Various Religious Constructs and Their Effects on Feelings of Connection with “The Other”

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Abstract

The relationship between religion and sense of interconnectedness has been reported in psychology and anthropology, but remains understudied in empirical research. Looking at related aspects, some studies show that religion increases prosocial attitudes and behaviors, while others show that it increases antisociality (for a review see Preston, Ritter, & Hernandez, 2010). However, these studies are limited in that they have mostly considered religion as a single construct. In the current study, we utilize distinct categories within religion and treat them as separate constructs. Participants were primed with these various categories then completed different scales that measure feelings of connection. In order to access the construct of global worldview interconnectedness, we also present a newly developed measure and a pilot study testing the measure (The Perception of Global Unity Scale). Results show no effect of religious priming on the measures of connection and no difference between the different distinct categories within religion. Looking at individual differences on measures of religiosity and their relation to the measures of connection, we found that sense of connection with one’s community and one’s nation were correlated with higher religiosity, while sense of connection with the global population was more related to higher spirituality. Discussion focuses on directions for future research and implications for the relationship between religion and feelings of connectedness with others and the world.

Keywords: religious cognition, religion, God, spirituality, priming, interconnectedness.
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Religion is a multidimensional construct that has been defined in various ways. Scholars have devised multiple components that relate to how an individual may manifest different forms of being religious (Allport & Ross, 1967; Batson, 1982; Glock & Stark, 1965; Whitley & Kite, 2010). In 1902, William James proposed a distinction between personal and institutional religion. Personal religion refers to the relationship that the believer has with the divine, while institutional religion relates to the rituals, theology, and social orientations within a religious group (James, [1902] 1988). Often times an individual holds a mixture of these aspects with varying degrees of each, and one may or may not take precedence over the other (James, [1902] 1988). Psychologists of religion have made other distinctions, one of which is religiousness versus spirituality (Zinnbauer & Pargament, 2005). Religiousness or religiosity has come to be associated with the public realm of membership in a religious institution that adheres to official denominations and doctrines. Conversely, spirituality is associated with the more private realm of thought and belief, not necessarily pertaining to an official doctrine (Zinnbauer & Pargament, 2005). Another distinction is committed versus consensual religion (Allen & Spilka, 1967). Consensual refers to socially accepted forms of religiousness, while committed refers to more personal forms (Allen & Spilka, 1967). There is also the distinction of coalitional versus devotional religiosity (Hansen & Norenzayan, 2006). Coalitional religiosity places an emphasis on community, while devotional religiosity places a stronger emphasis on belief and personal worship (Hansen &
In forming these theoretical distinctions, researchers have examined different ways in which people can be religious. For example, any given two people both might consider themselves as religious, but they come about that conclusion differently. An avid churchgoer may be considered religious even if he or she never prays or devotes time to God outside of the church. Conversely, another person may never go to church, but still pray often and devote a significant amount of time to worship, and be considered religious. The avid churchgoer falls on the side of institutional, while the other person has a more personal relationship with religion.

The distinctions mentioned are certainly not the only discernments under the super-heading of religion. Moreover, each binary at least loosely parallels William James’ institutional vs. personal religion. The distinctions previously discussed were made primarily through observing how people can be religious. In other words, rather than empirically derived, the theoretical binaries were worked out by asking and observing how people behave with relation to religion. Beginning in the 2000s, a new group of experimental researchers began using techniques such as priming and construct activation (Bargh, Chen, & Burrows, 1996) to manipulate religious cognition. By using these methods, researchers can investigate causal relationships between religion and its effects on people’s thoughts, feelings, and behaviors (Preston & Ritter, 2013). The current study utilized categorical distinctions within religion that have been empirically derived (discussed later), to separately prime various religious constructs, and then measured the effect on sense of connection with the other, and a general sense of connectedness within the
world. Given our interest for the relationship between religion and sense of connection, we now turn to the literature concerning that topic.

**Feelings of Connection with “The Other”**

In the present work, we investigated the relationship between categories of religious constructs and the sense of connection with “the other.” Religion is often related to a sense of interconnectedness and unity (Piedmont, 1999). Throughout history, religion has been an avenue for uniting the body and the spirit, reason and emotion, ethics and actions, different generations, the self and other, and more (Saroglou, 2006). In the conception of pantheons, some mythologies show the expression of multiple gods to be an ultimate conglomerate of an underlying spirit. In parallel, through Abrahamic religions we see an emphasis on one God.

Interconnectedness and unity tie into the concept of oneness. These ideas have been developed by Campbell (1949), who also argues that the mysticism of religions often teaches of a unity that is both transcendent (existing beyond the limits of physics and ordinary experience) and immanent (existing within everything). Rituals connect people with the ancient myths (Campbell, 1949) and religious communalism reinforces sociality (Saroglou, 2006). This relationship between religion and interconnectedness has been reported in psychology and anthropology, but has not been studied very much in empirical research (Van Cappellen & Saroglou, 2012). Moreover, which aspects of religion promote this sense of unity remains unknown. However, we do know that not all aspects of religion are related to a sense of connection. An opposite construct plays a role in religion is well, that is, prejudice.
Religion and prejudice are strongly linked as shown by a multitude of research (Hall, Matz, Wood, 2010; Hunsberger, 1995; Shen, Yelderman, Haggart, & Rowatt, 2013; Whitley, 2009). As we mentioned in the opening paragraph, there are many different ways to be religious. Some people are more dogmatic and rigid than others, while others are more loose and willing to question their own beliefs. Dogmatism is considered to be a type of cognitive inflexibility, which leads people to hold more stereotypes (Hunsberger, 1995). Different types of religiosity are more related to prejudice than other types. Right-wing authoritarianism (RWA) and religious fundamentalism (RF) have both been associated with higher levels of racial and anti-gay prejudice (Hall et. al, 2010; Hunsberger, 1995). Those who are more fundamentalist tend to believe that they hold the one true viewpoint and they must defend it against all opposition (Altemeyer & Hunsberger, 1992) and right-wing authoritarians tend to have a “high degree of willingness to submit to authorities they perceive as established and legitimate, who adhere to societal conventions and norms, and who are hostile and punitive in their attitudes towards people who don’t adhere to them” (Stenner, 2009). In the current study, we focus on the positive attitude and feeling of connection. In order to discover which aspects of religion promote feelings of connection, we used priming methodologies to activate different religious constructs in people’s mind.

**Priming**

Priming refers to the facilitative effects one stimulus has on a response to another stimulus (Tulving, Schacter, Stark, 1982). Research on this association was conducted in the 1970s and has led to the development and use of various priming
techniques (Meyer & Schvaneveldt, 1971; Schvaneveldt, Meyer, 1973; Meyer, Schvaneveldt, Ruddy, 1975). In their original research, Meyer and Schvaneveldt (1971) presented participants with two strings of letters simultaneously, one displayed above the other on the page. The participants had to decide whether or not each string of letters were words. The results showed they responded faster for pairs of commonly associated words (e.g. APPLE-ORANGE) than for pairs of unrelated words (e.g. DOCTOR - BREAD) (Meyer & Schvaneveldt, 1971). These results indicate that an earlier stimulus (the word on top) can influence one’s processing and reaction to a subsequent stimulus (the word on bottom).

Priming has also been shown to affect behavior. In the classic study by Bargh, Chen, and Burrows (1996), for example, participants were primed with a stereotype of the elderly by reconstructing scrambled sentences that contained one prime word, such as *Florida, bingo, or retired*. Results showed that those primed with elderly stereotypes walked more slowly after leaving the study than those primed with neutral words.

Furthermore, certain attitudes or mental constructs can be activated through priming methodology. For example, Reed, Aquino, and Levy (2007) activated either a high-morality condition or a low-morality condition before asking participants to allocate money in a hypothetical charity donation. They primed subjects through a story writing technique. For the high-morality condition, participants were given five to seven words (e.g. *compassionate, fair, caring, etc.*) and asked to think about the words and then write a story that includes each of the words. For the low morality condition, participants were asked to do the same with words not related
to morality such as *desk, pen, street*, etc. They found a difference in the results between conditions: the participants primed in the high-morality condition gave greater amounts to a hypothetical charity.

The priming method of unscrambling sentences, the story writing method using key words, along with many others such as the word search technique, and the recollection technique, etc. have been shown to be effective priming strategies (Matsukawa, Snodgrass, & Doniger, 2005; Reed et. al, 2007; Stanovich & West 1983).

**Religious Priming**

The experimental technique of priming has also been used in the study of the psychology of religion. Here we focus on studies that have investigated prosociality or prejudice/aggression as an outcome. First, concerning prosociality, when priming religious constructs, studies indicate that religion promotes prosocial attitudes and behaviors (Preston, Ritter, & Hernandez, 2010). For example, Shariff and Norenzayan (2007) demonstrated that participants gave more money to a stranger in an anonymous dictator game when primed with religious concepts. Pichon et. al (2007) showed that those who were primed with religion were more likely to take a larger number of charity pamphlets than those who were not primed with religion, which indicates that religious primes increase prosocial intentions. Studies have also shown that religion cognition decreases participants likelihood of committing immoral acts like cheating on a task, retaliation, or being drawn toward sinful temptations (Fishbach, Friedman, and Kruglanski, 2003; Randolph-Seng and Nielsen 2007; Saroglou, Corneille, & Van Cappellen, 2009).
In addition and in opposition to prosociality, religious priming has also led to increased prejudice in some situations. For example, some studies show an increased level of prejudice against an outgroup of African Americans when white participants were primed with religion (Johnson, Rowatt, & Labouff, 2010; Rowatt, Carpenter, Haggard, 2014). In another study, religious priming has been shown to promote aggression toward strangers in a competition (Bushman et. al, 2007). In this study, participants all read a violent story said to come from the Bible or an ancient scroll. Half of the participants were told that the violence was sanctioned by God and the other half were told that God did not sanction the violence. Their results showed that aggression toward strangers (via a loud noise in the stranger’s headphones) increased when the passage was said to be sanctioned by God (Bushman et. al, 2007).

By examining previous research, we see that priming religion causes various results that often oppose each other. Why does priming religious concepts lead to such different outcomes? One of the limits of previous studies is that they have not taken into account the multi-facets of religion. Most have used priming words that make no distinction between the different facets within religion. They have used words related to different concepts within religion such as supernatural agents (e.g., God, spirit), religious practices (e.g., prayer, worship), and religious adjectives (e.g., sacred, divine) as part of a single manipulation (Ritter & Preston, 2013). Because most researchers use at least four words in their priming manipulations, they often activate different religious concepts simultaneously without differentiating between them (Preston & Ritter, 2013). This type of manipulation creates uncertainty as to
the distinct source of the cause of the behavior.

**Making Distinctions**

Some recent experimental studies began to differentiate between types of religious concepts. In one study (Hernandez & Preston, 2010), researchers distinguished questions pertaining to 'belief in God' and 'religious affiliation' as separate condition manipulations. In order to prime each condition separately, researchers used the following technique before giving the participants the DVs: In the God condition, they asked participants, “Do you believe in God?” In the religion condition they asked, “What is your religious affiliation?” They found that God-related primes increased donations to an outgroup charity, while religious affiliation primes did not (Preston, Ritter, & Hernandez, 2010). Ritter & Preston (2010) found that in a prisoner’s dilemma game, God primes increased cooperation with an outgroup of Indian males, while religious affiliation primes increased cooperation with an ingroup of white males. Another study conducted in Israel using different manipulation techniques found similar results (Ginges et. al 2009). Before completing the DVs, in order to prime participants, in one condition, participants were asked how often they attended a synagogue, and in the other condition they were asked how frequently they pray. These conditions represent an institutional religion versus personal religion distinction, respectively. The results show that the synagogue attendance prompt increased Israelis' support for suicide attacks against Palestine, while the prayer prompt decreased the support for attacks (Ginges et. al 2009).

Previous research has sometimes tried to account for different categories
within religion (as mentioned above), but the way they have differentiated between categories has not been based on empirical derivation. In the present study, we used a differentiation based on an empirically derived distinction. Recent research has shown support for the psychological distinction between three categories of religious concepts (Ritter & Preston, 2013). In order to discern multiple categories, researchers gathered religious words commonly used in priming techniques and used a card-sorting task to have participants arrange the words into any number of categories. They used multidimensional scaling, cluster analysis, and property fitting to analyze the words and their relationships to each other.

They found that there are three relatively distinct categories of religious concepts: 1) agents 2) spiritual/abstract and 3) institutional/concrete. Religious agents are often supernatural (e.g. God or angel), or those figures considered to be beings of high holiness (e.g. saints and prophets). The spiritual/abstract category consists of words and ideas such as belief, faith, and miracle, etc. The institutional/concrete category consists of words such as scripture, shrine, and ritual (Ritter & Preston, 2013).

On the continuum of spiritual to institutional, the spiritual/abstract category is the farthest toward the spiritual end, while the agents category is in between, and the institutional/concrete is farthest toward the institutional end (Ritter & Preston, 2013). The spiritual to institutional continuum roughly parallels the abstract to concrete continuum. On average, the religious agents are slightly more institutional than the spiritual/abstract concepts, at least in part because they are more accessible and easier to conceptualize into a physical form. In general, according to
the analysis of Ritter and Preston (2013), the words in the agent category are relatively much closer to the spiritual/abstract words than they are to the institutional/concrete words.

As emphasized above, the latest conceptualization distinguishes three broad categories of religious constructs. The following paragraphs provide more information about the theoretical basis that underlies the distinction. There is a growing body of research that has been done on the implications of religious agency for social and moral behavior (e.g. Atran & Norenzayan 2004; Boyer, 2001; Ritter & Preston, 2013). When people view God as an agent who is watching and judging their behavior, they have reason to act in accord with a certain moral standard (Shariff & Norenzayan, 2007). The benevolence of God personifies the moral standard and contains the means for moral enforcement; therefore, this agency can guide behavior and may have been involved in the evolution of large-scale cooperation (Johnson & Bering, 2006; Norenzayan & Shariff, 2008).

God may also be seen as an omnipotent figure willing and able to elicit harsh wrath, and through this fear of punishment, influence the actions of people (Shariff & Norenzayan, 2007). Saraglou et. al (2009) found that religious priming activates submissive behavior in those who are dispositionally submissive and promotes an increased acceptance of revenge when requested by the researcher, in submissive individuals. This research suggests that religion may facilitate participants' susceptibility to social influence, at least in submissive people. The religious priming coupled with the influence of an agent (the experimenter offering a request for revenge), acted in combination to produce the effect.
Some religious words, such as scripture, communion, and ritual, reflect more concrete objects or activities, while other words such as belief, faith, and miracle reflect more abstract concepts (Ritter & Preston, 2013). Abstract thinking vs. concrete thinking has been shown to have divergent effects of people’s thoughts and behaviors, as in construal level theory (Trope & Liberman, 2010). Luguri, Napier, and Dovidio (2012) found that abstract thinking can lead to reduced prejudice against outgroup, at least in part because it leads to a more open and fairness oriented mindset. When thinking abstractly, one focuses on the bigger picture and when thinking concretely one focuses on the details and features that are less essential to the overall gist.

**The Present Research**

The current study seeks to illuminate which aspects of religion promote feelings of connection with “the other.” As mentioned above, evidence for distinct mental representations within the psychological construct of religion have been found using a card-sorting task (Ritter & Preston, 2013). Again, these separate, but not entirely unrelated categories are as follows: 1) agents, 2) spiritual/abstract, and 3) institutional/concrete. The current study attempts to experimentally show that different religious constructs have different effects, which may be implied in the divergent effects of prosociality and antisociality in past research.

We present a pilot test for a newly developed measure (discussed below) and a study that leveraged these various religious categories as the basis for the current experimental manipulation, and subsequently measured sense of connection. We predict that the induction of God as a Spiritual/Abstract concept will create the
strongest feeling of connection with, followed by God as an agent, and institutional/concrete religious concepts promoting connection with an in group (hypotheses explained in full detail later under Study 1).

**Measuring Sense of Connection**

In order to operationalize and subsequently quantify the feeling of connection with “the other,” I used a series of previously empirically validated scales along with a new self-developed implicit measure that is related but distinct from the previous measures.

*Inclusion of Other in the Self (adapted) Scale (IOS)* (Aron, Aron, & Smollan, 1992). The IOS is a visuospatial measure used to gauge how strongly a person feels a sense of closeness with an “other;” the other may be a friend, a romantic partner, or a group of people, etc. It is composed of graphics of eight dyads of circles similar to Venn diagrams that represent different degrees of interpersonal interconnectedness (See Appendix for example). On one end of the scale is shown two circles (one represents the self, and one represents “the other”), and as the scale proceeds, the circles begin to overlap and become progressively close to each other until the two circles totally overlap each other, indicating the highest level of closeness with “the other.” “The other” can be made to be anything. In the present research, there were three IOS scales presented with varying groups represented by the label, “the other.” Those groups were either “people in my community,” “Americans,” and “People all over the world.” A fourth IOS measured participants’ sense of closeness with the entire world as “World” was labeled in the circle alongside a circle labeled “Self.”

*Identification with All of Humanity Scale (IWAHS)* (McFarland, Webb, & Brown,
The IWAHS is a measure that operates to quantify the feeling of deep caring for all people despite their race, religion, or nationality (McFarland, Brown, & Webb, 2013). Identification with all of humanity is a psychological construct that incorporates more than just the absence of prejudice; it includes the feeling of closeness to all of mankind and all of humanity belonging to one family (McFarland et al., 2013). The IWAHS consists of nine three-response items, with responses on a five-point scale, ranging from 1 (not at all) to 5 (very much) (example items in Appendix). Each question that relates to social closeness has tabs for “people in my community,” “Americans,” and “people all over the world.” The sum of the scores for the questions pertaining to “people all over the world” constitutes the identification with all of humanity. By presenting all three categories together, a comparison is implied, but not explicitly requested (McFarland et al., 2013).

The Perception of Global Unity Scale (PGUS)

Although the previously mentioned scales (IOS & IWAHS) measure social closeness and a sense of interconnectedness, we also wanted to capture sense of unity as it relates to an individual’s worldview. Building from the aforementioned scales, we created the Perception of Global Unity Scale to measure a general sense of global unity. PGUS is a visuospatial measure used to grade the participants’ perception of the sense of unity or division of the world (see Appendix). It is presented as one item, with five response options, each one a different version of the same world map. On one extreme, a grey-scale image of the world is presented with sharp and heavy nation and state borders. As the scale proceeds, the boundaries fade with each successive marker, until on the opposite extreme the
image of the world has no borders at all. A choice of the world with hard boundaries indicates the participant’s perception of the world is more divided, while a selection of the world without boundaries indicates a stronger perception of unity of the world. Several measures access the relationship between the participant and another person, group, or the world, but no measure incorporates visual world map images to access participants’ feelings about the general level of connectedness within the world. Because this measure is new, a report will follow on the pilot testing.

**PGUS Pilot Test**

*Method*

103 participants (68.0% male, 32.0% female; mean age = 32.33 years, SD = 9.795) were recruited online through Amazon Mechanical Turk (MTurk), and compensated $0.35 for the completion of the survey. The survey was given through Qualtrics and consisted of the new measure (PGUS), along with the IOS, IWAHS, demographics, and a short 7-point Likert scale that measures religiosity and spirituality (Saroglou & Munoz-Garcia, 2008). In order to test the validity of the measure, no priming manipulation was used for the pilot testing. The intention was to investigate the internal and external validity of the scale and observe the correlations between the new measure and similar existing measures on sense of connection. We also tested for order effects by presenting the PGUS in two different orders, one beginning with stark borders and ending in no borders (order 1), and the other in reverse, beginning with no borders and ending with stark borders (order 2). Participants were randomly assigned to each order, providing a fairly
even ratio of each order (order 1 = 53.5%, order 2 = 46.5%). After presenting them with all of measures, participants were asked their thoughts on the PGUS, and subsequently their thoughts about that same scale after we informed them of the intended purpose of the measure.

Results

Means and standard deviations for all measures are detailed in Table 1. We found no evidence of any order effect between the different presentations of the PGUS (Order 1 Mean = 3.25, Order 2 Mean = 3.21; t (96) = 0.13, p = 0.48). Out of the 103 participants, 5 individuals were judged to have completely misunderstood the measure, based on their free response thoughts of the scale. Their exclusion leaves a total of 98 participants that we used to conduct the analyses. Participants were mostly Atheist (31%) and Agnostic (20%), in addition to Catholic (17%), Protestant (16%), other (8%), and spiritual, but not religious (7%). Of the total six images available as answer choices in the PGUS, image 5 was chosen by only five participants (5.5%). Table 2 details frequencies of the selection of each of the images (using order 1). Bivariate correlations between the new measure and the existing measures are shown in Table 3. As detailed in Table 3 neither the IOS nor the IWAHS sense of connection with the world significantly correlate with the PGUS. However, in relation to the IWAHS, sense of connection toward community (r = -0.23, p = 0.02) and nation (r = -0.24, p = 0.02) negatively correlate with a sense of global connection as measured by the PGUS. The importance of God was shown to negatively correlate with the PGUS (r = -0.20, p = 0.05).
### Table 1

*Means and Standard Deviations for Each Measure*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGUS</td>
<td>3.23</td>
<td>1.67</td>
</tr>
<tr>
<td>IWAHS “People in my community”</td>
<td>3.06</td>
<td>0.86</td>
</tr>
<tr>
<td>IWAHS “Americans”</td>
<td>3.16</td>
<td>0.75</td>
</tr>
<tr>
<td>IWAHS “People all over the world”</td>
<td>3.04</td>
<td>0.79</td>
</tr>
<tr>
<td>IOS “World”</td>
<td>3.47</td>
<td>1.22</td>
</tr>
<tr>
<td>IOS “People in my community”</td>
<td>3.50</td>
<td>1.51</td>
</tr>
<tr>
<td>IOS “Americans”</td>
<td>3.86</td>
<td>1.41</td>
</tr>
<tr>
<td>IOS “People all over the world”</td>
<td>3.56</td>
<td>1.73</td>
</tr>
</tbody>
</table>

### Table 2

*Frequency of Each Response Chosen in the PGUS*

<table>
<thead>
<tr>
<th>Image</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image 1</td>
<td>18</td>
<td>18.4%</td>
</tr>
<tr>
<td>Image 2</td>
<td>17</td>
<td>17.3%</td>
</tr>
<tr>
<td>Image 3</td>
<td>22</td>
<td>22.4%</td>
</tr>
<tr>
<td>Image 4</td>
<td>21</td>
<td>21.4%</td>
</tr>
<tr>
<td>Image 5</td>
<td>5</td>
<td>5.1%</td>
</tr>
<tr>
<td>Image 6</td>
<td>15</td>
<td>15.3%</td>
</tr>
</tbody>
</table>

### Table 3

*PGUS Correlations with All Other Measures and Religiosity/Spirituality*

<table>
<thead>
<tr>
<th></th>
<th>PGUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>IWAHS “People in my community”</td>
<td>r = -0.23*</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>IWAHS “Americans”</td>
<td>r = -0.24*</td>
</tr>
<tr>
<td>Construct</td>
<td>Correlation (r)</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>IWAHS “People all over the world”</td>
<td>r = -0.03</td>
</tr>
<tr>
<td>IOS “People in my community”</td>
<td>r = 0.08</td>
</tr>
<tr>
<td>IOS “Americans”</td>
<td>r = -0.15</td>
</tr>
<tr>
<td>IOS “People all over the world”</td>
<td>r = 0.00</td>
</tr>
<tr>
<td>IOS “World”</td>
<td>r = -0.00</td>
</tr>
<tr>
<td>Importance of God</td>
<td>r = -0.20*</td>
</tr>
<tr>
<td>Importance of religion</td>
<td>r = -0.18</td>
</tr>
<tr>
<td>Importance of spirituality</td>
<td>r = -0.03</td>
</tr>
</tbody>
</table>

**Discussion**

Because there was no order effect for the PGUS, we are able to establish a standard order of the scale, identical to what was previously known as order 1, that is, the first image consists of the world map with stark borders and the final image consists of the map without borders. Furthermore, because image 5 was selected far
less than the other images, we have decided to remove it from the answer selection, which leaves the scale with a total of five image responses. We expected the PGUS to correlate with the other measures of connection (IWAHS and IOS) involving people all over the world. However, no evidence was found to support this conjecture. But we did find evidence that shows the PGUS might have implications for a globalist worldview. Both the IWAHS connection with “people in my community” and “Americans” was negatively correlated with the PGUS. In other words, those who feel a strong connection to either their community or their nation (America) were less likely to choose a world map with fewer borders. They were more likely to choose a representation of the world that clearly showed a greater amount of political borders.

It is possible the PGUS may not predict exactly what we were designing it to capture. It is conceivable that some people may choose an image based on the belief that diversity (as indicated by more political borders) represents unity of the world and humanity; therefore, effectively reversing the purpose of the scale. When examining participants’ free response thoughts on the new measure, there were a small number, approximately 4.8%, who appeared to exhibit this kind of thinking. A lack of political borders is not the only way to represent global unity. A selection of an image with strong borders within the PGUS may represent stronger affiliation to the close community. It is also possible that participants simply chose the map with which they are most familiar. We cannot be sure of the level of depth they exerted into deciding the appropriate world map based on their own worldview, or if they just chose the response that looked the most visually familiar. One of the advantages
of the design of the PGUS is that it attempts to access one’s sense of unity within the world through a means that does not give away its purpose. In order to access the intended construct, we were very meticulous about the language of the instructions. Even so, they may have been problematic. The original instructions read, “After reviewing the following six images, select the one that you believe most adequately represents your feelings toward the nature of the boundaries of the world.” After examining the free response questions on participants’ thoughts of the measure, we have edited the directions and the current scale now reads, “Please take a close look at the following five images of the world. According to your worldview, which picture best represents your own personal attitudes about the level of boundaries?” In the future, we plan to edit the PGUS as necessary, in order to increase its chance of accessing the construct it is designed to capture, without making its purpose obvious to the participant.

**Study 1**

Study 1 was designed to measure the effect of the activation of different types of religious constructs on feelings of unity with different targets. We have utilized a priming methodology to induce various religious concepts, and then measured participants’ feelings of connection with others and the world. We hypothesized that the spiritual/abstract category of religious concepts will promote the most feelings of connection. This hypothesis is based in part on construal level theory, which states abstract thinking leads to a focus on the bigger picture, while concrete thinking leads to a focus on smaller details (Trope & Liberman, 2010), along with previous research showing that abstract thinking leads to reduced
prejudice (Luguri, Napier, & Dovidio, 2012). Ritter & Preston (2010) found that God primes increased cooperation with an outgroup, while religious affiliation primes increased cooperation with an ingroup, demonstrating that cognition of God has a role in influencing increased prosociality toward an outgroup. Because religious agency has implications for morality, guiding behavior, and cooperation (Johnson & Bering, 2006; Norenzayan & Shariff, 2008; Shariff & Norenzayan, 2007), we hypothesize the category of religious agents to promote feelings of connection with the global population that rank just below the spiritual/abstract category. Finally, because religion has been shown to increase prejudice toward outgroup and imply a bias favoring the in-group (Johnson, Rowatt, & Labouff, 2010; Rowatt, Carpenter, Haggard, 2014), we hypothesize the institutional/concrete religious category to promote feelings of connection toward the in-group as represented by “People in my community,” and “Americans,” but lack an increased feeling of connection toward the global targets.

**Method**

**Participants**

166 participants (42.2% male, 57.8% female; Mean age = 37.1 years, SD = 13.2) were recruited online through Amazon Mechanical Turk (MTurk), and compensated $0.70 for the completion of the survey. Participants were mostly Caucasian (75.3%), in addition to African American (8.4%), Alaskan Native or American Indian (7.2%), Asian (4.2%), and other (4.8%). The religious affiliation of the participants was varied: Protestant (24.7%), Catholic (20.5%), Spiritual, but not religious (18.1%), Agnostic (13.9%), Atheist (10.2%), Muslim, Hindu, Buddhist,
Jewish, and other made up the remaining (12.6%).

**Procedure**

Participants were administered the online survey through Qualtrics. They were randomly assigned to one of four priming conditions: God as an agent, God as an abstract concept, institutional religion, and neutral/control. All groups were primed using a technique where a descriptive paragraph is given to the participant and he/she is asked to write a few sentences on how it resonates with him/her. The only difference between the groups was the type of religious priming they were given. Group 1 was given a paragraph about God as an agent (Agent condition). Group 2 was given a paragraph about God in the abstract sense (Spiritual/Abstract condition). Group 3 was given a paragraph about institutional religion (Institutional/Concrete condition). Finally, group 4 was given a paragraph about the history of the condiment mustard (neutral condition) (see Appendix for a copy of the text given to each group). Each participant then completed the series of measures and scales of connection. After these measures, they were given a short attention task and a distracter task. Next, we asked them their thoughts on the new measure. Finally, they answered a series of questionnaires as described below.

**Measures**

Just as in the pilot study, we included the *PGUS, IWAHS*, and *IOS* to measure sense of connection.

*Prosociality/sharing.* We also included a simple prosociality measure that quantifies a spontaneous tendency to share hypothetical gains (Clobert & Saroglou, 2013). Participants were asked what they would do with the money if they were to
hypothetically win a lottery of $100,000. They were asked to allocate a percentage of the funds to any expense of their choice, and write it in a space of ten open-ended lines below the question. The participants were not aware that our objective was to calculate how much they would keep for themselves and how much they would give to others. One judge, blind to conditions, classified their designated expenses into two categories: expenses for others (family, friends, donations to charity) and for oneself. We computed a score for each participant ranging from 1 to 4, 1 meaning 0-25% of expenses for others, then 2: 26-50%, 3: 51-75%, and 4: 76-100%. Higher scores correspond with a higher intention to share. This procedure and measure were chosen in order to reduce a possible social desirability bias.

*Additional questionnaires.* In order to control for individual differences on personality and religiosity, we included several additional questionnaires, one of which is a measure of *Right-Wing Authoritarianism* (RWA) (Altemeyer, 1981)(Smith & Winter, 2002). The scale is composed of 10 items that generally measures a willingness to submit to authorities perceived as capable, a tendency to adhere to societal conventions, and the likelihood to hold a hostile and punitive attitude toward people who do not share their ideals (Altemeyer, 1981; Shenner, 2009). The current scale consists of three subscales that measure constructs of submission, aggression, and conventionalism. A sample item in the aggression category is, “What our country really needs is a strong, determined leader who will crush evil, and take us back to our true path.” Participants answer based on a 1 to 7 Likert-type scale (1 = strongly disagree, 7 = strongly agree). Reliability for this scale was satisfactory ($a = 0.91$). We also included the *Revised 12-item Religious Fundamentalism Scale* (RFS)
VARIOUS RELIGIOUS CONSTRUCTS AND THEIR EFFECTS

(Altemeyer & Hunsberger, 1992). This scale is composed of 12 items that measures a strict adherence and unwavering attachment to a set of beliefs. A sample item is, “To lead the best, most meaningful life, one must belong to the one, fundamentally true religion.” Participants then answer a 1 to 9 scale (1 = very strongly disagree, 9 = very strongly agree). Reliability for this scale was satisfactory (α = 0.95). In order to measure a possible disposition for a need for social closeness, we included the Need to Belong Scale (Leary, Kelly, Cottrell, & Schreindorfer, 2013). Also included is the Big Five (TIPI – Ten Item Personality Inventory) (Gosling, Rentfrow, & Swann, 2003), to measure the five major dimensions of personality.

Results

Means and standard deviations for all of the dependent variable measures are shown in Table 4. To test for effects between conditions, we ran one-way ANOVAs for each measure of connection. No significant difference between conditions emerged; all p values were above 0.05.

Because previous priming research has sometimes found that religious priming does not affect the attitudes and behaviors of non-religious people, we performed additional analyses by removing Atheists and participants of a different religion than Christianity. The remaining sample contained Christians, Agnostics, and Spiritual, but not religious participants (N = 116). With this sample, we ran ANOVAs between conditions, and again found no significant effects. The lowest p value we observed (0.06) was concerning the IOS item involving connection with people all over the world. With Tukey’s post hoc test, we found that the agent (M = 3.30) and abstract (M = 4.40) condition were marginally significant (p = 0.097). In a
subsequent set of analyses we ran ANCOVAs controlling for the different moderators (right-wing authoritarianism, religious fundamentalism, Big-Five personality traits, and the need to belong). To one exception, the interaction effects were not significant.

Given that the priming conditions did not have an effect on the dependent variables of interest, we ran simple correlational analyses between the measures of religiosity/spirituality and the measures of connection. These analyses provide a picture of the general relation between individual religiosity and connection. The correlational analyses (Table 5) were performed on the sample including Christians, Agnostics, and those who are Spiritual, but not religious. Using this sample, we found that religious fundamentalism (RFS) was significantly positively correlated with feelings of connection to America as measured by the IWAH ($r = 0.20, p = 0.03$). Moreover, we found that right-wing authoritarianism (RWA) was positively related with feelings of connection with one’s community and nation as measured by the IWAH (respectively, $r = 0.25, p = .01$; $r = 0.25, p = 0.01$) and IOS (community: $r = 0.25, p = 0.01$, America: $r = 0.18, p = 0.05$). RWA in general was not correlated with global connection, but RWA subscale of conventionalism was negatively correlated with connection with people all over the world as measured by the IWAH ($r = -0.18, p = 0.05$) and the IOS ($r = -0.20, p = 0.02$).

Furthermore, the importance of religion and importance of God are not correlated with a sense of global connection as measured by the IWAHS, but the importance of spirituality is positively correlated with global connection ($r = 0.24, p = 0.01$). The PGUS is also positively correlated with the importance of spirituality ($r$
= 0.20, \( p = 0.02 \)), but not with religiosity or the importance of God.

### Table 4

*Means and Standard Deviations for all DVs*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGUS</td>
<td>3.33</td>
<td>1.69</td>
</tr>
<tr>
<td>IWAHS “People in my community”</td>
<td>3.42</td>
<td>0.86</td>
</tr>
<tr>
<td>IWAHS “Americans”</td>
<td>3.49</td>
<td>0.75</td>
</tr>
<tr>
<td>IWAHS “People all over the world”</td>
<td>3.36</td>
<td>0.70</td>
</tr>
<tr>
<td>IOS “World”</td>
<td>3.53</td>
<td>1.22</td>
</tr>
<tr>
<td>IOS “People in my community”</td>
<td>3.50</td>
<td>1.90</td>
</tr>
<tr>
<td>IOS “Americans”</td>
<td>4.19</td>
<td>1.76</td>
</tr>
<tr>
<td>IOS “People all over the world”</td>
<td>3.75</td>
<td>1.92</td>
</tr>
<tr>
<td>Prosociality/sharing</td>
<td>1.48</td>
<td>0.88</td>
</tr>
<tr>
<td></td>
<td>RFS Total score</td>
<td>RWA Conventionalism</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>PGUS</td>
<td>0.00</td>
<td>-0.08</td>
</tr>
<tr>
<td>IOS people in my community</td>
<td>0.16</td>
<td>0.25**</td>
</tr>
<tr>
<td>IOS &quot;Americans&quot;</td>
<td>0.06</td>
<td>0.18*</td>
</tr>
<tr>
<td>IOS &quot;People all over the world&quot;</td>
<td>-0.07</td>
<td>0.00</td>
</tr>
<tr>
<td>IOS world</td>
<td>-0.17</td>
<td>-0.11</td>
</tr>
<tr>
<td>IWAH &quot;people in my community&quot;</td>
<td>0.16</td>
<td>0.25*</td>
</tr>
<tr>
<td>IWAH &quot;Americans&quot;</td>
<td>0.20*</td>
<td>0.25*</td>
</tr>
<tr>
<td>IWAH &quot;People all over the world&quot;</td>
<td>-0.00</td>
<td>0.02</td>
</tr>
</tbody>
</table>

* $p < 0.05$, ** $p < 0.01$
Discussion

Priming religious cognition seems to have opposing effects. In some studies, religious priming has led to increased prosocial attitudes and behaviors (Pichon et al., 2007; Preston, Ritter, & Hernandez, 2010; Saraglou, Corneille, & Van Cappellen, 2009; Shariff & Norenzayan, 2007), and other studies have shown that it increases antisociality (Bushman et al., 2007; Johnson, Rowatt, & Labouff, 2010; Rowatt, Carpenter, Haggard, 2014). This variability may be due to the different types of priming words and concepts used to prime religion as a single construct. Because of this ambiguity, it is necessary to progress to priming more specific concepts within religion. In the current study, we did that by treating three distinct religious categories as different constructs. The three unique conditions were 1) God as an agent, 2) God as a spiritual/abstract concept, and 3) institutional religion.

We did not find any significant differences between conditions. Therefore, we looked at simple correlations between individual religiosity/spirituality and measures of connection. Results showed that religious people feel closer to their communities and America, but not to the global population. We could not change that with the priming, except that there is a general trend with the IOS item concerning people all over the world. We also found that the importance of spirituality was correlated with feelings of global connection, in addition to feelings of connection to the community and America. This finding is in line with previous evidence (Ritter & Preston, 2013; Trope & Liberman, 2010) that shows spirituality indicates a more abstract dimension of religious disposition. Because the abstract nature of spirituality positively relates to a stronger sense of
globalism, this evidence adds support to construal level theory (Trope & Liberman, 2010) that states abstract thinking is related to one being more aware of the bigger picture and focusing less on the smaller details.

Furthermore, we found that religious fundamentalism was correlated with a sense of connection to nation (America) and right-wing authoritarianism was correlated with a sense of connection to one’s community and nation. These findings suggest that fundamentalism and authoritarianism may have implications for nationalism and possibly localism. Multiple measures also showed that the importance of religion and sense of connection to one’s community were related. These results imply that religion has a significant communal value for those who partake. Spirituality relates to a sense of global connection, and religiosity relates to a sense of connection to one’s community and nation. Spirituality is a dimension that is by nature less attached to religious doctrine and dogma, and more flexible and accepting of various unorthodox beliefs (Zinnbauer & Pargament, 2005). This aspect allows it to function on a level that includes a social dimension inclusive of more than just those people who follow a specific doctrine. With a particular doctrine being less important to them, those who are spiritual may be more inclined to accept and feel connected to the global population.

In order to pursue the investigation of these results, future studies may utilize priming methodologies to elicit a religious fundamentalist disposition or an authoritarian disposition, along with the opposites of each, and measure whether those primes have any causal effect on feelings of connection with various local, national, and global targets. The inverse approach could also be taken, to prime localism, national patriotism, or global
identification, and then subsequently measure different religious and spiritual dispositions.

For the entire sample, there were no significant results between conditions; therefore, we failed to reject the null hypothesis. There may be a few reasons why there were no differences. 1) The priming technique: the priming may not have been strong enough to create an effect. The participants spent an average time on the priming task of 2.02 minutes (SD = 1.37), and then completed a total of four DV measures. It is possible that the descriptive paragraph technique may not have had the strength to hold a concept in participants’ mind while they were answering the measures of connection. The technique of describing a concept, and then asking the participant to reflect on it and write about how it resonates with them is not very widely used in religious priming research, so it may not have been as effective as we expected it would be. 2) Individual variability: given that we ask participants to reflect on the priming concept, some of them actually expressed their disagreement or explained their own beliefs. It is therefore possible that when writing about a specific category within religion, we actually primed more than that specific category. Therefore, the differences between conditions are blurrier. The level that they reflected on the priming concept also varies. They are asked to write a few sentences on how it resonates with them, but some individuals wrote one short sentence, and others wrote a short to lengthy paragraph. This variability yields a difference in intensity of how some participants were primed compared to others. 3) Online survey limitations: Participants could have done something else between the priming and the DV measures. They could be doing the survey with the television on or some other potential distracter that may affect the priming. Online studies do not provide a high level of controllability.
In order to address the concerns of Study 1, we have designed a follow up study where we alter the priming technique. The religious constructs are separated into three different categories (agent, spiritual, institutional). The priming method would use a story writing technique. This technique is adapted from a method used by Reed, Aquino, and Levy (2007) mentioned in the introduction. Participants are given five religious prime words that vary across conditions, according to Ritter and Preston (2013) categorization. They are then asked to write a story using each of the words at least once. In group 1, words referring to religious agents are listed: *angel, prophet, saint, God,* and *messiah.* In group 2, words referring to abstract religious concepts are listed: *belief, miracle, revelation, faith,* and *salvation.* In group 3, words referring to concrete religious concepts are listed: *ritual, holy day, altar, sermon,* and *scripture.* In group 4, words relating to neutral concepts are listed: *handkerchief, banana, computer, desk,* and *street* (neutral words from Reed, Levy, & Aquino (2007) and Van Cappellen, Corneille, Cols, & Saroglou (2011)). After priming, the same DVs as study 1 are used. Because Ritter and Preston (2013) showed there is a psychological distinction between religious agents, spiritual/abstract religious words, and institutional words, we utilized a design based on these concepts in the current study. In the follow up study we plan to utilize the actual words that made up the categories between which they found distinctions.

Future research should also exert further effort into developing and examining a measure that can implicitly capture participants’ worldview in relation to its quality of unity or division. The PGUS has been a valuable first step, but more work is needed to fully develop the measure or some scale similar to it. As of currently, this work is the first to
empirically examine the three distinct religious categories (agent, abstract, institutional) and their relation to feelings of connection with “the other.” We investigated the differences between these categorical conditions, but found limited variation between them. However, we did find a relationship between religiosity and connection to community and nation, as well as between spirituality and connection to the global population. The current work advances the knowledge of the relationship between religion, spirituality, and a sense of interconnectedness with “the other.” Both religion and a sense of connection are important constructs to study because they are relevant to everyday life at a personal level as well as a global level.
References


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Appendix

_IWAH sample items_

1. How much do you identify with (that is, feel a part of, feel love toward, have concern for) each of the following?
   a. People in my community
   b. Americans
   c. All humans everywhere

2. When they are in need, how much do you want to help:
   a. People in my community
   b. Americans
   c. People all over the world

_IOS_

In the diagrams below, “other” represents people in my community. Indicate which diagram best represents your relationship with those people.

A. Self Other
   B. Self Other
   C. Self Other

D. Self Other
   E. Self Other

F. Self Other
   G. Self Other
   H. Self Other
PGUS
Instructions: Please take a close look at the following five images of the world. According to your worldview, which picture best represents your own personal attitudes about the level of boundaries?

A.
VARIOUS RELIGIOUS CONSTRUCTS AND THEIR EFFECTS
VARIOUS RELIGIOUS CONSTRUCTS AND THEIR EFFECTS

C.

..........................................................................................................................
Priming Technique

1) God as agent

Instructions: After reading the following paragraph about God, reflect on it for a couple minutes, and write a few sentences on how it resonates with you.

God is often characterized as The Creator of the universe. He is always aware of the thoughts and actions of each individual. He is capable of any action. In fact, all of the events that take place in the universe are a result of His hand, through the means of His thoughts, His intentions, and His doing.

2) God as abstract

Instructions: After reading the following paragraph about God, reflect on it for a couple minutes and write a few sentences on how it resonates with you.
God is often characterized as The Absolute Infinite or The Ultimate. This force transcends the universe, but also underlies it, forming the very fabric of all of existence. This Ultimate Energy is the essence of all things and it is the rhythm that has caused everything that has ever happened and everything that will ever happen.

3) Religious institutional/concrete

Instructions: After reading the following paragraph about religion, reflect on it for a couple minutes and write a few sentences on how it resonates with you.

Religion in the Christian tradition often involves attending a church to participate in a worship service and/or listen to a sermon. Churches are often adorned with crosses and provide a holy space to pray and perform rituals like baptism and communion. Christians have moral codes based in The Ten Commandments and the scriptures of the Bible.

4) Neutral/Control – (Staub & Buchert, 2008)

Instructions: After reading the following paragraph about mustard, reflect on it for a couple moments and write a few sentences on how it resonates with you.

Mustard has been used as a condiment for almost 2,000 years. It is made from the seeds of the mustard plant. The whole, ground, or cracked mustard seeds are mixed with water, salt, lemon juice, or other liquids, and sometimes other flavorings and spices, to create a paste or sauce ranging in color from bright yellow to dark brown. The tastes range from sweet to spicy.