> = Coefficient of determination, *p* = Significance, \*\**p* < .01, \*\*\**p* < .001. Gender was coded as '1' for men and '2' for women.

Table 3 reveals that all four variables together significantly predict the level of prosocial behavior ( $R^2 = .11$ ,  $p = .001$ ). This means that age, gender, traditional religious beliefs, and spiritual beliefs together account for 11,3% of the variation in prosocial behavior. Traditional religious beliefs emerged as the only significant positive predictor within the model ( $B = 0.048$ ,  $p < .001$ ), indicating that traditional religious beliefs have a positive influence on the level of prosocial behavior. As traditional religious beliefs increase by one unit, prosocial behavior increases by 0.048 units. Gender and age were controlled for and have shown no significant association in the model.

**Aggressive behavior.** To answer the second part of the main research question 'What are the associations between religious beliefs and aggressive behavior?', another simple regression analysis is used. In this model, aggressive behavior is the dependent variable. Age, gender, traditional religious beliefs and spiritual beliefs are the independent variables. Results are shown in Table 4.

Table 4  
*Regression analysis predicting aggressive behavior from traditional religious beliefs and spiritual beliefs (n=152)*

Predictor	Aggressive behavior		
	<i>B</i>	<i>SE B</i>	<i>R</i> <sup>2</sup>
Model			.05
Constant	2.05***	.35	

Age	0.00	.01
Gender	-0.19	.07
Traditional religious beliefs	-0.00	.02
Spiritual beliefs	-0.01	.03

*Note.*  $B$  = Unstandardized coefficient,  $SE$  = Standard error,  $R^2$  = Coefficient of determination,  $p$  = Significance, \*\*\* $p < .001$ . Gender was coded with '1' for men and '2' for women.

The four variables together do not significantly predict the level of aggressive behavior ( $R^2 = .03$ ). This means that age, gender, traditional religious beliefs, and spiritual beliefs together do not account for a part of the variation in aggressive behavior. There was no significant effect of traditional religious beliefs ( $p = .75$ ) or spiritual beliefs ( $p = .27$ ) on aggressive behavior.

### **Mediation Test: Empathy**

Prosocial behavior is shown to be significantly predicted by traditional religious beliefs. The next step in this study is to analyze to what extent empathy mediates the relationship between traditional religious beliefs and prosocial behavior. To test such a mediation model, the four steps described by Baron and Kenny (1986) were followed. The first step was to conduct a simple regression with traditional religious beliefs predicting prosocial behavior, which is already done above. The next step was to conduct another simple regression analysis with traditional religiosity predicting empathy. The third step was to conduct another simple regression with empathy predicting prosocial behavior. The last step was to conduct a multiple regression analysis with traditional religiosity and empathy predicting prosocial behavior, but if the previous steps do not show a significant positive association, the mediation effect is considered not possible.

At the first step a significant positive effect was found of traditional religious beliefs on prosocial behavior ( $p = < .001$ ). The second step did not show a significant effect of traditional religious beliefs on empathy, causing the hypothesis to be rejected.

### **Discussion**

The main goal of the present study was to examine whether religiosity and spirituality are related to prosocial and aggressive behavior. The results yielded partial support for the expectations. Regarding the first part of the main goal, results showed a positive predicting effect of traditional religious beliefs on prosocial behavior. These results are in line with the findings of several other studies (Ruiter & De Graaf, 2006; Shariff & Norenzayan, 2007; Stavrova & Siegers, 2014). The current findings add to the body of research that religiously active individuals, such as frequent churchgoers, show more prosocial behavior. Considering the second part of the main goal, religiosity did not seem to predict lower levels of aggressive behavior. An explanation for the contrariety

could be social desirability. Due to social desirability, participants are tended to underestimate their aggressiveness in self-report questionnaires, rather than their prosocial behavior. In the present study aggressive behavior was measured by a questionnaire, instead of, for instance an observation (Saunders, 1991). Furthermore, it should be taken into account that the participants are young adults, just older than adolescents. Younger participants are more vulnerable to social desirability than older participants (Perlini & Lippe, 2006). Another explanation for this discrepancy could be that in this study the perception of God was not taken into account. Different perceptions of God can yield different results than found. The possible predictability of religiosity on prosocial behavior and empathy could be higher or lower, depending which image was unintentionally included more (Johnson et al., 2013; Pyke et al., 2012). Future research should measure and distinct participants' concept of God more carefully for more valid results.

Spiritual beliefs were found neither to be related to prosocial behavior, nor to aggressive behavior, opposing the expectations. An explanation for this finding is that the variable 'spiritual beliefs' did not represent spiritualism properly, but was shaped by an uncomplete questionnaire, which also focused on paranormal beliefs. Whenever both religiosity and spiritualism were measured by two separate complete scales, positive associations between spiritualism and prosociality and negative association between spiritualism and aggressiveness are likely to be found. This would be similar to the findings of other studies (Bridges & Moore, 2002; Einolf, 2013; Huber & MacDonald, 2012; Markstrom et al., 2010).

The secondary goal was to examine whether empathy acts as a mediator in the relationship between religious beliefs and prosocial behavior and between religious beliefs and aggressive behavior. No association between religiosity and lower aggression was found, therefore no need existed for exploration of a mediation model. Subsequently, no evidence was found that empathy mediates the association between religiosity and prosocial behavior. This is not in accordance with the previous literature (Bradley, 2009; Francis et al., 2012; Markstrom et al., 2010), which examined comparable associations.

Few explanations are possible in this case. Firstly, a mediator, other than empathy, could play a stronger part in the relationship between both religiosity and prosociality and religiosity and aggressiveness. For instance, a social network as a result of being member of a religious community could explain higher levels of prosocial behavior and could be a mediator (Huesmann et al., 2011). A religious social network acts as a buffer against frustration and subsequent aggression, but could even be a mediator between religiosity and prosociality. Therefore future research should investigate this possibility. Another possible mediator is moral identity. An explanation

for this possible mediator would be that religion establishes a greater sense of moral identity which, in turn, motivates positive ways of relating to others (Hardy, Walker, Rackham, & Olsen, 2012).

Secondly, the definition of religiosity in the present study could have caused that empathy was not found to be related to either prosocial behavior or religiosity. Studies have shown that the more intrinsic, or individually experienced, religion is defined, the more likely it is to be related to empathy (Einolf, 2013; Huber & MacDonald, 2012; Markstrom et al., 2010). In another study it was shown that higher levels of fundamentalism, an aspect of religiosity, are related to lower levels of empathy (Bradley, 2009). In the results found in the present study, it could be that intrinsic religiosity was not measured enough and fundamentalism was measured too much.

### **Limitations and Strengths**

A serious limitation of the current study is that the design was cross-sectional instead of longitudinal. Longitudinal studies can provide insight in the development of constructs or relationships over time and suggest a direction. However, cross-sectional studies measure at only one point in time and therefore are not able to indicate causality. When the present study would have had a longitudinal research design, the conclusion could be drawn that individuals behave more prosocially, by becoming more religious.

A second limitation is the sample that is used. Firstly, the magnitude of the sample was relatively small: 168 participants were involved. Secondly, the men-women ratio was not commensurate: out of 168 participants, 40 participants were male (23,8%) and 148 were female (76,2%). Thirdly, while recruitment was done by sharing a link on the Facebook pages of bachelor and master students, most participants attended higher vocational education (70%), at a university, or were pre-master students. Samples that are recruited this way are called 'convenience samples', and show lower generalizability possibilities. Due to all these characteristics, the final sample is not sufficiently representative for the target population: the general population of Dutch young adults (18 to 26 years old). This should be taken into account by interpreting the results of the present study. Future research should also take these remarks into account, to gain reliability and validity.

A third limitation could also be that religiosity is examined as a continuous variable. In the current study complicated relationships between complex constructs are attempted to be explained through a linear association. A linear association addresses the approach for modeling the relationship between a dependent variable Y and one or more independent variable denoted by X's. The linear regression model indicated that the dependent variable, in this case aggressive behavior, linearly increases or decreases with an increase in the independent variable, religiosity. Perhaps the association of both

traditional religious beliefs and spiritual beliefs with aggressive behavior is not linear. This would mean that the output of a nonlinear system is not directly proportional to the input, because of a much more complex association than assumed. Many more factors, such as interaction effects between personality traits and religiosity, intelligence and social economic status, could play a role in the probably more complex association between religiosity and behavior. Future research should take this into consideration.

A fourth limitation is the possibility that the responses of the participants are biased by social desirability, because of the provocative topics that were measured. Social desirability could have increased the prosocial and empathy scores and decreased the scores for aggressiveness. However, this effect did not seem to be significantly influential in studies with similar variables (Saroglou et al., 2005; Stavrova & Siegers, 2014). Still the findings could be improved whenever future research takes the possible bias into account. Another recommendation is to involve other means of data collection other than self-report surveys, such as observations or semi-structured interviews to prevent social desirability.

A fifth limitation is that, as mentioned before, still no consensus is reached about the right way to define and measure religiosity. Variations in definition logically make a difference in the findings of a study (Allport & Ross, 1967; Bradley, 2009; Duriez, 2004; Francis et al., 2012). For instance, religiosity can be divided into religious commitment, referring to internal devotion, and religious involvement, representing frequency of praying and church attendance. Religious commitment is shown to be negatively linked to aggression and positively linked to empathy (Hardy et al., 2012). When in the current study religiosity was defined more like religious commitment than like religious involvement, the aforementioned influences could have played a role. Future research should consider this issue and should try to find a better way to define and operationalize religiosity.

### **Practical Implications**

Religions tend to improve humanity as a whole by providing a clear example of how to be 'good' and distinguish it from what is 'bad'. Children in religious contexts could be more exposed to favorable situations to develop more prosocial and less aggressive behavior than non-religious children. Research could find out which mechanisms or aspects of religion contribute to a more positive way of cohabitation. Finding those aspects is useful, especially for non-religious people to become aware and somehow learn from it. The present study contributes to this, by indicating the existence of a positive relation between religiosity and prosocial behavior. When research regarding this subject continues, and relationships are going to be clearer, next generations of our societies will gain opportunities to develop better prosocial behavior.

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