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# On God-Belief and Feeling Clean: Daily Experiences are Related to Feeling Clean, Particularly for those High in God-Belief

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Due to an Institutional Review Board requirement, data for the current investigation can only be made available via email request. All requests will be honored.

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**Abstract**

Recent work has shown robust associations between morality and cleanliness. However, it is not known whether this association is equally consequential for everyone. I predicted that individuals high (versus low) in god-belief would be more likely to draw upon feelings of cleanliness to represent their moral concerns. To test this hypothesis, I used a two week daily sampling protocol. In an initial session, I measured participants' ($N$ = 135) level of god-belief. I then measured participants' levels of daily cleanliness, neuroticism, impulsivity, and prosocial behaviors every evening. Daily feelings of cleanliness predicted lower levels of neuroticism, but only for those high in god-belief. Daily impulsive behaviors predicted lower feelings of cleanliness and daily prosocial behaviors predicted higher feelings of cleanliness. God-belief moderated these effects such that they were stronger for those higher, than lower, in god-belief. In closing, I discuss potential reasons for these moderation effects and other theoretical considerations.

Keywords: Religiosity; Cleanliness; Individual Differences; Prosocial Behavior; Neuroticism; Impulsivity; Daily Sampling

# On God-Belief and Feeling Clean: Daily Experiences are Related to Feeling Clean, Particularly for those High in God-Belief

The connection between religiosity and cleanliness is deeply rooted (Preston & Ritter, 2012). According to Leviticus, what is clean is good. Indeed, the bible is filled with scenes of cleansing as a means to achieve spiritual purity. Nearly all religions, Abrahamic and not, have cleaning rituals built into them. Recent theories of morality have suggested that this connection between cleanliness and purity, or morality, stems from an intuitive way of making moral judgments (Haidt, 2001). Following such theoretical frameworks, recent research in embodiment and metaphor has shown numerous examples of how this conceptual mapping can influence human thought and behavior (Zhong & House, 2014). However, given the pervasiveness of the "morality as cleanliness" metaphor within religion, it seemed likely that religious individuals would be particularly susceptible to such influences. The current study investigated this possibility by looking at daily feelings and behaviors and how they relate to feelings of cleanliness in those who believe in a god to a lesser versus greater extent.

## Cleanliness and Morality

The connection between cleanliness and morality has received a lot of attention in social psychology (see Zhong & House, 2014, for review). It has been suggested that the close connection between these concepts is due to the scaffolding of moral disgust on physical disgust throughout our evolutionary past (Rozin, Haidt, & McCauley, 2001). That is, moral disgust is often thought of in terms of physical disgust because its core emotional basis is related to protecting oneself from contamination. Indeed, this conceptual mapping is reflected in the metaphors that people use to express discomfort with what they deem as moral ambiguity or immoral behavior (Lakoff & Johnson, 1999). For example, some individuals consider homosexuality a sin and use phrases like "it makes me sick!" and terms

such as “gross” to describe LGBT people and their preferences. These metaphors might not be mere figures of speech (Gibbs, 1994), but may actually represent how individuals think about the qualia of moral concerns (Lakoff & Johnson, 1999). In fact, evidence has suggested that our brains process moral and physical disgust in the same manner (Moll et al., 2002). This connection appears to be the result of the intuitive, automatic processing of moral emotions that has roots in our evolutionary past (Schnall, 2011).

Based on this theorizing, numerous studies have shown that this conceptual mapping impacts how individuals process moral information and make moral judgements. For example, Lee and Schwartz (2010) demonstrated that when participants were made to perform an immoral task (i.e., lying) they desired to clean the part of their body associated with the act (i.e., the mouth or hands). Zhong and Liljenquist (2006) showed that a threat to moral purity led to a desire for cleaning products and activated concepts related to cleansing. They even showed that the act of cleaning oneself (i.e., washing one’s hands) led to a reduction in the desire to compensate for their immoral behaviors (e.g., by being more prosocial). In addition, Schnall, Benton, and Harvey (2008) found that cleansing behaviors led to less harsh moral judgements. These studies, and numerous others, have thoroughly demonstrated that thoughts of cleanliness and cleaning behaviors can impact how people process moral concerns (Zhong & House, 2014).

The studies on the cleanliness-morality topic, thus far, have mostly focused on main effects. That is, we know little about what boundary conditions exist for these effects or whether these effects hold true for all individuals (for an exception, see Schnall, Haidt, Clore, & Jordan, 2008). The same is true for other metaphor and embodiment effects. In fact, Meier, Schnall, Schwarz, and Bargh (2012) called for further investigations into individual differences in such effects.

Recent work has begun answering this call. In one case, Slepian (2015) found that metaphor effects did not occur in those who were not familiar with a specific metaphoric mapping (e.g., "hard republican"). In relation to the current investigation, Lee, Tang, Wan, Mai, and Liu (2015) found that face-cleansing, but not hand-cleansing, led to guilt reduction in cultures that emphasize the face. Additionally, those who place a particular importance on "feeling clean" show stronger implicit associations between concepts of cleanliness and color (Sherman & Clore, 2009). These findings suggest that one's values, their familiarity with a metaphor, their cultural background, and the importance they place on a metaphorically represented concept, can impact the nature of a metaphor effect.

If familiarity, culture, and concept importance play a role in metaphor-like effects, then religiosity should impact effects related to morality and cleanliness. That is, it stands to reason that those who believe in a god to a greater extent are more susceptible to effects that rely on the morality-cleanliness mapping, due to the importance of morality and cleanliness in religious doctrine.

**God-belief and the Importance of Cleanliness**

As noted above, cleanliness is an important factor in many religious institutions. The representation of morality as cleanliness is reinforced through ritual and scripture. Following this observation, research has shown that there is a strong mapping between religious and cleanliness concepts. For example, Preston and Ritter (2012) found that priming religiosity led to a greater activation of cleanliness concepts and increased participants' desire for cleaning products. They also showed this in the opposite direction. When participants were primed with cleanliness, they indicated valuing religious belief to a greater extent. The authors directly tie this connection to the emphasis on moral concerns in religion. However, they did not directly demonstrate such considerations in their studies. If cleanliness is of central importance to the godly, compared to the less godly, and it is tied to the cleanliness-

morality link, then the godly should be more likely to represent their moral concerns as feelings of cleanliness. These feelings of cleanliness, then, should be related to thoughts and behaviors related to morality. This was the central hypothesis of the current study.

## Current Study

I was interested in whether god-belief moderates the effects that rely on the coopting of cleanliness and morality. To do so, I used a daily sampling protocol. Previous studies have shown that manipulating feelings of (un)cleanliness (e.g., through washing) can impact moral behavior and judgements, and vice versa (Zhong & House, 2014). As such, I investigated how daily feelings of cleanliness – as a representation of morality – relate to daily feelings that might result from moral concern (e.g., anxiety). If one "feels unclean" they may also feel negatively. I also looked at how different daily (im)moral behaviors relate to daily feelings of cleanliness – as a representation of morality. That is, if one feels that they have behaved morally, they will feel cleaner.

I focused on the constructs of neuroticism, impulsivity, and prosocial behaviors, as predictors and outcomes of moral concerns. The design of this study is inherently correlational in nature and directionality cannot be inferred. However, I approached the predictor-outcome relations in different directions based on previous research and theorizing.

First, I investigated how feelings of (un)cleanliness – as a representation of morality – impact downstream experiences or feelings (i.e., cleanliness as a predictor). When a person feels that they have committed a moral violation they feel more guilt and anxiety (Eisenberg, 2000). As such, I focused on daily feelings of neuroticism. Neuroticism is a personality trait marked by feelings of guilt and general anxiety (Matthews & Deary, 1998; McCrae & Costa, 1999; Muris, Roelofs, Rassin, Franken, & Mayer, 2005). While it is a trait, daily experiences of neuroticism can fluctuate depending on various situational factors (Suls & Martin, 2005). It seemed reasonable, then, that these feelings would be predicted by fluctuating feelings of

cleanliness. Specifically, religious individuals who feel less clean – an implicit indicator of immorality – should feel more anxiety or guilty. I predicted a god-belief by daily felt cleanliness interaction effect on daily self-rated neuroticism.

Second, I investigated feelings of cleanliness as the outcome. Previous work (e.g., Lee & Schwartz, 2010; Zhong & Liljenquist, 2006) has shown that priming immorality can lead to feelings of uncleanliness. Indeed, cleaning rituals are used to relieve moral concerns in religious ceremony. Self-control and discipline are of great importance to the religious (McCullough & Willoughby, 2009) and impulsive behavior is seen as immoral (Geyer & Baumeister, 2005; Baumeister & Exline, 2000). Therefore, I investigated whether daily reported impulsive behaviors predicted daily feelings of cleanliness. If giving into one's impulses is seen as a sin, or immoral, for god-believers, then on days in which they act impulsively they should also feel less clean. As such, I predicted a god-belief by daily impulsivity interaction effect on daily feelings of cleanliness.

Third, for similar reasons, feelings of cleanliness served as the outcome in the last model. Here, I investigated whether acting in a prosocial manner predicts feelings of cleanliness. Prosociality is built into the tenants of most religions. In fact, some feel that religion is the source of morality, which leads to prosocial behavior (Preston, Ritter, & Hernandez, 2010). Indeed, religious people believe themselves to be prosocial (Batson, Schoenrade, & Ventis, 1993), most likely because this is seen as important to their god (Shariff & Norenzayan, 2007). Further, research has shown that thinking about one's own immorality can lead individuals to perform more prosocial (i.e., moral) behaviors (Jordan, Mullen, & Murnighan, 2011; Sachdeva, Iliev, & Medin, 2009). Following this compensatory framework, on days in which someone performs more prosocial behaviors, they should feel cleaner. This is indeed what I predicted, but I also predicted an interaction such that this would be particularly true for those high in god-belief.

The intuitive nature of these directional paths aids in the interpretation of the relations between the variables. However, the design of the study is correlational and such directional paths could be reversed. Additional considerations for the flipping between cleanliness feelings as a predictor versus an outcome are in the discussion.

## Methods

### Participants and Overview

A total of 145 participants from a mid-sized mid-west university in the U.S. signed up for a daily study. They were informed that this was a daily study lasting two-weeks. Participants attended an initial lab session in which a number of unrelated studies were conducted, and a battery of personality measures[1] were given that included the god-belief question. Participants provided informed consent, email addresses, and were given instructions for the coming weeks. In all, 135 participants (67 Female) provided usable data. The sample size was determined by the collecting lab's policy to recruit as many participants as possible within 1 week. As such, power analyses were not conducted prior to data collection. However, given the within-subjects design of the study, the power appears to be adequate.

### God-belief

Participants responded to a single item about their god-belief. The item was simply worded "To what extent do you believe in a god?" Participants responded by clicking the box that matched their opinion (1 = "not at all" through 6 = "fully and completely"). This face-valid, single-item measure has been successfully used in the past (e.g., Perisch, Steinemann, Fetterman, & Robinson, 2015; van Elk, Rutjens, Pligt, & Harreveld, 2014). Scores were fairly high on this measure ($M$ = 4.73, $SD$ = 1.54), which was not unsuspected. As to be expected

[1] None of the studies were relevant to the current investigation, nor were the other personality measures.

with any god-belief question, there was some negative skew (-1.16). However, scores were sufficient in range to address the central question.

**Daily Diary Procedures and Measures**

The lab portion of this study took place during 1 week and concluded on a Friday. The next Monday, the daily portion began. Each evening, for the 14 days following that Monday, participants received emails with their participant number and a link to the SurveyMonkey survey for that day. Emails were sent at 5 p.m. each day when the survey opened. The participants had until 3 a.m. the next morning to complete that day's survey. As is typical of this lab, participants who missed more than 5 surveys were dropped from the protocol. Ten participants were dropped for not meeting this *a priori* benchmark. The remaining 135 participants had an 88% response rate.

In each model, I wanted to test daily feelings of cleanliness. As such, participants simply responded on a 4-point scale (1 = "very dirty" to 4 = "very clean) to the question, "How clean do you feel today?" In general, participants felt relatively clean ($M$ = 3.27, $SD$ = .45). I also wanted to measure how daily feelings of cleanliness predicted feelings about the self; particularly, whether lower cleanliness impacts ones anxiety and negative feelings. In order to do so, participants responded to a single question intending to measure their daily levels of neuroticism[2]. Participants rated their level of agreement on a 5-point scale (1 = "very inaccurate" to 5 = "very accurate") to the statement, "Today, I was neurotic". Overall scores were around the mid-point ($M$ = 2.04, $SD$ = .81).

Behavioral impulsivity (e.g., giving into one's urges) is seen as immoral from a religious standpoint due to self-control's centrality in virtuous behavior (Geyer & Baumeister, 2005; Baumeister & Exline, 2000). As such, participants responded to 3

[2] To avoid drop-outs the lab group created shortened or single-item face-valid measures of key variables. This reduced participants' time commitment to 5-minutes and provided economical means to answer numerous research questions. A trait neuroticism score was collected in the initial lab session via validated measure (Goldberg, 1999). Trait neuroticism predicted daily scores on the single-item measure, $b$ = .17, $t$ = 2.45, $p$ = .017, speaking to its validity.

questions, modeled after popular impulsivity scales (e.g., Eysenck & Eysenck, 1977; Patton, Stanford, & Barrett, 1995). On a 5-point scale (0= "never" to 4 = "very often"), participants rated how often they "gave into an urge", "made a rash decision", and "did something without thinking". These items were averaged and scores were found to be relatively reliable (Alpha = .77). Participants generally reported being low on impulsivity ($M$ = .71, $SD$ = .45).

Finally, I was interested in how virtuous (i.e., moral) behaviors might predict daily feelings of cleanliness. One way in which people perform moral behavior is by acting prosocially. On a 5-point scale (0 = "never" to 4 = "very often"), participants rated how often they "helped someone", "did someone a favor", and "expressed gratitude to someone". These items were averaged and scores were reliable (Alpha = .80). Participants reported a moderate amount prosocial behaviors ($M$ = 1.37, $SD$ = .50). It should also be noted that the "cleanliness" item was one of the last items on the daily survey, so it likely did not impact the other scores.

## Results

I followed standard multi-level linear modeling (MLM) procedures. These procedures are particularly well-suited to analyze this type of daily data (Christensen, Barrett, Bliss-Moreau, Lebo, & Kaschub, 2003; Nezlek, 2001). Specifically, I followed Singer's (1988) recommendations for using SAS PROC MIXED. I person-centered the cleanliness responses (model 1), impulsivity scores (model 2), and the prosocial behaviors scores (model 3), or "level 1" variables, such that each participant's mean across all days was 0 with a standard deviation of 1 (Enders & Tofighi, 2004). These represented the within-person, or day-to-day, predictors. I also z-scored the god-belief item, the "level 2" predictor, as recommended by Aiken and West (1991) when testing interactions with continuous between-person predictors.

In model 1, I examined daily variations in neuroticism as a function of daily feelings of cleanliness, god-belief, and a cross-level interaction of both of these predictor variables. In

model 2, I examined daily variations in feelings of cleanliness as a function of daily impulsivity, god-belief, and a cross-level interaction of these predictor variables. Finally, in model 3, I examined daily variations in feelings of cleanliness as a function of prosocial behaviors, god-belief, and a cross-level interaction of these predictor variables. Fixed effects are reported below[3].

For model 1, there was no a main effect for feelings of cleanliness, $b$ = -.03, $t$ = 1.49, $p$ = .14. Therefore, feeling clean did not make participants feel less neurotic. Additionally, God-belief did not predict daily neuroticism, $b$ = -.04, $t$ = -.59, $p$ = .55. However, there was a significant cross-level interaction, $b$ = -.05, $t$ = -2.53, $p$ = .01, 95% CI [-.092, -.012]. To investigate the nature of this interaction, I calculated estimated means at +.5 *SD* and -.5 *SD* levels[4] of the predictor dimensions (Aiken & West, 1991). Estimated means are displayed in Figure 1. As it appears, for those high in god-belief – but not low –, daily feelings of cleanliness have a negative relation to daily neuroticism. I performed simple slopes tests (Bauer, Preacher, & Gill, 2006) to confirm this interpretation. Specifically, participants high in god-belief (+.5 *SD*) reported higher levels of neuroticism on days in which they felt less clean, $b$ = -.06, $t$ = -2.50, $p$ = .014 95% CI [-.099, -.012]. There was no effect for those low in god-belief, $b$ = .00, $t$ = -.16, $p$ = .87.

[3] A bivariate correlation would not be the proper way to evaluate simple relations between the variables. It would require averaging across days and eliminating informative variance. As such, I ran separate MLMs to test for simple relations between each variable. The relations reported as main effects did not significantly differ. For those not reported, god-belief was significantly related to daily impulsivity ($b$ = .10, $p$ = .005) and prosocial behavior ($b$ = .13, $p$ = .003). Daily neuroticism was significantly related to daily impulsivity ($b$ = .06, $p$ = .001) and prosocial behaviour ($b$ = -.06, $p$ = .001). Daily impulsivity was significantly related to daily prosocial behaviour ($b$ = .03, $p$ = .04).

[4] I used .5 *SD* to calculate estimated means due to the fact that +1 *SD* on god-belief was outside of the range of the scale.

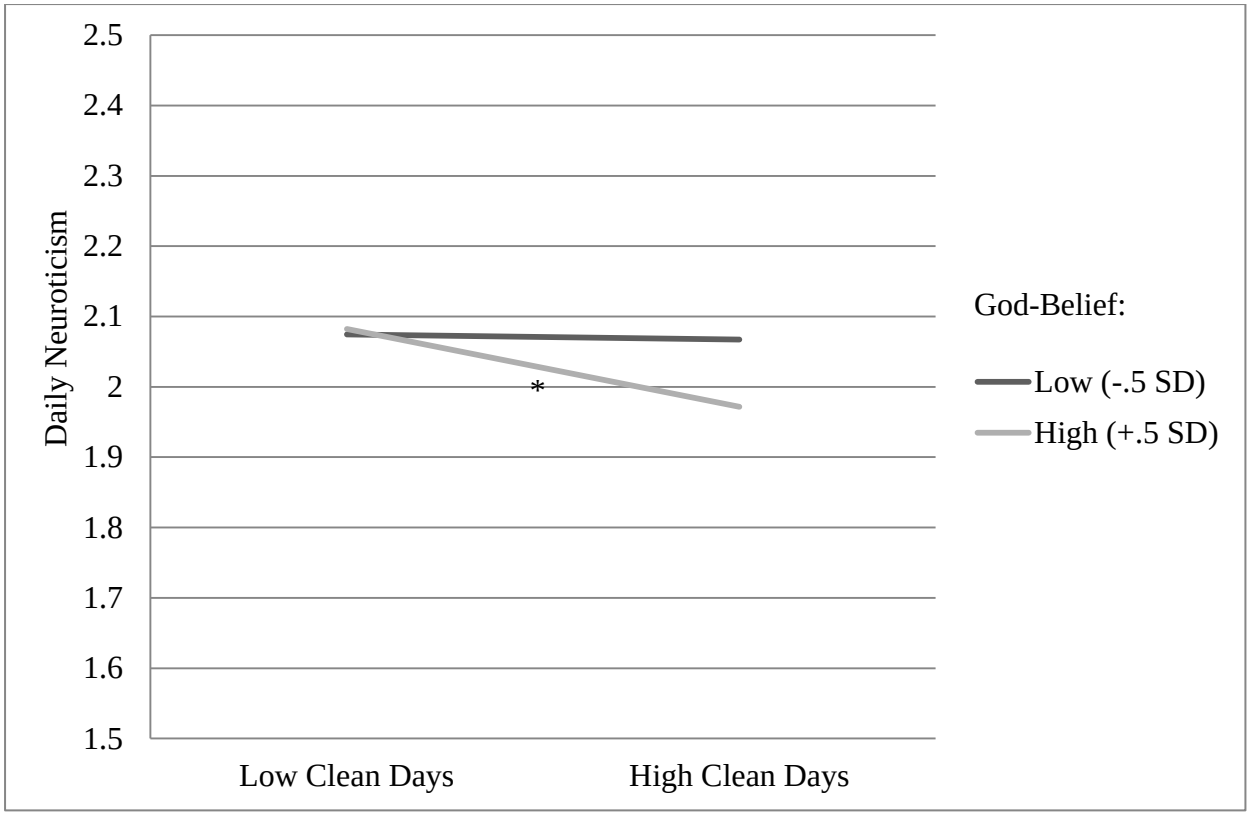


Figure 1: Cross-level God-Belief x Daily Cleanliness Interaction Effect on Daily Neuroticism

Model 2 investigated the relationship between daily impulsivity and daily cleanliness feelings for those high versus low in god-belief. There was a significant main effect for impulsivity, $b$ = -.06, $t$ = -3.14, $p$ = .002, 95% CI [-.100, -.023], such that having a particularly impulsive day was associated with participants feeling less clean. God-belief did not predict daily feelings of cleanliness, $b$ = .04, $t$ = .61, $p$ = .54. However, there was a significant cross-level interaction, $b$ = -.05, $t$ = -2.53, $p$ = .01 95% CI [-.090, -.011]. I calculated estimated means, as above (Aiken & West, 1991), and these are displayed in Figure 2. As can be seen, impulsive behaviors appeared to be negatively related with feelings of cleanliness, but only for those high in god-belief. Simple slopes analyses (Bauer et al., 2006) confirm this interpretation. Participants high in god-belief (+.5 *SD*) reported feeling

less clean on days in which they behaved impulsively, $b$ = -.09, $t$ = -3.96, $p$ < .001 95% CI [-.262, -.082]. There was no effect for those low in god-belief, $b$ = -.04, $t$ = -1.64, $p$ = .10[5].

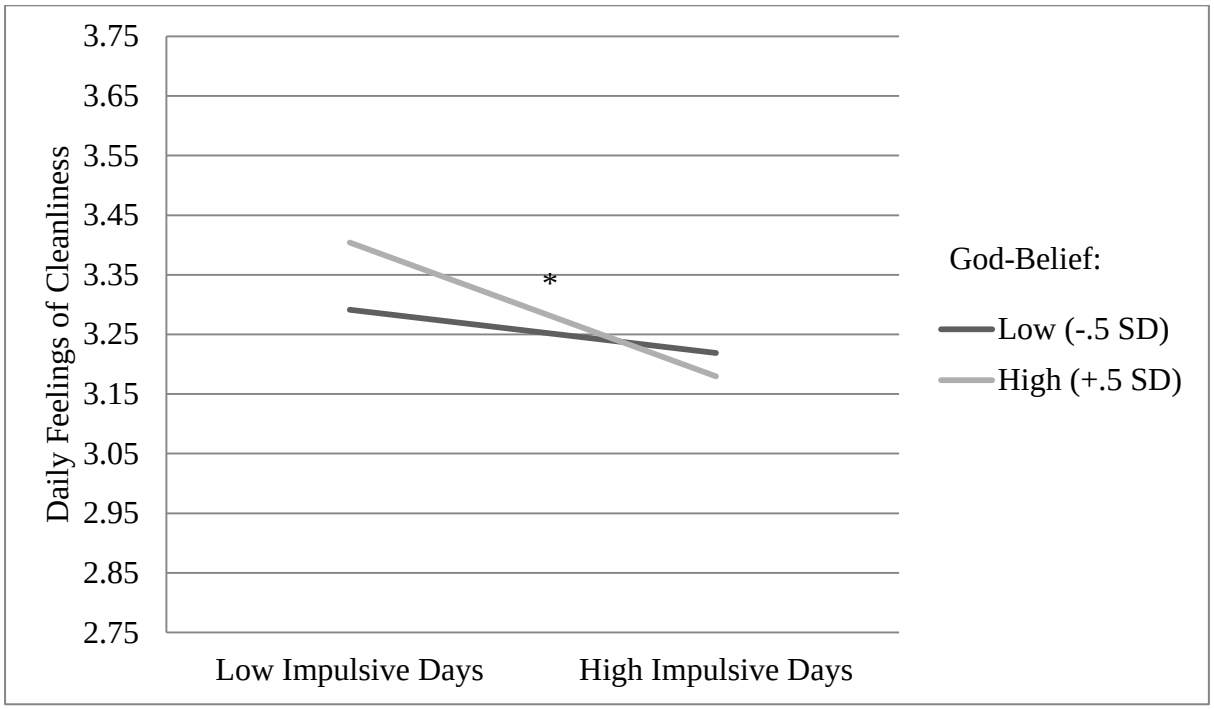


Figure 2: Cross-level God-Belief x Daily Impulsivity Interaction Effect on Daily Feelings of Cleanliness

The final model investigated the relationship between daily prosocial behaviors and daily cleanliness feelings for those high versus low in god-belief. There was a significant main effect for prosocial behavior, $b$ = .05, $t$ = 2.69, $p$ = .007 95% CI [.014, .090], such that behaving in a virtuous or prosocial manner was associated with feeling more clean. There was no main effect of god-belief, $b$ = .01, $t$ = .35, $p$ = .73. However, the cross-level interaction was significant, $b$ = .05, $t$ = 2.48, $p$ = .01, 95% CI [.010, .088]. I calculated estimated means (Aiken & West, 1991) and these are displayed in Figure 3. As can be seen, prosocial behaviors appears to be positively related with feelings of cleanliness, but only for those high in god-belief. Simple slopes analyses (Bauer et al., 2006) confirm this

[5] It should be noted that I ran an identical model with daily self-control as the level-1 variable and nearly identical effects were found, though in the opposite direction, as would be expected. These results were not reported here due to redundancy.

interpretation. Participants high in god-belief (+.5 *SD*) reported feeling more clean on days in which they behaved prosocially, $b = .076$, $t = 3.52$, $p < .001$, 95% CI [.033, .119]. There was no effect for those low in god-belief, $b = .028$, $t = 1.27$, $p = .21$.

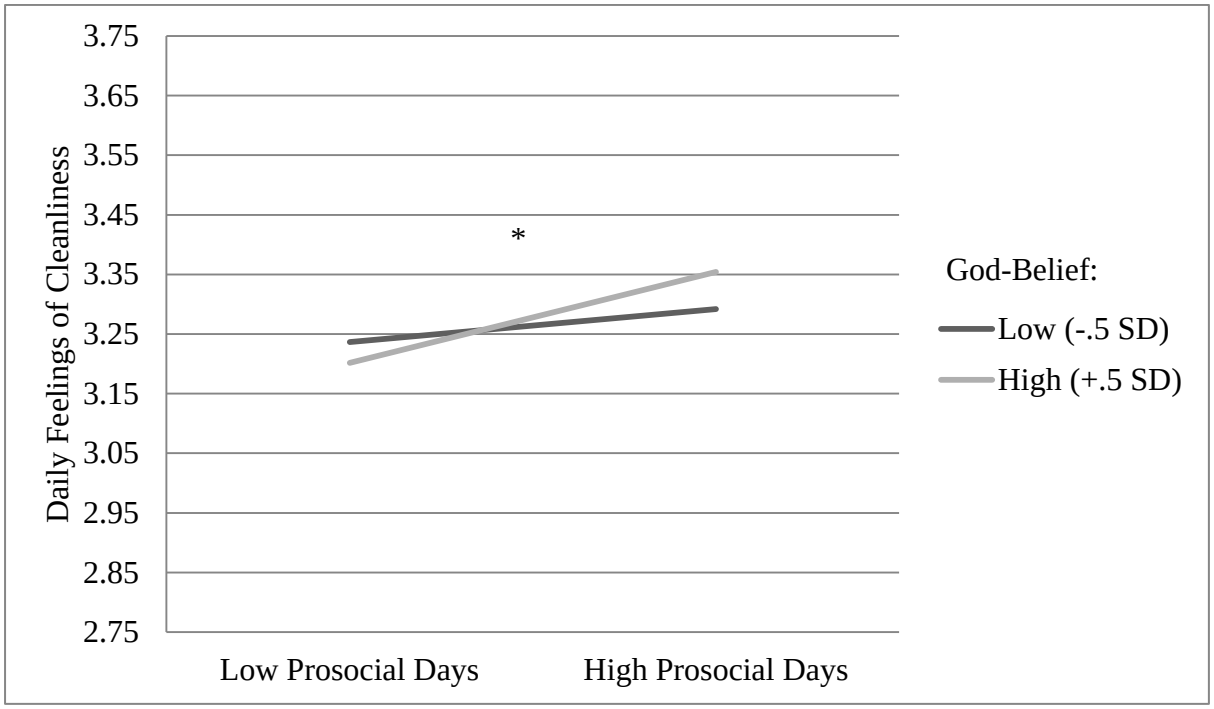


Figure 3: Cross-level God-Belief x Daily Prosocial Behavior Interaction Effect on Daily Feelings of Cleanliness

## Discussion

Much has been said about the connection between cleanliness and godliness. It is likely that this connection boils down to a conceptual association between cleanliness and morality (Preston & Ritter, 2012), which itself stems from the scaffolding of moral disgust on physical disgust (Rozin et al., 2001). Recent work has shown that people, indeed, do represent moral concerns in terms of cleanliness (Zhong & House, 2014) and that there is a conceptual association between cleanliness and religiosity (Preston & Ritter, 2012). The goal of the current research was to further investigate these effects and combine them. To do so, I used a daily diary sampling protocol. In line with predictions, on days in which participants felt more clean, they reported feeling less neurotic (i.e., anxious), but this was only the case

for those high in god-belief. In fact, there was no main effect of daily feelings of cleanliness on daily neuroticism, suggesting that this effect may only be found when considering god-belief. Second, on days in which participants reported behaving less impulsive and reported more prosocial behaviors, they felt cleaner. This was the case for those high in god-belief, but not those low in god-belief. The main effects for impulsivity and prosocial behaviors were significant in both models, thus conceptually replicating previous findings. These results, then, converge with previous findings and add to them by showing that the connection between (un)cleanliness and various (non-)virtuous feelings and behaviors is moderated by god-belief.

**God-Belief and Feelings of Cleanliness**

There are a couple of reasons why morality and feelings of cleanliness may be particularly coopted by those high in god-belief. First, religions are prone to use cleanliness-as-morality metaphors quite prolifically. Highly religious people may have grown up in an environment that indoctrinates the conceptual association of cleanliness and morality, through scripture, song, and rituals. As a result, this mapping may be particularly strong for religious individuals due to a type of conditioning or scaffolding (Williams, Huang, & Bargh, 2009), which then leads to stronger effects. Evidence for this assumption would show that god-believers show stronger metaphoric effects, but not embodiment effects, of this type. The current research does not provide evidence for this because I did not compare metaphoric and embodied effects. That is, it could be that individuals were representing their feelings of morality through the cleanliness metaphor rather than *actually* feeling less/more clean. In fact, recent work by Ritter, Preston, Salomon, and Relihan-Johnson (in press) suggests that this might be the case. Another way to test this might be to see whether religious individuals rely more on this metaphor when feeling uncertain (e.g., see Keefer, Landau, Sullivan, & Rothschild, 2011) or whether religious individuals use metaphors more often as way to

understand their experiences (e.g., Fetterman, Bair, Werth, Landkammer, & Robinson, in press). Future research should examine this possibility.

The second reason may be that religious individuals rely more on intuitive rather than rational thinking styles. In the dual processing framework (see Epstein, 2003 for review), some individuals prefer a more intuitive, automatic processing style (i.e., one based on their "feelings"). Others prefer a more controlled, deliberate processing style. Research suggests that religious individuals tend to have the former processing style (Shenhav, Rand, & Greene, 2011). In fact, some have suggested that religious belief is an automatic or default part of our cognitive make-up (Bering, 2011; Atran & Norenzayan, 2004) and that we can only overcome these beliefs through deliberate thought (Gervais & Norenzayan, 2012; Norenzayan & Gervais, 2013). If so, it may be that those high in god-belief rely more on their "feelings" and bodily experiences, which will lead them to rely more on feelings of cleanliness as an indicator of morality. Indeed, recent work has shown that sensitivity to bodily experiences can moderate embodiment effects (Häfner, 2013). If religious individuals fall into this bodily-sensitive category, it may also explain why so many religions developed the use of cleanliness images in their doctrines and rituals. This is, of course, speculative, but future research should consider these ideas when discerning the actual processes involved in morality/cleanliness effects. One might also wonder whether non-religious individuals have a different way of thinking about morality.

**Additional Considerations**

The current study was correlational in nature. As such, the actual paths I investigated are open to alternative directional interpretations. In fact, many embodied and metaphoric effects can work bidirectionally (Lee & Schwarz, 2012). However, the reasoning behind my directional decisions was based on previous research and theorizing. First, as I noted, it seemed more reasonable that feelings of cleanliness would have an effect on neuroticism,

than vice versa. Feelings of anxiety, guilt, and worry (the hallmarks of neuroticism) are necessarily the result of, or response to, some action or environmental factor (Suls & Martin, 2005), including moral transgressions (Eisenberg, 2000). Therefore, I suggest that my model is the most intuitive in the case of these two variables. Moreover, the interaction-only nature of the model gives insight into the potential conceptualization of transient and motivating (e.g., the urge to confess) anxieties within religious individuals (Quiles & Bybee, 1997).

A similar case can be made for the impulsivity model, but in the opposite direction. Previous work has shown that the priming of immorality leads to the desire to clean oneself (i.e., which would be the result of feeling "unclean": Lee & Schwartz, 2010; Zhong & Liljenquist, 2006). However, there is no evidence that feeling unclean leads to more *negative* behaviors. As such, it seemed clear that impulsive behaviors would be likely to lead to feelings of uncleanliness. If I am correct in my interpretation, then it seems that feelings of uncleanliness may serve as a signal for religious individuals to correct or compensate for their impulsive behavior, which they deem immoral (Geyer & Baumeister, 2005; Baumeister & Exline, 2000).

The reasoning behind the directional hypothesis regarding the prosociality findings is even clearer. Past research (Zhong & Liljenquist, 2006) showed that cleaning oneself led to *reduced* prosocial behavior. As such, using the reverse directional reasoning, one would predict that on days in which individuals felt cleaner they would perform *less* prosocial behaviors, because they would have a reduced need to compensate. This was not the case. Particularly for religious individuals, acting in a prosocial manner (i.e., morally) predicts a clean feeling, as if prosocial behaviors wash away one's sins of the day. Future work might take all three results into consideration and look at a full motivational path, involving cleanliness, for religious individuals.

Even with these considerations in mind, this was a correlational study and causal connections are merely speculative. Therefore, future research should use experimental procedures to determine the causal directions of these effects. The current design has another advantage. It is robust in its simplicity. The metaphor and embodiment literature has relied heavily on experimental designs (Meier et al., 2012). These experimental designs require great precision and the effects are often finicky. Therefore, my colleagues and I (e.g., Fetterman, Meier, & Robinson, 2015; Robinson & Fetterman, 2014) have argued for taking a more individual differences and/or within-subjects approach, particularly using daily sampling protocols – as they do not rely on precise experimental manipulations, have ecological validity, and have, generally, more power –, to build firmer foundations for this work. However, we do not suggest that individuals give up on experimental designs. We only suggest that personality and individual differences approaches may be a robust way to build a foundation before such experimental methods are introduced. As such, I believe that the work presented provides a unique, and ecologically valid, way forward for research in this area.

On a related, final note; as I mentioned, the literature also has tended to focus on main effects. However, recently there has been a push for discovering moderators in these findings (Meier et al., 2012). That is, to what boundaries can we push these effects and are they the same for everyone. Researchers (e.g., Fay & Maner, 2014; Keefer et al., 2011; Slepian, 2015), including myself (e.g., Fetterman et al., in press), have answered the call to investigate these moderators. Doing so, like in the current investigation of morality, cleanliness, and religiosity, allows for greater insight into how these effects work, in what situations, and for whom, which will lead to a clearer theoretical framework.

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