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# The Relationship Between Attachment to God, Prosociality, and Image of God

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## Summary

Although religiosity fosters some antisocial behaviors (e.g., support for suicide attacks), it is well-known that it also enhances in-group cooperation and prosociality (e.g., donating to charity). Supernatural punishment hypothesis suggests that the fear of punishment from an invisible, potent, and powerful supernatural agent can keep everyone in line, and encourage prosociality. We first investigated this relationship in a predominantly Muslim country and then tested a model suggesting that attachment to God can lead people to think God as authoritarian, which in turn leads them to report more prosocial intentions. The results demonstrate that (1) there are some findings suggesting that Attachment to God Inventory is a reliable measure in Turkey, (2) seeing God as authoritarian is positively correlated with prosociality, and (3) our above-mentioned model was supported by the data. Results generally support the supernatural punishment hypothesis and additionally show the utility of attachment theory in explaining the religiosity-prosociality link.

## Keywords

attachment to God – supernatural punishment hypothesis – fear of punishment – prosociality – religiosity

## Introduction

Research generally suggests that religion leads people to be more prosocial, avoid cheating, and do more good deeds (Norenzayan, 2013; Shariff, Willard, Andersen, & Norenzayan, 2016); on the other hand, some religiously motivated people create massive disarray by engaging in terrorist attacks involving brutal actions not just against the “Godless” but also against believers from different religions and denominations within their own religions (Norenzayan, 2013). Endorsement of different concepts of God, as forgiving or punishing, has been previously linked to positive (i.e., prosocial) and negative (i.e., anti-social) social behaviors, respectively (Johnson, Li, Cohen, & Okun, 2013; Shariff & Norenzayan, 2011). Different concepts of God were associated with behavioral system of attachment. In other words, the religion-as-attachment model (Kirkpatrick, 1992) suggests that individual differences in interpersonal attachment are found to be related to one’s perceived relationship with God (see also Kirkpatrick, 1998; Kirkpatrick & Shaver, 1992). More specifically, secure interpersonal attachment has been associated with a forgiving-specific “attachment to God” form (i.e., loving, sensitive), whereas avoidant interpersonal attachment has been associated with a punishing-specific “attachment to God” form (i.e., controlling, distant; Kirkpatrick & Shaver, 1992). In this study, we adopted an individual differences approach and investigated two possible predictors of prosociality: the conception of God as benevolent vs. authoritarian and the attachment style to God as secure vs. avoidant.

## Overview of Attachment Theory

Bowlby (1982) describes behavioral systems as innate evolutionary mechanisms to stay alive and away from danger by proximity seeking (attachment), securing one’s offspring’s survival by giving appropriate and sufficient care by protecting and comforting (caregiving), exploring the environment to be able to fit, learn and understand one’s surroundings (exploration) and attracting a mate by using evolutionary mating strategies (sexual mating). Bowlby (1982) states that these evolutionary behavioral systems can and will be activated whenever relevant stimuli are present. These stimuli include a stressful or dangerous situation, a person in distress or anxiety or in obvious need of care, an interesting and new surrounding to be explored and learned, and a sexually attractive, available and mate-seeking person’s presence, respectively. However, they can also be terminated and deactivated in cases of repeated

negative outcome, or psychological or physical harm, as a result of some sort of behavioral extinction (see Mikulincer & Shaver, 2012 for an updated review).

According to Bowlby (1958, 1969a, 1969b, 1973, 1980), the child from an early age gets attached to his primary caregiver (mostly his mother) and seeks proximity in cases of perceived danger, discomfort, and unrest. The primary caregiver in those cases provides what he calls a “Secure Base”, in order for the child to explore his surroundings, and provides care whenever necessary. By his primary caregiver’s actions, the child then develops patterns of attachment called secure or insecure. Mary Ainsworth, (1969; see also Ainsworth & Bell, 1970; Tracy & Ainsworth, 1981) after working with Bowlby, focused more on the infant-mother attachment process and conducted a number of studies. On the basis of her observations and experiments using “The Strange Situation,” she concluded that there are two different aspects of insecure attachment, named *anxious/ambivalent* and *avoidant*. In addition to the organized attachment patterns (secure and insecure), she noticed that there were other infants showing unorganized attachment patterns, and she called it *disorganized attachment*.

Following previous work, beginning with Hazan and Shaver’s (1987) seminal study on adult romantic attachment, the role of attachment security in relationship dynamics has been extensively studied (see Feeney, 2008; Selçuk, Zayas, & Hazan, 2010). Past studies have generally focused on how individual differences in attachment style affect the cognitive, emotional, and behavioral outcomes in close relationships (Mikulincer, Florian, Cowan, & Cowan, 2002). Adult attachment researchers have typically conceptualized two relatively orthogonal dimensions, attachment-related anxiety and avoidance, in individual differences in attachment patterns (Brennan, Clark, & Shaver, 1998; Mikulincer & Shaver, 2007). Briefly, attachment anxiety refers to the feelings of rejection and abandonment and attempts at excessive closeness, whereas avoidance refers to withdrawal from intimacy and dependency, a tendency to rely on one’s self as well as excessive self-reliance in close relationships. Other studies have also provided evidence for the validity of the two-dimensional approach for adult close relationships (e.g., Fraley & Shaver, 2000; Fraley, Waller, & Brennan, 2000).

Drawing on these previous studies, Shaver and Mikulincer (2002) identified two strategies regarding the activation of the attachment behavioral system: the primary and secondary strategies. The primary strategies refer to the perceived availability and responsiveness of the attachment figure and they are thought to be associated with the development of security-based strategies. Securely attached individuals (i.e., those who score low on both anxiety and avoidance) form and maintain close relationships, diminish distress, and

direct resources to other behavioral systems such as the exploration or the sexual system. Security-based strategies have been conceptualized as primary strategies to deal with stressors. The secondary strategies are grouped into two, namely the hyperactivation and deactivation strategies. The hyperactivation strategy involves exaggerating attempts to seek proximity with the attachment figure, which is typically attributed to anxious individuals (i.e., those who score high on anxiety and low on avoidance). This strategy is learned early in life to make certain that an inconsistent, distracted, or unreliable caregiver pays attention, and offers protection and support (Ainsworth, Blehar, Waters, & Wall, 1978). Another secondary strategy, deactivation, involves giving up proximity-seeking attempts and preferring excessive self-reliance to deal with distress, which characterizes avoidant individuals (i.e., those who score low on anxiety and high on avoidance). This strategy is learned in the context of a caregiver who provides better protection when one does not complain and does not insist on close contact (Ainsworth et al., 1978).

### God as an Attachment Figure

Following these discussions on adult attachment, researchers also proposed that one's conception of God could work as a secure base for believers within the attachment theory context. Kirkpatrick and Shaver (2008) stated that images of God, conversion, and prayer could be conceptually integrated within this framework. Some researchers have found supporting evidence concerning the relationship between the concept of God, religiosity and the evolutionary behavioral system of attachment (Granqvist, 1998, 2003; Kirkpatrick, 1997, 1999; see also Granqvist & Hagekull, 1999). In his work, Granqvist (2002) referred to Bowlby's (1969a) statement about the term "attachment relationship". Bowlby proposed that the attachment relationship requires meeting the following four criteria: proximity maintenance, safe haven, secure base, and separation distress (Hazan & Zeifman, 1999). Bowlby added a fifth component into his formulation, requiring the attachment figure to be stronger and wiser compared to the person attached to that figure. God is seen by believers as an omnipotent, and always present, all-monitoring agent. However, Kirkpatrick (1999) explains how attachment concept and specifically its avoidance dimension (since it requires distance as a variable) could be related to religion. He claims that prayer is analogous to social referencing in young children, which consists of occasional checks of the availability of the caregiver. About the other aspect of the attachment relationship, safe haven or secure base, Granqvist (2002) states that people turn to God in distress situations and this tendency tap into the

secure base and safe haven components of attachment. In fact, there is considerable amount of evidence, including loss through death and divorce (Granqvist & Hagekull, 2000, 2003; Loveland, 1968; Parkes, 1972), fear in relation to serious illness (Johnson & Spilka, 1991; O'Brien, 1982), emotional crises (Clark, 1929; James, 1902; Starbuck, 1899), relationship problems (Ullman, 1982), and other types of negative life events (see Hood, Spilka, Hunsberger, & Gorsuch, 1996), all of which is likely to activate the individual's attachment system (Bowlby, 1969a). The last aspect of the attachment relationship, separation anxiety, seems to present some problems because God is seen to be omnipresent and apparently cannot be separated from the person. It seems obvious that this gap needs to be filled by empirical evidence in future studies.

Consistent with the previous literature, Granqvist, Mikulincer, Gewirtz, and Shaver (2012) found that threat reminders triggered the thinking of God, and reminding of God led people to think about secure base-related concepts in a sample of Israeli Jewish participants. Cassibba, Granqvist, and Costantini (2013) also reported similar findings. Specifically, children with relatively more secure mothers were found to be closer to God, compared to children with insecure mothers. Although Kirkpatrick (2012) asserts that there are some empirical findings supporting this relationship, more research is needed to claim that there indeed is an attachment relationship between a believer and the God believed in. Although the empirical backing for this position is modest in the Western world, there is little-to-no study investigating this relation in a predominantly Muslim country. This study seeks to fill this gap.

### Supernatural Punishment and the Image of God

According to the supernatural punishment hypothesis (SPH; Johnson, 2009, 2011; Johnson & Bering, 2006; Johnson & Kruger, 2004; Schloss & Murray, 2011), it is nearly impossible in large groups to detect and punish every wrongdoing of every person. However, with a supernatural agent like God, this problem can be solved. If there is an omnipotent, omnipresent God who has the capacity to punish transgressions, people would feel being watched and large-scale cooperation can be accomplished. We also know from several studies that seeing God as forgiving or punishing affects attitudes and behavior (e.g., Johnson et al., 2013). Until today, two parallel lines of research have been published. On the forgiving side, Pichon, Boccato, and Saraglou (2007) and Harrell (2012) found that positive (e.g., reward-related) religious priming increases prosociality regardless of the participants' self-reported religiosity. Similarly, Johnson et al. (2013) demonstrated by using Christian participants that believing in a

forgiving God is positively associated with the willingness to help religious outgroups and prosociality while believing in an authoritarian God is positively associated with aggression and decreased forgiveness. They also experimentally showed that priming forgiving aspects of God increased willingness to forgive, and priming punishing aspects of God increased aggression and decreased prosociality. In contrast to these findings, Shariff and Norenzayan (2011) found that viewing God as more punishing is associated with lower levels of cheating, whereas self-reported religiosity or belief in God is not consistently related to cheating behavior. Furthermore, Shariff and Rhemtulla (2012) found that belief in heaven (an indicator of forgiving aspects of religion) is positively correlated, while belief in hell (an indicator of punishing aspects of religion) is negatively correlated with national crime rate in a worldwide survey. Yilmaz and Bahçekapili (2016) further showed that priming punishing aspects of religion led to an increase in the level of prosocial intentions. There are other empirical findings to support the supernatural punishment hypothesis (e.g., Atkinson & Bourrat, 2011; Bering & Johnson, 2005; Purzycki et al., 2016). Thus, the way one images God could be an important variable related to prosociality.

### The Present Study

The contribution of the current research is threefold. First, since there is no established scale to measure the attachment to God concept in Turkey (predominantly Muslim society), we first translated the Attachment to God (AGI) inventory (Beck & McDonald, 2004) into Turkish and validated by running confirmatory factor analyses and correlation analyses. Second, we expected that the adult attachment dimensions (i.e., anxiety and avoidance) would be associated with the attachment to God dimensions (i.e., anxiety and avoidance). By doing the first two, we investigated if and how the attachment to God concept would work in a predominantly Muslim sample. Third, we adopted an individual differences approach and tested a version of the supernatural punishment hypothesis by adding an attachment to God concept into the model. To do this, we investigated the link between the image of God (i.e., authoritarian and benevolent) and prosociality. Accordingly, positive association between perceiving God as authoritarian and prosociality would support the SPH, since SPH expects a positive relationship among the two. In addition, we also examined if the link between attachment to God dimensions (i.e., anxiety and avoidance) and prosociality was mediated by the image of God. However, we had no specific hypothesis of the association between attachment to God

and image of God dimensions. Adult attachment theory suggests that attachment anxiety would be positively associated with perceiving God as authoritarian and negatively associated with perceiving God as a benevolent agent. Because high attachment anxiety has been found to be linked with negative mental model of self (e.g., involving beliefs about the self as not lovable and worthwhile; Brennan et al., 1998; Fraley et al., 2000), individuals perceive themselves as less valuable and prone to be punished from significant others and do not deserve caregiving and/or forgiveness. However, this may not be the case for the God as an attachment figure from the Islamic perspective. It is mainly because it is not a mere human-human interaction but rather a relationship with an omnipotent supernatural agent, as God is described in Islamic tradition (Watt, 1948). Thus, we explanatorily examined the aforementioned relationship.

In sum, this study investigated whether the attachment to God concept is applicable to a predominantly Muslim sample and specifically whether AGI is a reliable measure in an Islamic context. Moreover, we investigated the relationship between the image of God (authoritarian vs. benevolent) and prosociality. Finally, we also tested a model suggesting that attachment to God would predict image of God dimensions, which in turn, predict prosociality in a predominantly Muslim sample.

## Method

### *Participants*

A total number of 218 people ( $M = 28.14$  yrs,  $SD = 14.29$ ; 130 females, 85 males, and 3 unreported) participated in the study. The participants were recruited through an online platform (i.e., Facebook). Completing the materials took about 15-20 minutes. One hundred and eleven participants (107 Sunni, 4 Alawite) indicated identification with Islam. Of the remaining, 44 identified themselves as atheists, 33 as theists without any organized religion, and 30 participants were either a believer in a religion other than Islam or declined to answer. We excluded participants who defined themselves as atheists for further analysis and we ran the model testing with 174 participants. Since the definition of atheism is exactly the lack of a belief in any personal God, it was not applicable to the current study's purposes. Participants' ethnicities were also diverse with 154 Turks, 30 Kurds, 1 Armenian, 1 Greek, 4 Arabs, and 27 unreported. All participants were native Turkish speakers.

## *Materials and Procedure*

### Attachment

Attachment dimensions were measured via the Turkish translation (Selçuk, Günaydın, Sümer, & Uysal, 2005) of Experiences in Close Relationships (ECR-R) developed by Fraley et al. (2000). The scale assesses the adult attachment anxiety and avoidance dimensions. The avoidance subscale (18 items;  $\alpha = .86$ ) measures the extent of an individual's discomfort with closeness, dependence, and self-disclosure (e.g., *"I am nervous when my partner gets too close to me"*). The anxiety subscale (18 items;  $\alpha = .88$ ) refers to a strong need for closeness, fear of being abandoned, and rejection (e.g., *"I often worry that my partner doesn't really love me"*). Participants indicated their level of agreement with each item on a 7-point Likert type scale from 1 (totally disagree) to 7 (totally agree). The mean scores of each dimension were calculated. Higher scores indicate higher levels of attachment anxiety and avoidance.

### Attachment to God

Attachment to God was measured by Attachment to God Inventory (AGI) developed by Beck and McDonald (2004). The scale assesses attachment to God by the two dimensions of anxiety and avoidance. Avoidance subscale (14 items;  $\alpha = .84$ ) measures the lack of intimacy, being unable or unwilling to depend on God and emotional distance towards God (e.g., *"I am uncomfortable being emotional in my communication with God"*). Anxiety subscale (14 items;  $\alpha = .80$ ) measures the worry about the relationship with God, being unable to feel God and jealousy over others being closer to God than oneself, indicating that there are certain perceived barriers to being closer to God. (e.g., *"I worry a lot about my relationship with God"*). Participants indicated their level of agreement with each item on a 7-point Likert type scale from 1 (totally disagree) to 7 (totally agree). The mean scores of each dimension were calculated.

### Image of God

The image of God was measured by Authoritarian/Benevolent God Scale developed by Johnson, Okun, and Cohen (2015). The scale assesses the perceived image of God by two dimensions: benevolent ( $\alpha = .95$ ) and authoritarian ( $\alpha = .90$ ). Both dimensions have 6 items on a 5-point Likert type scale from 1 (definitely wrong) to 5 (definitely right), consisting of adjectives of God's perceived benevolent and authoritarian nature (e.g., 'God is forgiving'; 'God is authoritarian', respectively).

### Prosociality

Prosociality was measured by a single item first used by Clobert and Saroglou (2013): If you were to win some money by a lottery, what percentage of it would you keep to yourself and your relatives and what percentage would you give to strangers for help (donation, granting scholarship to students, building a school, etc.). The prosociality score was derived from the percentage given to strangers for help. Higher percentages indicate higher prosociality (see also Van Cappellen, Saroglou, & Toth-Gauthier, 2014).

### Feeling God and Religious Engagement

Feeling God and Religious Engagement were also measured by single item which originally belong to The Duke University Religion Index (DUREL; Koenig & Büssing, 2010) that aims to measure intrinsic religiosity (for the Turkish version of the scale see Yilmaz, 2015). The two single items of Feeling God and Religious Engagement directly make statements by which participants indicated their level of agreement with each item on a 5-point Likert (disagree-agree) type (e.g., “*I feel a divine creator in my life*”; “*I make great effort to include my religion into everything I do in my life*”, respectively).

## Results

### *Data Analytical Strategy*

To examine the factor structure of the AGI, we ran a confirmatory factor analysis (CFA) using MPlus 7.11 (Muthén & Muthén, 1998-2011). We tested a two-factorial model for the full 28-item AGI (see Table 1). The model was estimated with two latent factors for each dimensions, anxiety and avoidance. We also estimated the model with only one factor, indicating attachment to God dimension. Then, we compared these examined models by using BIC values to find out the best-fitted model, because these two models were not nested.

We evaluated model fit by the Chi-Square Model Fit index, the Root Mean Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI), the Akaike Information Criteria (AIC), and the Standardized Root Mean Square Residual (SRMR). The  $\chi^2/df$  ratio was also used as an additional model fit index because the Chi-Square test of absolute model fit is sensitive to sample size. Following previous work, RMSEA value below .06 was considered a good fit (Hu & Bentler, 1999; Steiger, 2007), while SRMR values less than .08 were evaluated

as an indicator of an acceptable fit (Hu & Bentler, 1999). Additionally, the CFI is one of the most widely reported fit indices, with Hu and Bentler (1999) suggesting values equal to, or greater than, .95 on this index as a good fit. To examine the predictive validity of the AGI, we also correlated subscales of AGI with adult attachment dimensions (i.e., anxiety and avoidance). Finally, we ran a path analysis to see if there are direct and indirect associations between attachment to God, the image of God dimensions (i.e., punishment and forgiveness), and prosociality.

### *Structural Validity*

We ran CFA for AGI after atheists and participants who did not report their religious affiliations were excluded from the data set. The resulting participant size were 143 and model estimation suggested that the model poor fit to the data ( $\chi^2(349) = 1001.44$ ,  $CFI = .59$ ,  $RMSEA = .11$ , (90% CI [.10–.12]),  $SRMR = .13$ ). Some items were not significantly loaded to relevant factors (i.e., item 11, 13, 17, 19, and 25 for anxiety dimension; and item 14, 22, 26, and 28 for avoidance dimension; please see these items provided in Table 1). Thus, we excluded these items from further model estimations. The resulting model estimation with excluded items still suggested poor fit to the data ( $\chi^2(151) = 365.91$ ,  $CFI = .76$ ,  $RMSEA = .10$ , (90% CI [.09–.11]),  $SRMR = .11$ ). Model modification indices also suggested some correlated errors between observed variables. We freed only within factor items as suggested elsewhere (Hoyle, 1995; Klein, 2004). These correlated errors were between item 16 and item 2 and 12; item 18 and item 2 and 4; item 20 and item 10; item 21 and item 3; and item 27 and item 9. After adding correlated error between these items, the model acceptably fit to the data ( $\chi^2(144) = 270.70$ ,  $CFI = .86$ ,  $RMSEA = .08$ , (90% CI [.06–.09]),  $SRMR = .10$ ). Finally, we compared the one-factor solution with the original two-factor solution. Because the one-factor model and two-factor model were not nested, we used BIC values as a comparison parameter. The two-factor model had lower BIC value (BIC = 11288.70) than the one-factor model (BIC = 11505.37), suggesting that the two-factor solution (i.e., anxiety and avoidance) could be used in this scale (see Fabozzi, et al., 2014 for comparison of non-nested models). Reliability analyses revealed good Cronbach's Alpha values for both factors of the AGI (i.e.,  $\alpha = .89$  for anxiety dimension,  $\alpha = .91$  for avoidance dimension; see Table 1).

TABLE 1 CFA Factor loading for AGI items

Item#	AGI Items	Anxiety	Avoidance
4	I am totally dependent upon God for everything in my life. (R)		0.94
18	I fear God does not accept me when I do wrong.		0.90
8	I am uncomfortable allowing God to control every aspect of my life.		0.78
26	Almost daily I feel that my relationship with God goes back and forth from "hot" to "cold."		0.78
28	Even if I fail, I never question that God is pleased with me. (R)		0.78
2	I prefer not to depend too much on God.		0.73
20	I worry a lot about damaging my relationship with God.		0.69
22	I am jealous when others feel God's presence when I cannot.		0.69
10	I am uncomfortable with emotional displays of affection to God.		0.68
24	If I can't see God working in my life, I get upset or angry.		0.49
12	I am uncomfortable being emotional in my communication with God.		0.24
6	I just don't feel a deep need to be close to God.		0.20
16	I often worry about whether God is pleased with me.		0.19
25	Sometimes I feel that God loves others more than me.	0.94	
11	It is uncommon for me to cry when sharing with God.	0.87	
17	I get upset when I feel God helps others but forgets about me.	0.76	
9	I let God make most of the decisions in my life. (R)	0.67	
21	I am jealous at how God seems to care more for others than for me.	0.51	
15	I worry a lot about my relationship with God.	0.44	
1	My experiences with God are very intimate and emotional. (R)	0.42	
23	I am jealous at how close some people are to God.	0.37	
3	My prayers to God are very emotional. (R)	0.34	

TABLE 1 CFA Factor loading for AGI items (cont.)

Item#	AGI Items	Anxiety	Avoidance
7	Daily I discuss all of my problems and concerns with God. (R)	0.33	
5	Without God I couldn't function at all. (R)	0.27	
27	I crave reassurance from God that God loves me.	0.22	
13	I believe people should not depend on God for things they should do for themselves.*		
14	My prayers to God are often matter-of-fact and not very personal.*		
19	I often feel angry with God for not responding to me.*		
	Cronbach Alpha	0.87	0.90

Notes. \* indicates excluded items after CFA estimations; (R) refers reversed coded items

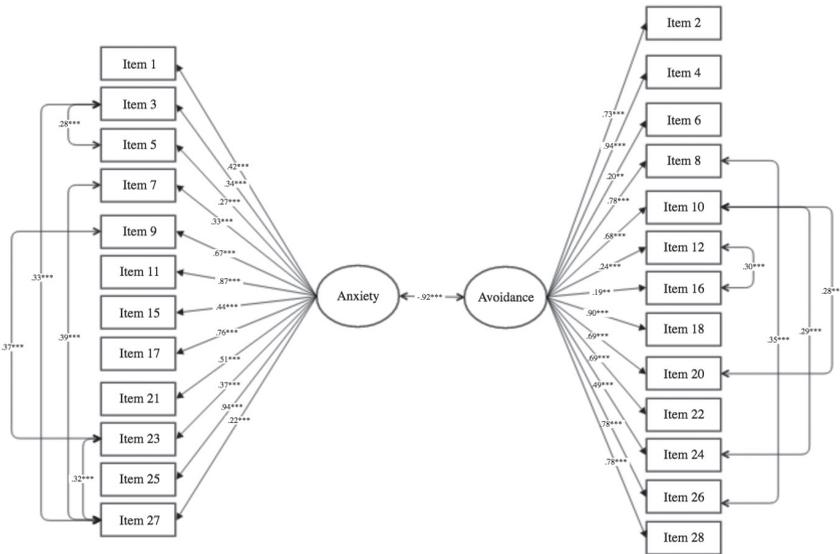


FIGURE 1 CFA results and factor loadings

### *Predictive Validity*

To investigate the predictive validity of the AGI, we ran several correlation analyses. Specifically, we correlated dimensions of the AGI with adult attachment dimensions (measured by ECR-R), religiosity level, subjective engagement level to religion, image of God (i.e., benevolent and authoritarian), and prosociality. Results showed significant associations among those variables (see Table 2). Specifically, the anxiety dimension of AGI was positively correlated with adult attachment anxiety and avoidance ( $r = .41, p < .01$ ;  $r = .16, p < .05$ , respectively). Additionally, anxiety and avoidance dimensions of the AGI were negatively correlated with each other ( $r = -.49, p < .01$ ). The correlations between the AGI-anxiety and religiosity, feeling God, and subjective engagement level to religion, benevolent and authoritarian image of God were also positively correlated ( $r = .27, p < .01$ ;  $r = .43, p < .01$ ;  $r = .37, p < .01$ ;  $r = .29, p < .01$ ;  $r = .21, p < .01$ , respectively). The AGI-avoidance dimension, on the other hand, was negatively associated with religiosity, feeling God, and subjective engagement level to religion and prosocial intentions ( $r = -.46, p < .01$ ;  $r = -.79, p < .01$ ;  $r = -.83, p < .01$ ;  $r = -.26, p < .01$ , respectively; see Table 2). Benevolent image of God was positively correlated with AGI-anxiety, religiosity, feeling God, subjective engagement level to religion and authoritarian image of God ( $r = .29, p < .01$ ;  $r = .31, p < .01$ ;  $r = .45, p < .01$ ;  $r = .40, p < .01$ ,  $r = .26, p < .01$ , respectively). On the other side, authoritarian image of God also was positively correlated with AGI-anxiety, religiosity, feeling God and subjective engagement level to religion ( $r = .24, p < .01$ ;  $r = .25, p < .01$ ;  $r = .48, p < .01$ ;  $r = .44, p < .01$ , respectively). Finally, prosociality was negatively correlated with AGI-avoidance and positively correlated with feeling God and benevolent and authoritarian images of God ( $r = -.26, p < .01$ ;  $r = .34, p < .01$ ;  $r = .20, p < .05$ ;  $r = .26, p < .01$ , respectively).

We also ran two separate hierarchical regression analyses to see if adult attachment dimensions predict Attachment to God after controlling for the religiosity level of individuals. Hierarchical regression analyses revealed that the AGI-anxiety was predicted by attachment anxiety ( $\beta = .46, p < .001$ ) and attachment avoidance ( $\beta = .14, p < .05$ ), after controlling for the religiosity level of participants. The AGI-avoidance, was negatively predicted by adult attachment anxiety ( $\beta = -.13, p < .05$ ), but not by avoidance, after controlling for religiosity.

### *Associations Between Attachment to God, Image of God, and Prosociality*

To investigate the relationship between Attachment to God dimensions and prosociality via the image of God, we ran a path analysis using MPlus 7.11 (Muthén & Muthén, 1998-2011). Specifically, we tested if attachment to God

TABLE 2 Zero-order correlations between the study variables

	ECR-R Anxiety	ECR-R Avoidance	AGI- Anxiety	AGI- Avoidance	Religiosity	Feeling God	Engagement	Benevolent Authoritarian
ECR-R Anxiety								
ECR-R Avoidance	.13							
AGI-Anxiety	.41**	.16*						
AGI-Avoidance	-.09	-.03	-.49**					
Religiosity	-.02	-.08	.27**	-.46**				
Feeling God	.05	.02	.43**	-.79**	.55**			
Engagement	.09	.04	.37**	-.83**	.77**	.81**		
Benevolent	-.02	.11	.29**	-.40	.31**	.45**	.40**	
Authoritarian	.02	-.05	.24**	-.45	.25**	.48**	.44**	.26**
Prosociality	-.07	.09	.07	-.26**	.13	.34**	.03	.20*

\* $p < .05$ ; \*\* $p < .01$

dimensions predict image of god (i.e., authoritarian and benevolent), and in turn, if they would predict prosociality. Following the ANOVA results, however, we excluded participants who defined themselves as atheists for further analysis and we ran the model testing with 174 participants. Since the definition of atheism is exactly the lack of a belief in any personal God, measuring whether they see God as either authoritarian or benevolent is not applicable for the current purposes. The hypothesized model was tested using the maximum likelihood estimation for parameters, and the biascorrected bootstrapping method, which is recommended when testing mediation with samples smaller than 400 (McCartney, Burchinal, & Bub, 2006).

The results of path analysis showed that the fit of the model was acceptable,  $\chi^2(3) = 7.60, p = .06, CFI = .95, RMSEA = .06$  [90% CI = .05-.07],  $SRMR = .03$ . As can be seen in Figure 2, The AGI avoidance dimension negatively predicted image of God as authoritarian ( $\beta = -.44, p < .001$ ) and benevolent ( $\beta = -.33, p < .001$ ) separately. Additionally, image of God as authoritarian also positively predicted prosociality ( $\beta = .32, p < .001$ ). To examine the indirect effect sizes, we drew 1,000 samples to estimate the biascorrected bootstrap standard errors and to obtain CIs for the estimates. The results indicated that the link between AGI-avoidance and prosociality was mediated via the image of God as authoritarian (not benevolent), 95% CI = .02 to .16.

### Discussion

These findings demonstrate that Attachment to God Inventory (AGI) showed promising results in becoming a reliable measure in a predominantly Muslim country. The model fit of the CFA of the two-dimensional construct of the AGI is barely significant, although it showed significant associations with adult attachment dimensions (ECR-R). This might be related to the usage of the term

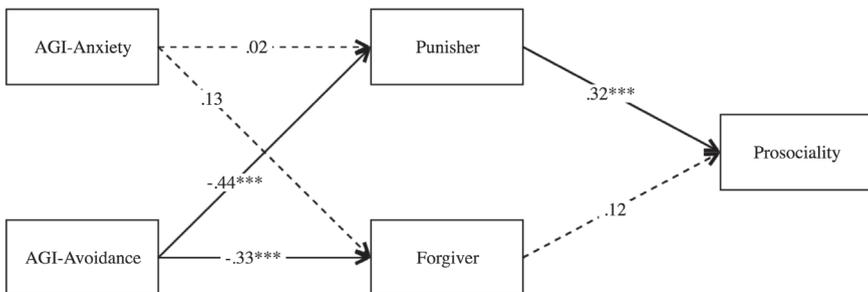


FIGURE 2 The relationship between AGI, perception of God, and prosociality

God in the Turkish language. To be precise, during the research process, the word God has been translated into the exact counterpart of the word “Tanrı” in the Turkish language. But this word might have a negative valence in the traditional Islamic circles since it reminds a Christian God concept (instead of the Islamic concept of “Allah”). Therefore, a different approach might be taken with the change of the word “*Tanrı*” into “*Allah*” to eliminate this possibility. In addition, we tried to replicate previous findings of the relationship between authoritarian God and prosociality and provided further support for the supernatural punishment hypothesis since belief in an authoritarian God predicts prosociality in the path analysis (SPH; Shariff & Norenzayan, 2011; Shariff & Rhemtulla, 2012; Yilmaz & Bahçekapili, 2016). However, the findings regarding the correlation between image of God (authoritarian and benevolent God) and prosociality are mixed, and inconclusive since both images have a positive relationship with prosociality. This finding seems difficult to explain, but might be peculiar to Islamic culture, and thus must be investigated in the future studies. Still, the current findings are not compatible with Johnson et al.’s (2013) findings showing that belief in a forgiving God is positively associated with prosociality and belief in an authoritarian God is related to aggression rather than prosociality since there is a positive correlation between belief in an authoritarian God and prosociality in this study. Finally, we tested and found support for the model suggesting that authoritarian aspects of God can work as a mediator between attachment to God and prosociality. Overall, the results suggest that the concept of God (authoritarian vs. benevolent) is an important variable in accounting for the relation between attachment and prosociality.

More specifically, we found that the anxiety dimension of AGI was associated with the attachment anxiety dimension of the ECR-R. The same was not true in the case of avoidance dimensions. This can be interpreted as people who hold a personal belief in God may see the avoidance dimension of AGI as distance towards God. It can be speculated that believers seem to think that avoidance towards God antithetical to religiosity. This speculation is in conjunction with some of the findings of this study. First, anxiety and avoidance dimensions of AGI were found to be negatively correlated with each other. Second, the anxiety dimension of AGI was positively correlated with religiosity, the level of feeling God, and subjective engagement of religious idea, while the avoidance dimension was negatively correlated with all of these variables. Additionally, atheist participants reported higher scores on avoidance dimension of AGI rather than the anxious dimension, and scored lowest at religiosity, feeling God and subjective engagement of religious idea variables (see Table 2).

Based on these observations, it could be concluded that the individuals who reported lower levels of religious engagement were avoidant in their relationship with God and they see God as an authoritarian figure. By seeing God as authoritarian, one will avoid cheating and be more prosocial, which is compatible with SPH. Furthermore, we found supportive evidence to attachment to God hypothesis (AGH; Kirkpatrick, 1997, 1999; Granqvist, 1998, 2003; Granqvist & Hagekull, 1999) by presenting the positive associations between the anxiety dimension of AGI and both of the adult attachment (ECR-R) dimensions, and also the negative association between the avoidance dimension of AGI and the anxiety dimension of adult attachment (ECR-R). As a result, this study provides empirical support for the attachment to God hypothesis for the first time in a predominantly Muslim country. Future replication attempts should include samples from other regions and religions about people turning to God in various situations of distress. These situations include loss through death and divorce (Granqvist & Hagekull, 2000, 2003; Loveland, 1968; Parkes, 1972), fear in relation to serious illness (Johnson & Spilka, 1991; O'Brien, 1982), emotional crises (Clark, 1929; James, 1902; Starbuck, 1899), relationship problems (Ullman, 1982), and other types of negative life events (see Hood et al., 1996), all of which are likely to activate the individual's attachment system (Bowlby, 1969a). The same can be related to primary and secondary strategies (i.e., hyperactivation vs. deactivation) that are applied to caregiving, care-seeking, exploration, and sexual mating evolutionary behavioral systems, which are in relation with the attachment theory (Ainsworth et al., 1978; Shaver and Mikulincer, 2002; see Mikulincer & Shaver, 2012 for an updated review).

### Limitations and Future Directions

This study has several limitations. Because our prosociality measure was only indirect, the real-life behavior could be measured by using some tasks such as behavioral economic games or behavioral observations based on realistic situations (i.e., Baumert, Halmburger, & Schmitt, 2013). Also, data as a whole were collected through a social media platform (i.e., Facebook). Data collection processes via social media platforms can be problematic for the external validity of psychological research because there is a possibility of participants being only the kind of people that are interested in the subject of the study, which in turn may jeopardize the generalizability of the findings. In addition, some factor loadings of AGI items were low compared to the original study. Therefore, it seems that the concept of attachment to God is working differently in a Muslim sample compared to previous works. Additional research is

required to strengthen the claim that the concept of attachment to God is applicable to Islamic culture. Finally, the analysis overall is based on a relatively small sample. Further studies should replicate these findings in high-powered studies.

### Conclusion

Overall, the utility of the Attachment to God Inventory (AGI; Beck & McDonald, 2004) in a predominantly Muslim sample was demonstrated for the first time in this study. Findings yielded promising results in favor of attachment to God concept and suggest that AGI can be a reliable way to measure it in a predominantly Muslim sample. The study also provided some support for the SPH in a path analysis but the results are generally inconclusive regarding the correlation between the image of God and prosociality. Also, it added Attachment to God into this formulation and showed that the image of God can work as a mediator in this relationship. In other words, future attempts trying to explain prosociality should consider the important roles of the concept of God (Authoritarian/Benevolent) and different attachment relationships (i.e., adult attachment and attachment to God).

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