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Metaphors for God:

God is High, Bright, and Human in Implicit Tasks

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Abstract

God is important in the lives of many people, but God is not necessarily a physical thing for everyone. People use metaphors (e.g., “The man upstairs” or “God is the light”) that pair concrete concepts (high vertical space or brightness) with God in order to aid the understanding of this abstract concept. In three studies involving 294 participants and within-participants designs, we sought to determine if three metaphors for God (God is high, bright, and human) reflect not only the way people talk about God but also the way people think about God. In all studies, we used implicit reaction-time tasks to determine if participants would more quickly categorize God-related versus control words when the words were paired with human- or not human-related words or appeared in a high versus low location or in a bright versus dark font. In all studies, participants were faster to categorize God-related words when they were presented in a manner consistent with metaphor (high, bright, & with humanness). However, individual differences in belief in God, religiousness, and metaphor usage did not moderate the findings. The results reveal that people think about God in metaphoric terms, but these thoughts may not vary by related individual differences.

Keywords: God, metaphor, religion, implicit, embodiment

Metaphors for God:

God is High, Light, and Human in Implicit Tasks

God is an important entity to many people. A survey by the Pew Research Center found that about 90% of respondents in the U.S. said they believed in God or a higher power or spiritual force (Pew Research Center, 2018). Belief in God is associated with a number of important behaviors and beliefs (e.g., Flannelly, 2017; Johnson, Li, Cohen, & Okun, 2013). For example, Johnson et al. (2013) found that viewing God as a benevolent being was related to prosocial behavior whereas representing God as an authoritarian being was related to antisocial behavior. Other work suggests that belief in a God is related to cooperative behavior especially when people are concerned about their social standing and how they are perceived by others (Norenzayan & Shariff, 2008).

Although God is an important entity to many people, the concept of God is not necessarily a physical thing. Therefore, it is no surprise that people portray God in metaphoric terms, which involve physical concepts that are easier to understand and comprehend. For example, God might be considered to be high ("The man upstairs"), bright ("God is the light"), or human ("God the father"). Metaphors like these are used frequently in religious writing, such as in the Christian Bible. While such metaphors help people communicate about God (e.g., they inform people that God is good and/or powerful), they might also offer a broader revelation of how people think about God.

Lakoff and Johnson (1980, 1999) proposed a conceptual metaphor theory (CMT) in which they contend that metaphors map abstract concepts (e.g., God) to more concrete domains (e.g., human). In CMT, metaphoric mappings are cognitive associations, often learned through experience, that eventually allow people to think about or represent abstract

concepts (e.g., God) in terms that are more readily perceptible (e.g., humanness). For example, we know what a human is because we can see, hear, smell, and touch them. We cannot do this with God, but using human-related metaphors for God allows this concept to be easier to fathom (i.e., God is similar to a human).

The human metaphor is particularly apt. Guthrie (1995) has argued that we anthropomorphize or give human characteristics to the unknowable. Specifically, when faced with uncertainty, we tend to use explanations based upon what is known and people are intimately familiar with human behaviors and thoughts. Although such tendencies can occur in a multitude of areas (e.g., ghosts, cars, boats, etc.), the concept of God is particularly relevant because it is thought, in the Christian sense at least, that God created humanity in "his" own image. In the CMT view, metaphors are used for speech, but, perhaps more importantly, they also reflect something deeper about how people think about and represent abstract concepts (Landau, 2018; Landau, Meier, & Keefer, 2010). In this CMT sense, metaphor is more about the stuff of thought, than poetic language.

Research has shown, in a number of ways, how common metaphors appear to reveal how we think about abstract concepts (Landau et al., 2010). For example, early work showed that people more quickly recognized a positive word like candy if it was shown on the top versus bottom of a computer screen, but they more quickly recognized a negative word like criminal if it was shown on the bottom versus top of a computer screen (Meier & Robinson, 2004). Such results suggest that common metaphors for good and bad ("I'm feeling down") actually reflect the way we think about good and bad things because a vertical space manipulation influenced categorization times. Other work has shown related findings in

different domains (e.g., Meier, Robinson, & Clore, 2004; Schubert, 2005; Specker et al., 2018; see Landau et al., 2010, for an extensive review).

God and religion are seemingly appropriate areas for the study of conceptual metaphor considering the abstract nature of these concepts. Soliman, Johnson, and Song (2015) suggested that research on religion-related cognition should more strongly consider how physical experiences inform religious beliefs. Some work has shown how metaphors for God and religion seem to impact people's thoughts and behaviors in this domain. Meier, Hauser, Robinson, Friesen, and Schjedahl (2007; also see Chasteen, Burdzy, & Pratt, 2010, Lia & Cao, 2017) found that God is represented as high in vertical space. For example, in one study, God-related words were categorized quicker when they appeared on the top versus the bottom of a computer screen. In another study based upon recall, participants recalled God-like images as appearing higher on a computer screen than they actually originally appeared. Other work has shown that concrete experiences like cleanliness and brightness influence thoughts and behaviors related to God in a manner consistent with metaphors (God is both clean and bright; Fetterman, 2016; Persich, Steinemann, Fetterman, & Robinson, in press).

The processing of concepts associated with God appears to be influenced by concrete perceptions (e.g., vertical space) revealed through metaphor ("God is the most high"). Yet, the work in this area is limited (Soliman et al., 2015). Additionally, Sharp et al. (in press) suggested that the examination of God representations would benefit from the use of implicit tasks, as they have the power to reveal how people conceptualize the God concept, with less influence from how they should think about the God concept. That is, we may get at a better understanding of people's actual God processing than can typically be discerned from explicit measures. As such,

in three studies, we sought to replicate and extend past work on conceptual metaphors for God as well as examine novel predictions.

Current Investigation

Fetterman, Evans, French, and Meier (2019) analyzed 2,924 predominately Christian people's responses to the question "please try to give a brief description of what the term God means to you". The responses were coded for the metaphors commonly used and of the identified metaphors, we chose three physical domains: God is high, bright, and human. Given past work on conceptual metaphor, we expected that people's processing of God-concepts would be affected by manipulations involving vertical space, brightness, and humanness. If confirmed, such results would suggest that the physical concepts involved in conceptual metaphors are drawn upon by people to help them think about the concept of God.

We note that our chosen metaphors are particularly common when considering God from a Christian perspective. Our data was collected in the U.S. and we thus focused on a Christian version of God. Therefore, our findings are most relevant in this context, but that does not mean that other views of God are irrelevant and unworthy of study.

We also sought to determine if individual differences in metaphor usage, belief in God, and religiosity would influence these effects. Metaphors for God are commonly understood and, therefore, it could be that individual differences in these domains do not reflect differences in the strength of these mental associations. Further, the presence of an implicit metaphoric association only potentiates that an explicit metaphor is used or endorsed linguistically (Kövecses, 2010). Therefore, it may be the case that there is no association between these individual differences in explicit metaphor endorsement and implicit metaphoric associations. If, however, some people have a stronger belief in God, consider themselves more religious, or more readily believe that

God is high, bright, or human, then it could be that these individuals have stronger mental associations than individuals who have weaker beliefs along these lines (Robinson & Fetterman, 2014). As such, we deemed it worthy to explore such implicit-explicit correlations. We collected data in three studies, but we present them together given their similarity. The first study (God is high) attempted to directly replicate and extend Experiment 2 from Meier et al. (2007), whereas the second (God is bright) and third (God is human) studies involve novel attempts at examining conceptual metaphoric mappings about God.

Method

Sample Size Determination and Data and Ethics Statements

A data-collection plan was uploaded to the Open Science Framework website before data collection commenced (osf.io/e47wk). Our a priori power analysis included in the data-collection plan revealed that approximately 30 participants per study was needed to reach 90% statistical power given the medium effect size found in a high powered replication of implicit metaphoric associations involving bright/good and dark/bad (Meier, Fetterman, & Robinson, 2015). However, a knowledgeable reviewer pointed out that we used the wrong effect size in this analysis and with the correct effect size (f = .15), 81 participants was required to reach 90% statistical power. Either way, we were conservative and attempted to collect approximately 100 participants in each study. All measures, conditions, and data exclusions are reported. The data files with the cleaned data and syntax are also available at osf.io/e47wk.

Participants

God is High Study: Participants were 101 individuals (68 females, 32 males, 1 no-report) with a mean age of 23.61 (SD = 11.56) years. They completed the study for course credit

or $5 and a candy bar. Participants self-reported race was as follows: 81 White, 7 Asian/Pacific Islanders, 7 Hispanic, 3 Black, and 3 reported a mixed race.

God is Bright Study: Participants were 99 individuals (64 females, 30 males, 3 non-binary, 1 gender fluid, & 1 queer) with a mean age of 23.07 (*SD* = 10.49) years. They completed the study for course credit or $5 and a candy bar. Participants self-reported race was as follows: 74 white, 9 Hispanic, 5 Asian/Pacific Islanders, 5 reported a mixed race, 4 Black, 1 unknown, and 1 not listed.

God is Human Study: Participants were 96 individuals. One participant was removed because of excessive errors on the Implicit Associations Test (IAT) based upon the analysis using the IAT gen software (Carpenter et al., 2019) and one participant was removed because this person did not complete any questions. The final sample consisted of 94 participants (69 females, 24 males, & 1 gender fluid) with a mean age of 24.49 (*SD* = 11.23) years. They completed the study for a $10 Amazon gift card. Participants self-reported race was as follows: 73 White, 6 Asian, 4 reported a mixed race, 4 non-reports, 3 Latina/o/x, 2 Black, 2 Hispanic, and 1 reported Filipino.

Procedure and Materials

God is High Study. Participants completed the same task from Meier et al. (Experiment 2; 2007). In this direct replication, participants categorized God- and Devil-related words (Almighty, Creator, Deity, Lord, Devil, Antichrist, Demon, Lucifer, & Satan) one at a time. The words randomly appeared at the 5% (near the top) or 95% (near the bottom) locations when defining the top of the computer screen at 0% and the bottom at 100%. Each word was shown seven times in each of the two vertical positions in white Times New Roman 22-point font on a

black background, which resulted in 112 total trials or 28 trials in each condition of the 2 (Word Type: God vs. Devil) by 2 (Word Position: High vs. Low) within-participants design.

Each trial commenced with a small white circle presented at screen center for 300 ms. Participants were told to attend to this cue because it would signal the start of a trial. This cue transitioned to a 300-ms blank screen. Then, a randomly chosen word appeared near the top or bottom of the screen. Participants were instructed to press the *Q* key on the keyboard for words related to God and to press the *P* key on the keyboard for words related to the Devil. If participants were correct, a 500-ms blank screen occurred until the next trial. If participants were incorrect, the word INCORRECT was shown in red font for 1.5 s before the 500-ms blank screen between trials. The word remained on the screen until participants pressed a key. Each participant received a different random order of words and locations and was told to categorize each word as quickly and as accurately as possible.

After completing the reaction-time task, participants completed three explicit metaphor questions about God: To what extent do you view or think about God as being up or high (M = 5.47; SD = 1.70), To what extent do you view or think of God as being light or bright (M = 5.40; SD = 1.76), and To what extent do you view or think about God as being human (M = 4.08; SD = 1.95) on a 1 (not at all) to 7 (to a large extent) scale. Participants next completed questions that focused on God beliefs (I believe God exists; M = 6.26; SD = 2.64) and religiosity (I am a religious person; M = 4.78; SD = 2.67) using a 1 (strongly disagree) to 9 (strongly agree) scale. Participants then completed the 30-item Metaphor Usage Measure (Fetterman, Bair, Werth, Landkammer, & Robinson, 2016), which has people choose the extent to which they would use a metaphor or literal statement (e.g., She used her head or She was rational) in 30 items. This measure has been shown to significantly correlate with the frequency of metaphor usage in a

free-writing task and an individual difference measure of preference for mental imagery. The measure was scored in terms of the number of times in which the metaphoric statement was chosen (α = .75; *M* = 12.47*; SD* = 4.86). Finally, participants completed demographic questions (participants also completed other tasks during the session that were for a different study: two trait mindfulness questionnaires and a mindfulness behavioral task). Participants completed the session in a laboratory suite.

God is Bright Study. Participants completed the same task from the God is High Study, but instead of the up versus down manipulation, the words appeared in a black versus white font on a gray background. Additionally, the circle that signaled the start of each trial was blue instead of white. The remaining details were the same. Participants also completed the same questionnaires from the God is High Study: God is up or high (*M* = 4.83; *SD* = 2.04), God is light or bright (*M* = 5.04; *SD* = 2.08), God is human (*M* = 3.60; *SD* = 1.96) , I believe God exists (*M* = 6.32; *SD* = 2.76), I am a religious person (*M* = 4.86; *SD* = 2.92), and the Metaphor Usage Measure (α = .78; *M* = 13.48*; SD* = 5.18).

God is Human Study. We could not use the same type of manipulation in the God is Human study as used in the God is high and bright studies because we could not manipulate the words to be human or not. Therefore, we used the IAT (Greenwald, McGhee, & Schwartz, 1998), which allows one to assess association among concepts in an indirect manner. The IAT requires participants to categorize words from different categories that appear on a computer screen one at a time. We used words from four categories: God (Almighty, Creator, Deity, Lord), Furniture (Sofa, Bookcase, Cabinet, Table), Human (Person, People, Individual, Children), and Not Human (Panther, Poodle, Iguana, Chipmunk). We chose to use a more neutral opposing

category (furniture) for the concept of God because we believed a Devil category would also be related to humanness.

We used IAT gen software (Carpenter et al., 2019), which allowed us to run the study online using Qualtrics. This Qualtrics-based IAT allows for the collection of IAT data without relying upon more cumbersome online reaction-time software. Carpenter et al. (2019) provide extensive evidence for the validity of this IAT by examining its correlations with other established reaction time programs. They report that their Qualtrics-based IAT provides nearly identical results as other more established reaction-time software programs.

The IAT has seven blocks of trials. Participants categorized words appearing on the center of the screen as quickly as possible using the *E* and *I* keys on the keyboard. In Block 1, participants completed 20 trials in which they practiced categorizing words from the Furniture and God categories with these names appearing on the top left or top right of the screen. In Block 2, participants completed 20 trials in which they practiced categorizing words from the Human and Not Human categories with these names appearing on the top left or top right of the screen. In Blocks 3 (practice) and 4 (critical trials), the categories and words were combined in 40 trials each. For example, the words Furniture or Human would appear on the top left of the screen and the words God or Not Human would appear on the top right of the screen. Participants would see each word one at a time and would have to categorize it according to the category endpoints on the screen using the *E* (top left categories) and *I* (top right categories) keys. In Block 5, the category locations from Block 2 (top right or top left) are reversed and in Blocks 6 and 7, the combined categories are opposite (e.g., God or Human & Furniture or Not Human) of Blocks 3 and 4 (e.g., Furniture or Human & God or Not Human). If participants were inaccurate, they were told they were incorrect and that they must press the correct key. There was a 250 ms pause

in between each trial. The IAT gen software (Carpenter et al., 2019) counterbalanced the initial placement of category endpoints (e.g., God on top left or top right & Furniture on top left or top right) as well as the first and second presentation of the combined blocks.

In the IAT, the combined blocks with the faster average categorization times are a sign of associations that exist in memory. For example, we hypothesized that participants would be faster when God and Human/Furniture and Not Human were paired compared to when Furniture and Human/God and Not Human were paired.

After completing the IAT, participants completed the same questionnaires from the other studies: God is up or high (M = 4.80; SD = 2.25), God is light or bright (M = 4.38; SD = 2.09), God is human (M = 3.77; SD = 2.12) , I believe God exists (M = 6.39; SD = 2.81), I am a religious person (M = 5.15; SD = 2.99), and the Metaphor Usage Measure (α = .80; M = 12.78; SD = 5.49).

Results

God is High Study. As in the original study (Meier et al., 2007), we first deleted inaccurate trials (4.35% of trials) in the reaction-time task, log-transformed the response times for correct trials, and then replaced response times faster or slower than 2.5 standard deviations from the grand mean with these log cutoff scores (Robinson, 2007). Analyses were conducted on log-transformed data, but means are reported in raw millisecond (ms) values to facilitate understanding. We performed a 2 (Word Type: God and Devil) by 2 (Word Position: Up and Down) repeated-measures ANOVA. The main effect of Word Type was not significant, $F(1, 100) = .39$, $p = .53$. The main effect of Word Position was significant, $F(1, 100) = 39.56$, $p < .001$, $\eta_p^2 = .28$, 95% CI [.143, .410], such that participants were faster to categorize words on the top (M = 777 ms; SD = 97 ms) versus bottom (M = 810 ms; SD = 112 ms) of the computer

screen. Most importantly, the interaction between Word Type and Word Position was significant, $F(1, 100) = 24.97$, $p < .001$, $\eta_p^2 = .20$, 95% CI [.077, .329].

The means for the interaction are shown in the Table. The pattern of results is like that of Meier et al. (2007). When breaking down the interaction by Word Type, participants were faster to categorize both God-related: $t(100) = 7.99$, $p < .001$, $d = .79$, 95% CI [.570, 1.017], and Devil-related: $t(100) = 2.59$, $p = .011$, $d = .26$, 95% CI [.059, .455], words when they appeared on the top versus the bottom of the computer screen, although the effect was over twice as large for the God-related words. When breaking down the interaction by Word Position, participants were faster to categorize words appearing on top of the screen when they were God-related versus Devil-related: $t(100) = 2.81$, $p = .01$, $d = .28$, 95% CI [.08, .478], but they were faster to categorize words on the bottom of the screen when they were Devil-related versus God-related: $t(100) = 3.93$, $p < .001$, $d = .39$, 95% CI [.188, .593]. Overall, the results coincide with Meier et al. (2007) in revealing that the concept of God is implicitly associated with a high versus low vertical position.

We next examined the individual difference measures by including them as z-scored continuous between-participant factors in separate General Linear Models with Word Type and Word Location as within-participant factors. Some participants did not complete all individual difference measures, so the degrees of freedom vary. None of the three-way interactions involving the individual difference measures were significant: God is high belief: $F(1, 98) = .54$, $p = .46$, $\eta_p^2 = .01$, 95% CI [.00, .07], God is bright belief: $F(1, 99) = 1.38$, $p = .24$, $\eta_p^2 = .01$, 95% CI [.00, .089], God is human belief: $F(1, 99) = 1.32$, $p = .25$, $\eta_p^2 = .01$, 95% CI [.00, .088], belief in God: $F(1, 99) = .01$, $p = .91$, $\eta_p^2 = .00$, 95% CI [.00, .004], religiousness: $F(1, 99) = .01$, $p =$

.95, η_p^2 = .00, 95% CI [.00, .004], and metaphor usage: $F(1, 99) = 1.84$, $p = .18$, η_p^2 = .02, 95% CI [.00, .099].

God is Bright Study. As in the God is High Study, we first deleted inaccurate trials (3.97% of trials) in the reaction-time task, log-transformed the response times for correct trials, and then replaced response times faster or slower than 2.5 standard deviations from the grand mean with these log cutoff scores (Robinson, 2007). Analyses were conducted on log-transformed data, but means are reported in raw ms values. We performed a 2 (Word Type: God and Devil) by 2 (Font Color: White and Black) repeated-measures ANOVA. The main effect of Word Type: $F(1, 98) = 3.40$, p = .07, and the main effect of Font Color: $F(1, 98) = .02$, $p = .88$, were both not significant. Most importantly, the interaction between Word Type and Font Color was significant, $F(1, 98) = 53.21$, $p < .001$, η_p^2 = .35, 95% CI [.205, .474].

The means for the interaction are shown in the Table. When breaking down the interaction by Word Type, participants were faster to categorize God-related words when in a white versus black font: $t(98) = 5.32$, $p < .001$, $d = .53$, 95% CI [.323, .744], but they were faster to categorize Devil-related words when they were in a black versus white font: $t(98) = 5.42$, $p < .001$, $d = .54$, 95% CI [.332, .755]. When breaking down the interaction by Font Color, participants were faster to categorize words appearing in white when they were God-related versus Devil-related: $t(98) = 2.67$, $p = .01$, $d = .27$, 95% CI [.067, .468], but they were faster to categorize words appearing in black when they were Devil-related versus God-related; $t(98) = 5.75$, $p < .001$, $d = .58$, 95% CI [.364, .790]. Overall, the results reveal that concept of God is implicitly associated with bright versus dark shading.

We next examined the individual difference measures by including them as z-scored continuous between-participant factors in separate General Linear Models with Word Type and

Word Location as within-participant factors. Some participants did not complete all individual difference measures, so the degrees of freedom vary. None of the three-way interactions involving the individual difference measures were significant: God is high belief: $F(1,96) = .69$, $p = .41$, $\eta_p^2 = .01$, 95% CI [.00, .074], God is bright belief: $F(1,96) = 1.65$, $p = .20$, $\eta_p^2 = .02$, 95% CI [.00, .097], God is human belief: $F(1,95) = .01$, $p = .92$, $\eta_p^2 = .00$, 95% CI [.00, .004], belief in God: $F(1,96) = .44$, $p = .51$, $\eta_p^2 = .01$, 95% CI [.00, .065], religiousness: $F(1,96) = .35$, $p = .56$, $\eta_p^2 = .00$, 95% CI [.00, .062], and metaphor usage: $F(1,97) = .14$, $p = .71$, $\eta_p^2 = .00$, 95% CI [.00, .049].

God is Human Study. The IAT gen (Carpenter et al., 2019) website includes a scoring applet that cleans and scores the data according to procedures outlined by Greenwald, Nosek, and Banaji (2003). This procedure produces a *D*-score. In the God is Human study, positive *D*-scores (greater than 0) mean that participants were faster when God and Human/Furniture and Not Human were combined rather than the reverse and negative *D*-scores (less than 0) mean that participants were faster when Furniture and Human/God and Not Human were combined rather than the reverse. The average *D*-score in the study was .48 ($SD = .39$), which was significantly different from 0, $t(93) = 11.84$, $p < .001$, $d = 1.20$, 95% CI [.952, 1.487]. This result reveals that participants were faster to categorize words when God and Human/Furniture and Not Human were combined compared to when Furniture and Human/God and Not Human were combined. In other words, participants implicitly associated God with Human.

We next examined the individual difference measures by correlating them with the IAT *D*-score. None of the correlations were significant: God is high belief: $r(92) = .10$, 95% CI [-.105, .297], $p = .32$, God is bright belief: $r(92) = .18$, 95% CI [-.023; .369], $p = .09$, God is human belief: $r(92) = .07$, 95% CI [-.135; .269], $p = .53$, belief in God: $r(92) = .07$, 95% CI [-

.135; .269], p = .49, religiousness: $r(92)$ = .12, 95% CI [-.085; .315], p = .26, and metaphor usage: $r(92)$ = .05, 95% CI [-.154; .250], p = .66.

Discussion

In three studies, God was implicitly associated with a higher versus lower vertical location, a bright versus dark shading, and the concept of human. These results suggest that people may draw upon conceptual metaphoric associations in order to think about the God concept. Yet, individual differences in belief in God, religiousness, and metaphor usage did not moderate the findings. We discuss the potential implications of the results as well as future directions, CMT and God, and individual differences more thoroughly below.

Potential Implications and Future Directions

The results converge with a body of literature that reveals that people implicitly and somewhat automatically make connections between abstract and concrete concepts when engaging in information processing (Landau, 2018; Landau et al., 2010). In short, it appears that certain perceptual experiences may activate religious concepts in memory. These results illustrate some factors that are associated with religious concepts, which can help develop a better understanding of religious thoughts and behaviors that move beyond the more typical study of religiosity (e.g., explicit measures). In other words, religion-related metaphors may allow one to predict how certain factors might affect thoughts and behaviors in unexpected ways. For example, in multiple studies, Persich et al. (in press) found that people who preferred light to dark in a simple forced-choice question had a stronger belief in God (an approximately 1-point difference on a 1 to 6 Belief in God scale). Furthermore, in another study, people who tended to prefer white versus black, day versus night, and lighter versus darker rooms also had a higher belief in God. In a final study, Persich et al. (in press) found that participants rated people in

pictures with white versus black clothing as having a higher belief in God. These results reveal that the metaphorical link between brightness and God appears to have implications for belief in God, perceptual preferences, and religious thoughts about others.

The results of Persich et al. (in press) and other related work (e.g., Fetterman, 2016) represents a novel and informative way to study religiosity. The metaphoric links found in the current studies do not appear to reflect only associations in memory, but may inform us about factors (e.g., brightness) that can influence religious beliefs as well as religious perceptions of others. Future work could examine the concepts of vertical space and humanness to determine if similar beliefs and perceptions are found in religious contexts. Other work might focus on more applied aspects. For example, do people's belief in and connections to God and their churches vary by the amount of concrete metaphors their Priests or Reverends use during sermons? Additionally, would churchgoers donate more money during a service if the concrete domains examined in the current studies were somehow manipulated during money collection (e.g., a white versus black collection plate)? Such ideas are obviously speculative, but they follow from current and past work. In short, the current studies uncovered implicit associations between concrete concepts and the more abstract concept of God, and these associations may allow for the development of a better understanding of the patterns of thoughts and behaviors related to religiosity.

As mentioned in the Introduction section, we focused on a Christian-centric version of God. Yet, it would be useful to consider other cultural views of God and religion more generally. We cannot know for sure if less Christian populations have implicit conceptual associations between high, bright, and human and God in a manner found in the current studies. Future work will be necessary to examine these ideas. However, metaphors are used in varying

cultures/religions to help structure religious beliefs whether these beliefs are deity based or not (e.g., Tracy, 1978). As mentioned earlier, metaphors are thought to be most useful when considering less concrete concepts (Landau, 2018) and religious beliefs are not necessarily concrete in the strictest sense. Therefore, we would predict that religious metaphoric representations measured in an implicit sense are likely to be found in non-Christian populations (e.g., Islam or Buddhism). Kövecses (2012) has argued that there are universal metaphors as well as metaphors that vary by culture to explain the same concept, and it is therefore likely that some of the same concrete domains examined here (e.g., vertical space) might be similar to those in other cultures.

It could also be the case that varying views of a Christian God could change metaphoric representations. Johnson et al. (2013) has found that people can view God as more benevolent or more authoritarian, and it might be that metaphorical views of God vary as a result of these representations. For example, it might be that people who view God as more benevolent use or think of God in metaphors related to benevolence (e.g., God is light). People who view God as more authoritarian might use or think of God in metaphors related to authoritarianism (e.g., God is power). Again, additional work will be necessary to examine these ideas.

CMT and God

It makes sense that metaphors are used when people talk about God as God is not necessarily a physical thing for everyone. The present studies are clear in showing that at least some God-related metaphors are conceptual in nature. The physical concepts involved in metaphors influenced participants' categorization times even though the physical concepts were not central to the task at hand, which was to categorize words. In other words, in the God is high and bright studies, word vertical location and font color were not needed to make correct

categorizations, but participants did not ignore these physical manipulations. Both high vertical positions and brightness are associated with positivity (Meier & Robinson, 2005), and it appears that these perceptual domains are used to help people understand that God is positive (see the Limitations section for additional discussion of this idea) as well as other possibly related things (e.g., God watches over us, God lights our path, etc.).

The God is human study was different from the God is high and bright studies in that a direct manipulation of God-related words to be human or not human could not be carried out as it was with high/low and bright/dark. Therefore, one cannot state with certainty that the God is human metaphor reflects a more embodied or physical link between the understanding of God and actual physical humanness (see Fincher-Kiefer, 2019, for a broader discussion of this physical or embodied connection). It would be difficult to determine if the God is human category of metaphors are embodied as a manipulation of actual humanness would be challenging to carry out, as would other similar metaphor-related manipulations (e.g., God is Power). We used the traditional IAT to assess these associations. However, future researchers might use a different task as there is controversy surrounding the IAT in terms of what exactly it is measuring and whether it taps the same thing as the paradigms used here to examine God is high and God is bright (Jost, 2019; Zarzeczna, Von Hecker, Proulix, & Haddock, in press).

Individual Differences

Individual differences in belief in God, religiousness, and metaphor usage, either in general or specific (God is high, bright, or human) terms, did not moderate the categorization times in the present studies. These null effects pose a bit of a quandary, as it has been shown that individual differences in metaphor usage and traits involved in specific metaphors (e.g., whether someone is more or less dominant & the power is up metaphor) moderate associations related to

the metaphor (Fetterman, 2016; Fetterman, Bair, Werth, Landkammer, & Robinson, 2016; Fetterman, Wilkowski, & Robinson, 2018; Moeller, Robinson, & Zabelina, 2008). For example, Moeller et al. (2008) found that people higher versus lower in the trait of dominance were better at a letter-discrimination task presented in a vertical plane. This finding suggests that more versus less dominant people are better experienced in completing tasks in a high to low vertical location (dominance is up). Another example involves metaphors that pair physical warmth with interpersonal warmth such that a warm person is a nice person. Fetterman et al. (2018) found that daily feelings of actual physical warmth were related to daily feelings of agreeableness or the extent to which people were friendly, kind, and helpful to others.

The examples presented here (and the Persich et al., in press, work presented earlier) suggest that there are some individual differences in the manner in which conceptual metaphors are involved in thoughts and behaviors. It is clear though that individual differences in metaphor usage, religiousness, or belief in God did not moderate concept processing speed in the current categorization tasks. The examples presented above did not involve tasks that required the categorization of abstract stimuli as they vary along a physical dimension (e.g., God-related words appearing high or low in space). They were all explicit. It might be that categorization tasks of the type employed in the current studies assess relations involved in conceptual associations that most people hold, regardless of their specific beliefs, metaphor use, or cultural norms. If true, this idea might suggest that conceptual metaphors for God are apparent in implicit reaction-time tasks in people in general, but might be more specific to certain people (e.g., those with a stronger belief in God) when examining behavior directly related to the metaphor of interest.

A final consideration is that conceptual metaphoric mappings are the result of the mental scaffolding of abstract concepts on to concrete experiences, often learned in early experiences (Williams, Huang, & Bargh, 2009). However, the presence of such mappings does not necessarily mean that an explicit metaphor is present or endorsed (Kövecses, 2010). While we may report our agreement or disagreement with a specific metaphoric phrase, the implicit conceptual mappings might be more revealing in regards to our basic unrestrained processing of these concepts (Fazio & Olson, 2003). In fact, explicit measures of individual differences in metaphor use may be measuring a separate online (vs. automatic) type of processing, which is more influenced by outside factors, like religious teachings (Sharp et al., in press), though we can only speculate. Even so, implicit associations are particularly important to study, as they can influence behavior and bias attitudes in an uncontrolled manner (Olson & Fazio, 2009) and have been shown to explain behavior above and beyond explicit measures (Buttrick, Axt, Ebersole, & Huband, 2020; Perugini, Richetin, & Zogmaister, 2010). Overall, our findings should inspire future work into the differences between implicit metaphoric associations and explicit metaphor endorsement, and potential additive effects.

Limitations

Our research does have potential limitations. One possible limitation is that the concepts of vertical space, brightness, and humanness are associated with God in the current tasks because of valence or power. That is, high, bright, and human are concepts with a positive meaning and to some extent a powerful meaning as well. Yet, God is both positive and powerful too. Therefore, one criticism of the current work is that high, bright, and human are implicitly associated with God because of valence or power, not metaphor. Yet, valence and power are not necessarily alternative explanations given that high, bright, and human are used in metaphors for

God. The current studies confirmed these metaphoric links using implicit tasks that focused on concept processing rather than language use. People may use terms related to high, bright, and human in discussing God for evaluative, power-related, and/or other representational purposes and teasing these possibilities apart was not a goal of the current studies.

The manner in which people associate God with high, bright, and human might be related to valence and/or power or it might be independent of such links. In the God is human study, the contrasting category to God was furniture and these two words were found to have similar valence and dominance (power) ratings in a large norming study involving 13,915 English words and 1,827 participants. In this study, raters were asked to rate the words in terms of how they felt when reading words in terms of valence (1 = unhappy to 9 = happy), dominance (1 = controlled to 9 = in control), and arousal (1 = calm to 9 = excited; Warriner, Kuperman, Brysbaert, 2013). The God valence rating mean was 5.90 and the furniture valence rating mean was 5.79. The God dominance rating mean was 5.00 and the furniture dominance rating mean was 5.43 Yet, the effect found in the God is human study was large, which suggests that the association is not necessarily or only based upon valence or power. Future research should further examine the impact of valence, power, and other related concepts in the up and bright domains by using contrasting categories that are as positive/powerful as God rather than a negatively valenced contrasting category like the Devil.

Another possible limitation relates to statistical power. Although we did use power analyses for all studies, we did not consider these analyses with moderation by the individual difference variables. This absence was an oversight. It is fair to state that the current studies are underpowered when considering moderation by the individual differences if one considers using a very conservative estimate of a small effect size. For example, in the God is human study,

approximately 783 participants would be needed to find a significant small correlation ($r = .10$, $p < .05$) between the IAT effect and the individual difference measures (Aron, Coups, & Aron, 2013). Additional research will be necessary to examine this possibility although samples of 783 might be undoable.

Conclusion

In three studies involving implicit reaction-time tasks, participants were faster to categorize God-related words compared to control words when the words were paired with human words or appeared in a high versus low location or in a bright versus dark font. However, individual differences in belief in God, religiousness, and metaphor usage did not moderate the findings. The results reveal that people think about God in metaphoric terms. Future work will need to further examine individual differences as well as the potential impact of culture and other related variables.

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Table

Means and Standard Deviations (in ms) for God is High and God is Light Studies

Study	Condition	Mean	Standard Deviation
God is High	God/Up	771	97
	God/Down	819	117
	Devil/Up	782	103
	Devil/Down	800	113
God is Light	God/White	623	92
	God/Black	642	91
	Devil/White	635	94
	Devil/Black	615	92