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COGNITIVE AND EMOTIONAL PROCESSES INVOLVED IN THE EXPERIENCE OF  
OBJECTS AS HOLY OR TRANSCENDENT

by

LOTTE PUMMERER

(Under the Direction of Michael Nielsen)

ABSTRACT

In recent years, attitudes about religion/spirituality have become more pluralistic (Pew Research Center, 2015a). At the same time, the number of individuals who identify themselves as nonreligious, atheist or agnostic are growing (Pew Research Center, 2015b), yet we are lacking words and research to describe their attributions of transcendence in language not bound to religious concepts. This study aims at examining both concepts – holiness and transcendence – in their similarities and differences through assessing cognitive and emotional processes involved in experiences of objects.

The study consisted of two parts with a total of 206 Christian and 52 nonreligious/atheistic/agnostic participants. In study one, 146 students (113 Christians, 33 Nonreligious/Atheists/Agnostics, or NAA) categorized 30 objects as holy or not, as well as transcendent or not. They did so either intuitively or after writing about their understanding of holiness/transcendence beforehand (systematic thinking condition). In study two, different participants (N=114, 93 Christians, 21 NAA) evaluated the same 30 objects on the ability to

elicit emotions like awe, elevation and joy, the perceived purity of the objects, as well as their importance in culture and religion.

Results showed that there was no difference in perceptions of holiness and transcendence in the intuitive or systematic thinking condition. While Christians categorized about the same number of items as transcendent and holy as NAA participants, objects were generally more easily categorized as transcendent than as holy in both groups.

A factor analysis and regression showed that perceived holiness of objects among Christians was predicted mostly by the factors religion ( $\beta=.906$ ), and awe ( $\beta .261$ ), Adj.  $R^2=.881$ . Transcendence similarly was most correlated with the factor of religion ( $\beta=.720$ ) and awe ( $\beta=.510$ ), but the factor of happiness/connectedness also contributed ( $\beta=.207$ ),  $R^2=.821$ . Among Nonreligious/Atheist/Agnostics, perceived holiness was predicted by the relation to religion ( $\beta=.909$ ), and additionally negatively predicted by experienced connectedness/happiness ( $\beta = -.250$ ), Adj.  $R^2 =.880$ . Transcendence, even among Nonreligious/Atheist/Agnostics, was predicted by objects' relation to religion ( $\beta=.698$ ) and their relation to awe ( $\beta=.344$ ), with the factor joy/connectivity ( $\beta=.226$ ,  $p=.059$ ) approaching significance, overall Adj.  $R^2 = .618$ . Results show that while there is similarity between the concepts of holiness and transcendence, transcendence is distinct in including a sense of happiness/connectedness not present in religion.

INDEX WORDS: Sanctification, Objects, Religious Schema, Terror Management Theory, Psychology of Religion, Holiness, Transcendence, Atheism

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OBJECTS AS HOLY OR TRANSCENDENT

by

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Intermediate Exam, University of Leipzig, Germany, 2012

A Thesis Submitted to the Graduate Faculty of Georgia Southern University in Partial

Fulfillment of the Requirements for the Degree

MASTER OF SCIENCE

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Electronic Version Approved:

May 2017

## DEDICATION

To my sister Jule.

Your presence in my life inspires me to overcome challenges and boundaries.

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## CHAPTER 1: INTRODUCTION

One characteristic that differentiates humans from animals is the ability to reflect on one's own mortality, which in turn has been shown to lead humans to search for and hang on to things that increase self-esteem and that encourage one's own worldview and culture (Solomon, Greenberg, & Pyszczynski, 2013). Religions, as a part of culture, are especially well-suited to serve as such a mitigation to death anxiety as they not only provide meaning through symbolic immortality (providing a worldview, history and traditions that will continue over time), but often also support a belief in literal immortality in the sense of an afterlife (Solomon et al., 2013; Vail et al., 2010). One way of expressing those worldviews and religious beliefs in everyday life is the attribution of divine and transcendent qualities to objects, actions and strivings that seem especially valuable, meaningful, or extraordinary. Accordingly, research on sanctification of work, strivings, marriage, family and the body reveals that if something is described and perceived as holy, people invest more time and effort in it and are less likely to put it at risk (Harrison, Ashforth, & Corley, 2009; Kusner, Mahoney, Pargament, & DeMaris, 2014; Mahoney, Pargament, Murray-Swank, & Murray-Swank, 2003; Mahoney, Carels, et al., 2005; Mahoney, Pargament, et al., 2005).

Studies investigating sanctification have been based within a theological and religious framework in the sense that they assume that religious dogmas precede the attributions of holy and divine qualities to specific objects. As the number of people who are not affiliated with a specific religion has grown to 22.8 % reporting non-affiliation as of 2014 according to the Pew Research Center (2015), it seems worth asking, if such sanctification also occurs outside of a

religious and theological framework in the sense that specific things are considered as extraordinary, extremely valuable, or immortal.

Terror management theory, for example, describes religion and therefore the sanctification of objects as one (often subconscious) response to the threat of death (Solomon et al., 2013). In the context of an often implicit response to threat of death, it would seem reasonable that there is a possibility that the same process also works in individuals without a religious background – regardless if that background is a different spirituality, atheism or agnosticism. So far, society as well as the scientific community is lacking not only research, but even precise words for describing such feelings and attributions of immortality and value that resemble religious experiences, but are based on a different (e.g., a spiritual, atheistic or agnostic) worldview. In this study, I want to suggest and examine the word “transcendent” as one possible adjective describing objects that are extraordinary, extremely valuable and perceived as being immortal – independent from, though not excluding, a religious/theological background.

Furthermore, I want to examine the cognitive processes involved in perceiving something as holy or transcendent. Research of Kahneman (2011) shows that humans generally use two modes of thinking: One mode is fast, intuitive, and effortless, but often shallow; the other mode is slow thinking, which requires some effort and reflection, but then offers a more precise answer. These insights also affect the processing of religious and transcendent experiences and religious/transcendent attributions (McCauley, 2011). While some objects might intuitively be regarded as holy or transcendent, these attributions might not correspond to one’s actual dogma, values or worldview.

One possible explanation for intuitive attributions of holiness/transcendence to a certain object (confirming or contradicting the systematic belief about it) could be the ability of an object to induce certain emotional states (for example awe or elevation) or schemas (purity, cultural/religious importance), which generally have been connected to religiosity and spirituality (Keltner & Haidt, 2003; McCauley, 2011; Saroglou, Buxant, & Tilquin, 2008; Van Cappellen & Saroglou, 2012; Waugh & Fredrickson, 2006). As there has been no research concerning the relationship between emotion or cognitive processes and sanctification, the goal of the current study is to examine relations between the tendency of certain objects to elicit mentioned emotional states and schemas and their perceived holiness and transcendence.

The study of religions, spiritualities and worldviews often is a complex endeavor as it involves several social, cognitive and emotional processes. This study tries to combine several aspects of religion/spirituality in order to examine their relations and interactions. Therefore, the study and its results can be viewed from different perspectives with the following goals:

- examine the experience and meaning of the word “**transcendent**” in its similarities and differences to the word “**holy**”;
- compare a **systematic** to an **intuitive** approach when it comes to assigning holy or transcendent qualities;
- explore possible **reasons** for those attributions through comparing relevant characteristics of certain objects (including the ability to evoke certain emotions or schemas);
- provide insights into the **sanctification of objects** as one expression of the individual’s culture and worldview.

### **Sanctification from the View of Cognitive Science of Religion**

The question of the development of sanctification independent from a theistic framework is tightly bound to the question of the evolution of religion. There have been several theories about the emergence of religion. Some of them are able to explain why people believe in someone (and literally, *someone* with human characteristics) like God and how this notion is easily transmitted over cultures. Other theories offer an explanation for the actual rituals and behaviors which are not only found in the world religions, but also apply to many individualistic forms of spirituality. Overall, they hint at possible mechanisms – conscious or subconscious - through which certain objects are likely to be perceived as more holy or more transcendent than others. Important for the current study is that these processes that affect all individuals are not necessarily bound to later religious explanations or frameworks.

Because religions all over the world consist of similar patterns and structures, McCauley (2011) asserts that religion originally developed out of intuitive processes. He distinguishes between cognitions that are fast because of training (practiced naturalness) and cognitions that are inherently fast (maturational naturalness). Because maturational-natural cognitions developed early through natural selection, these intuitive cognitive patterns can be found throughout all cultures and they develop without further training and do not depend on other technologies or artifacts (McCauley, 2011). Examples of maturational naturalness are the ability to walk, to recognize faces and to create language-similar speech-patterns. According to McCauley (2011), religions consist of several such maturational natural patterns that interact to form a unique type of religion. Some intuitive patterns have been identified as important in the emergence of religion.



The first factor is the tendency to see **intentional agents** in natural/random events (e.g. wind blowing, leaves rustling). This hypersensitive agency detection device (HADD) is thought to have developed as a survival mechanism, since the costs of not detecting an agent were much higher than falsely assuming there was an agent behind an event (Barrett, 2013; McCauley, 2011). The belief in a creator of the universe (common in many religions, but also many forms of spiritualities) is thought to be one consequence of this tendency to seek for intentional agents on a higher level.

Secondly, Guthrie (1993) showed that there is the natural tendency of humans to **anthropomorphize** their surrounding - an effect that is prevalent in our language (e.g. plumbing is gurgling), as well as every-day behavior (e.g. seeing the silhouette of a person in mail boxes or tree stumps; assuming dogs can understand us etc.). Together with the tendency to search for agency, anthropomorphism seems to be strongly related to religion (Guthrie, 1993; Guthrie et al., 1980) in the sense that we have a natural tendency to also anthropomorphize God (Barrett & Keil, 1996). In a study by Barrett and Keil (1996), participants first stated their belief about God, including his ability to read minds and to do multiple mental activities at the same time. They later listened to stories that included God as an agent, but were ambiguous on how God was conceptualized. One example story was that a boy got in trouble, while God was answering another prayer. God helped the boy through freeing him from the rock that he was caught in. Participants were then asked to report the story in their own words. Results showed that participants for this example had a tendency to assume that God first answered the other prayer and then helped the boy. This tendency to ascribe human characteristics to God while evaluating or re-writing an ambiguous narrative contradicted the non-anthropomorphizing theological

descriptions that participants provided, which led the authors to the assumption that there are two parallel God concepts that are theoretically incompatible (Barrett & Keil, 1996). One plausible explanation for these differences in the God concepts can be traced back to the different modes in thinking.

Parallel to the tendencies to anthropomorphize and to search for agency, humans also intuitively prefer **teleological explanations**, in that they are in a constant search for meaning or purpose in the events happening. Kids, without doubt, agree that rocks are made pointy so that animals cannot sit on them (Kelemen, 1999). Evelyn Rosset (2008) demonstrated that this intuitive preference for teleological explanations is still present in adults, and even increased, when they were under time pressure. Further experiments suggested that this explanation is fast and intuitive, whereas interpreting something as happening randomly or by accident (as opposed to happening on purpose) requires an overwriting of the initiative thought (Deborah Kelemen & Rosset, 2009; Rosset, 2008). With regard to monotheistic religions, this tendency can explain why children as well as adults intuitively assume a loving creator that has created this world for a purpose and who, therefore, reject the theory of evolution and natural selection. Even among the religiously unaffiliated, 25% retain belief in God as a person and 31% in God as an impersonal force (Pew Research Center, 2015b). Furthermore, 45 % of the religiously unaffiliated also report thinking about the meaning and purpose of life (Pew Research Center, 2015b). It seems possible then that these religiously non-affiliated still may attribute teleological function to objects that may resemble notions of transcendence or spirituality, though maybe not in the traditional religious way. It further shows the necessity for research in Psychology of Religion to

consider differences between a fast/intuitive thinking and a more systematic one, since it can lead to different results in the interpretation or perception of intention.

As religions are passed on from generation to generation, it is necessary for the involved myths and narratives to be easily memorable. Pascal Boyer showed that narratives were best remembered when they involved a violation of a conceptual expectation that we have about different domains like animals, persons or artifacts (Boyer & Ramble, 2001). Such a **minimally counterintuitive** aspect or agent is better remembered than totally natural or extremely bizarre items. Even though this does not explain the emergence of individuals' religious thoughts, it can explain how particular religions were passed on while others were not (McCauley, 2011).

Lastly, other studies showed that humans follow magical belief manifested in the **law of contagion** (“once in contact, always in contact”) and the law of similarity (“the image equals the object”) when approaching disgusting, dangerous, or valued objects (Rozin, Millman, & Nemeroff, 1986). Because disgust – across cultures – has a strong relationship to morality (Haidt, Rozin, McCauley, & Imada, 1997), the law of contagion is easily transmitted into the moral realm. McCauley (2011) found that the behavior of people around sanctified places often resembles the behavior cued by the contamination management system (e.g. being careful and attentive, cleaning oneself, etc.) only with the inverted notion that the human might be the one contaminating the pure, sanctified place. He further states that some religions use a counterintuitive variation of the contamination principle in that the permanent and all-encompassing effect of contamination does not only work in a negative polluting way, but also in a positive matter. One encounter with the Holy purifies the believer completely, and sometimes even permanently. Examples for this everlasting effect are baptisms or conversions as we find

them in many monotheistic religions. Research about the law of contagion hints at one possible intuitive mechanism through which certain *objects* are more likely to be perceived as holy or transcendent than others, which is the perception of purity. If purity is an inherent characteristic of the Holy, we are more likely to ascribe holy or transcendent qualities to things that are pure in a hygienic way, but also in a moral way. Likewise, if morality is an inherent characteristic of the Holy (in the form of a personal being, but also an impersonal power or a higher Good), we are more likely to ascribe holy or transcendent qualities to objects that are hygienically pure as well. As the perception of purity resembles moral goodness in individuals regardless if one is religious or not (Haidt et al., 1997), purity seems to be a characteristic promoting the perceived holiness as well as transcendence of items, apart or even beyond religious teachings.

While the aforementioned theories can explain *how* the processes work that might have played a role in the development of religious/spiritual thinking, **terror management theory** is able to explain *why* these processes evolved and *why* people continue to use them. According to the terror management theory as originally developed by Becker and Solomon (Solomon, Greenberg, & Pyszczynski, 1991; Solomon et al., 2013), people are naturally threatened by the awareness of their death, both consciously and subconsciously, and respond to this threat through creating meaning and value, for example through pushing their self-esteem, emphasizing their culture (including the devaluation of individuals from different cultures) and adhering to religions that resemble symbolic immortality (e.g., many religions emphasize their use of old traditions) as well as literal immortality (e.g., the belief in an afterlife). Terror management theory can explain people's constant search for meaning (Frankl, 2006) continuous fights

between different cultures (Solomon et al., 2013), and the positive effects of meaningful worldviews (King, Hicks, Krull, & Del Gaiso, 2006).

This search for meaning involves all individuals and can lead, but is not necessarily bound to religious frameworks. Therefore, the sanctification of objects should not only occur in individuals with a religious worldview, but also in individuals who do not affiliate themselves with such. Furthermore, the creation of meaning always includes the process of evaluating one's own environment, including the evaluation of something as holy and/or transcendent. It results in giving different priorities and importance to different people, values, as well as objects (Koltko-Rivera, 2004). Factors that, often automatically, influence these evaluations are one's own culture and the worldview as well as religion of one's family and friends. Therefore, these factors should be included as one possible factor in the perception of something as holy or transcendent.

### **Differences between Intuitive and Systematic Cognitive Processes Concerning Religions and Spiritualities**

One conclusion that can be drawn from the cognitive science of religion is that our systematic thinking about our concept of God does not always fit our intuitions. In the experiments of Barrett and Keil (1996), participants heard and read narratives speaking of God as an agent. While the narratives themselves did not include any notions of anthropomorphism, participants later, when answering questions about the narratives, applied their anthropomorphic God concepts and remembered God as being constricted in time, vision, hearing, mind, taste and activities, for example through assuming that God first has to answer another prayer before he is

able to help a woman or that God is not able to listen to a loud and noisy jet, and birds singing at the same time. However, when participants were asked about their concepts of God, almost all of them (consistently between 93% and 95%) agreed that God can read minds, knows everything, is able to perform multiple mental activities and able to see, hear, smell, taste and touch even from a distance.

In variations of the experiment, they found that the tendency to anthropomorphize was significantly less when replacing God with other superhuman entities, for example a computer or different super-agent having godly capacities. They further confirmed that the anthropomorphisms are not due to recall error and that they persisted even when participants are asked to think of God as very different from humans (Barrett & Keil, 1996). Barrett and Keil (1996) concluded that the participants used two different, but parallel God concepts. I want to suggest that these two different God concepts are linked to the two modes of cognitive processing, intuitive and systematic thinking. While judgment of the abilities of God are linked to a systematic and rational approach of understanding God, the tendency to anthropomorphize relates more to an intuitive approach. Furthermore, the difference between the two concepts of God and two modes of thinking seems to be not apparent to the participants and seems to happen unconsciously.

Kelemen and Rosset (2009) faced a similar discrepancy in answers, when participants had to agree/disagree to explanations for several biological and physical phenomena. They found that participants were significantly more likely to agree to unwarranted purpose-based explanations (for example: “Mosses form around rocks to stop soil erosion” or “The earth has an ozone layer to protect it from UV light”; Deborah Kelemen & Rosset, 2009) in a speeded

condition (sentence had to be read and judged in 3200 ms) than in the moderately speeded (5000 ms) or unspeeded (no time pressure) condition. In later experiments, Rosset (2008) let participants judge if an action (e.g. “He forgot his homework”, “She broke the vase”; Rosset, 2008) was intentional or unintentional. Results not only confirmed that participants were more likely to mark actions as intentional in the speeded condition than in the unspeeded condition, but that participants also better remember sentences of actions that are marked as unintentional than sentences of actions marked as intentional, suggesting an overriding of an initial intentional inference.

As religions include different anthropomorphic or omnipotent god concepts as well as deal with the notion of giving and seeing purpose in this world, the aforementioned experiments are highly relevant for a study of Psychology of Religion and Spirituality and show the need to distinguish between a systematic/more rational processing of religion and religious experiences on the one hand, and a more intuitive understanding on the other hand. As it comes to the actual practice of religion, both ways seem to go hand in hand, inspiring and sometimes contradicting each other – probably without the individual even noticing those differences.

### **The Sanctification of Objects among Religions and Spiritual Movements**

In all of the monotheistic religions (Christianity, Judaism, Islam), God is thought to be the only source of holiness as stated, for example, in 1 Sam 2,2 (Bible & Torah) and Surah 59, 23 (Qur’an). Nonetheless, all of these religions also speak of ways in which earthly objects become sanctified, often in contact with or in relation to the Almighty. For many Christians, Sunday is holy, because God sanctified it during the creation of the world as it is told in Genesis

1. The holiness of the day is expressed through rituals like the Sunday service, which is celebrated all over the world. If the service includes communion, the bread and wine will be sanctified, symbolizing the body and blood of Jesus Christ. Likewise, Jews have the Kiddush ritual, in which they speak blessings over the goblet of wine and the bread in order to sanctify the Sabbath or a Jewish holiday (“Kiddush,” 1999). In Islam, the Qur’an as a book is holy, because it reflects the revelation coming directly from God, given to Mohammed. Any desecration of this book, as for example from an American Pastor burning a Qur’an (“Muslims protest against US church plans to burn the Qur’an,” 2010) results in massive protests and violence.

The sanctification of objects is also common in Asian religions. Hinduism, like the monotheistic religions, has holy texts, including the Vedas, the Ramayana, the Mahabharata and Puranas (Hawley, 1999). According to those texts as well as local traditions, there are certain rivers, trees, mountains and lands that are regarded holy (Hawley, 1999). And even though Buddhists emphasize immateriality, there are sacred paintings and statues that represent or reflect a manifestation of Buddha (Reynolds, 1999a). Even Mandalas, as a representation, can become sacred (Reynolds, 1999b).

A common characteristic of all mentioned religions is that the holiness of the sanctified objects lies not within the objects themselves, but in their symbolic or representative relation to something higher, may it be God, Buddha, Brahman (the supreme absolute in Hinduism) or the universe. On the one hand, it seems that only specific objects become holy through their connection to this higher Being or entity. On the other hand, many monotheistic religions proclaim that God, as the supernatural Being and creator, theoretically is able to manifest himself in everything and everyone – if he is not already manifested in everything by virtue of having



created all things, which seems to contradict the thought that only items connected to rituals have this holy quality. Looking back to the cognitive science of religion, it seems that – like in the experiments of Barrett and Keil (1996) as well as Kelemen and Rosset (2009) – we have to assume two different processes of understanding the representation of holiness in this world. Belief that God is represented in everything in this world (by virtue of having created all things) and therefore everything is holy seems to follow a more systematic (rational) approach. Alternatively, the belief that certain things resemble God more accurately or that certain things are closer to him (in an understanding that applies the anthropomorphic concepts of proximity to God) seems to follow a more intuitive approach.

If this assumption holds true, then there are certain intuitive mechanisms that make an item appear as more holy or as more transcendent. Obviously, objects used in religious rituals are likely to become sanctified by the rituals. For example, the goblet in Christianity as well as Judaism, the Mosque as house of prayer, Mandalas as a way of meditation in Buddhism etc., are intuitively described as holy/transcendent through the repeated association with holy rituals. But even apart from these religious rituals and dogmas, there are certain objects/constructs that are thought of as holy in many forms of religion and spirituality. Nature, for example, is thought to be holy or transcendent in many religions and individual forms of spirituality. Additionally, many religions, including newer spiritualities such as the New Age Movement, include light in their rituals and/or prayers, as for example in the prayer of the New Age movement called “The Great Invocation” (Geisler, 1987). Furthermore, it is very unlikely that a religion categorizes disgusting things, like feces, or immoral behaviors, like betrayal, as genuinely holy (Haidt et al.,

1997), which shows that in fact not all things can be thought of in connection with God, but only certain things that reflect/fulfill other qualities (e.g. purity).

### **Specific Emotions and Religious Experiences**

Similarities among the religions and spiritualities in what they perceive as holy/transcendent or not, raise the question of whether or not there is an underlying intuitive cognitive schema for holiness and transcendence that is activated through certain characteristics of an object, including the ability to induce certain emotional states. Such a cognitive schema may explain why certain things may be more likely to be thought of as holy or transcendent, and are aspects of several religious rituals, scripts, and dogmas. Recent decades have seen increasing research about positive emotions, showing that some positive emotions are especially related to religiosity and spirituality and therefore also could be involved in the sanctification of objects.

*Positive emotions in general.* One important and explanatory powerful theory in Positive Psychology is the Broaden-and-Build Theory of Positive Emotions that has been developed by Barbara Fredrickson (2001). According to her theory, positive emotions – in contrast to negative emotions - are able to broaden the mind and thought-action repertoires. As a result, the individual becomes more flexible, creative, inventive and playful. These effects seem to be possible through a changed mindset that is better able to include divergent ideas and is more inclusive and unifying (Fredrickson, 2001). Fredrickson (2001) conducted several experiments that demonstrated the effects of positive emotion.

The most important aspect of this theory concerning religion and spirituality, is the inclusive and unifying effect of positive emotions, which leads to a greater oneness perceived with other people (Waugh & Fredrickson, 2006). A greater oneness with people in turn has been described as one important factor of spirituality (Piedmont, 1999; Van Cappellen & Saroglou, 2012). In addition to that, there have been other studies showing that positive emotions in general lead to a greater experience of meaning in life (King et al., 2006), which itself seems to be an important factor in the development of religions as well as spirituality.

It is an ongoing discussion whether positive emotions in general are able to increase religiosity and spirituality (as one could conclude from King et al., 2006 and Piedmont, 1999) or if only self-transcendent positive emotions have this effect (as for example shown in Saroglou et al., 2008). Self-transcendence, in contrast to positive emotions, includes the experience of something wonderful, awe-inspiring, and the perception of being surrounded by something greater than oneself (Saroglou et al., 2008). It is also possible that general positive emotions have a general positive effect on religion/spirituality, whereas specific positive emotions (like awe and elevation) have a more specific effect on religion/spirituality.

*Awe.* The feeling of awe has been classified as a positive emotion distinct in its core relational theme as well as facial expression (Campos, Shiota, Keltner, Gonzaga, & Goetz, 2013). Keltner and Haidt (2003) described the distinct characteristic of awe as a perceived vastness with the resulting need of accommodation as the individual is not able to assimilate the experience. The perceived vastness can take different forms. It can, for example, be physical (as in mountains, tall buildings and churches), social (as with authoritative figures, fame) or can consist in skills, abilities, or subjective constructs like beauty. Studies have confirmed that awe is

elicited by information-rich stimuli while having a de-emphasis on social interaction when compared to the general positive emotion of happiness (Shiota, Keltner, & Mossman, 2007). Participants described their experiences as such: “A feeling of smallness, being in the presence of something greater than the self, inattention to one’s personal day-to-day concerns, connection with the surrounding world, and wanting to prolong or memorize the experience” (Shiota et al., 2007, p. 952). Interestingly, other studies showed that awe is able to expand people’s perception of time – which in turn could fit to the feeling of timelessness often described in mystical experiences (Rudd, Vohs, & Aaker, 2012).

In fact, there have been several studies examining awe directly in relation to religion and spirituality. Saroglou, Buxant and Tilquin (2008) found that participants watching a video about nature or childbirth (which both express vastness and have been shown to significantly induce respect, wonder and admiration – constructs related to awe) later reported higher religiosity as well as spirituality, compared to a neutral control group watching a video about beer fermentation. Interestingly, the video eliciting humor also increased religiosity, but not spirituality – an indicator, that religion could be related to positive feelings in general, while spirituality is more specifically bound to the feeling of awe. Van Cappellen and Saroglou (2012) showed that awe also has an effect on spiritual behavior in the way that awe in interaction with religiosity and spirituality (although not awe itself, according to this experiment) leads to the endorsement of a spiritual travel destination in the way that the more religious or spiritual participants identified themselves, the greater was the effect of awe on the spiritual behavior.

***Elevation.*** Similar to awe, elevation is regarded as being self-transcendent (Saroglou et al., 2008). Elevation is caused by the unexpected experience of human kindness and goodness, it

involves “a warm or glowing feeling in the chest” (Haidt, 2000, p. 1) and it creates a wish in the person to become better him-/herself (Haidt, 2000). Interestingly, elevation has been conceptualized as the opposite of social disgust as disgust is not only a feeling related to food, but extends into the social space. As such, disgust is also felt for behaviors that do not fit the accepted code in a certain culture. Elevation in contrast, describes the feeling connected to purity on a social dimension. Elevation is the feeling elicited by social behavior that is admirable and inspiring such as helping other people, being selfless, showing empathy and compassion etc.

It seems that elevation also shares many characteristics with awe, since both feelings describe inspiration and the need for accommodation (elevation describes morally good behaviors that are *unexpected!*). A differentiation between the two seems to be that awe is more connected to vastness, such as vast objects, while elevation is more connected to social behaviors. Interestingly enough, even though people have no problem in anthropomorphizing God, it seems to be the feeling of awe that is related to experiences with the Holy, not particularly the feeling of elevation (Keltner & Haidt, 2003).

As already stated, research about positive emotions, including the emotions of awe and elevation, is still in its beginning and there are ongoing discussions concerning the core characteristics, differentiations among, and interactions between the specific emotions. Thus far, it seems that positive emotions play a role not only as *effects* of religiosity and spirituality, but also as a *cause* of religion and spirituality in the sense that triggering positive emotions like awe lead to a greater reported religiosity/spirituality (Saroglou, Buxant, & Tilquin, 2008). If certain objects are able to elicit similar emotions in the participants, it could in turn lead to an increased perception of holiness and transcendence for these objects. Furthermore, it is likely that in that

case the individual is not aware of how much these emotions influenced his/her perception, because religious teachings suggest that holiness/transcendence is a stable attribute that does not dependent on individuals' feelings.

### **The Effects of Sanctification**

The focus of psychological research about sanctification has been the effects of sanctification (Mahoney et al., 1999; Murray-Swank, Pargament, & Mahoney, 2005; Mahoney, Pargament, Murray-Swank, & Murray-Swank, 2003; Hernandez et al., 2011; Mahoney, Carels, et al., 2005; Mahoney, Pargament, et al., 2005). These studies show, for example, that the sanctification of marriage leads to better marital adjustment, more perceived benefits from marriage and less marital conflict (Mahoney et al., 1999) and that the sanctification of the body leads to healthier behaviors, satisfaction with one's body, and less alcohol consumption (Mahoney, Carels, et al., 2005). Similar studies showed that the sanctification of personal goals and strivings leads to a higher commitment and more invested time and energy towards the sanctified striving, as well as to a greater sense of life purpose and meaning (Mahoney, Pargament, et al., 2005). All of these studies focus on the outcome and effect of sanctification on specific aspects of life, and are in line with the overall positive effect of religion on well-being (Pargament, Koenig, & Perez, 2000).

For all of those studies, the concept of sanctification is directly or indirectly bound to a concept of the sacred or the divine. Mahoney, Pargament, Aaron Murray-Swank, and Nichole Murray-Swank (2003) suggest that there are two ways in which an aspect of life may be perceived as having spiritual character and significance. One of them is the possibility that an

object is perceived as “being a manifestation of one's images, beliefs, or experience of God” (Mahoney et al., 2003, p. 221), which seems to resemble religious teachings that certain items become holy in connection and manifestation of God or the specific high being. Through such a manifestation, “virtually any aspect of life can take an extraordinary character *through its association with, or representation of, divinity*” (Mahoney, Pargament, Murray-Swank, & Murray-Swank, 2003, p. 221; emphasis added).

The second, non-theistic form of sanctification comes “by attributing qualities to it [an object] that are typically associated with divine entities” (Mahoney et al., 2003, p. 222). Even though it is not explicitly stated, both ways of explaining sanctification share the underlying assumption that there first was the concept of God or a divine entity, which then is transmitted, broadened, and attributed to other objects related to it. I want to question the assumption that there first is an understanding of the concept of God and only a subsequent understanding of holy, divine or transcendent objects. From what we know about the specific forms of religions as well as the processes involved in the development of religion, it seems possible that there are certain objects that are perceived as holy or transcendent even without or before developing a theistic framework, for example through evoking specific emotional states or schemas.

For several years now, the number of non-religiously affiliated individuals, including atheist and agnostics is growing (Pew Research Center, 2015b) together with the overall pluralistic images of God, forms of religions and spiritualities. In light of these changes, it seems to be necessary to search for a framework of sanctification that is able to a) better capture non-theistic ways of thinking about holiness and transcendence as well as b) to better explain the

development of the sanctification of objects with or without a reference to missing religious teachings and belief systems.

### **The Construct of “Transcendence” in Psychological Literature**

One construct that might be helpful to describe religious experience of non-religiously affiliated individuals is the construct of transcendence. Problematic at this point is that many operationalizations of transcendence used so far vary considerably. The online-encyclopedia Britannica states that transcendence was a concept originally developed by theologians for God’s capability of going beyond humanity and the world (“Religious Experience,” 2016). Some definitions of spirituality and transcendence seem to include this original meaning, while expanding it. Consequently, transcendence has been defined as the “higher energies” (Freeman, 2013) or the “emotional connection with the numinous/mystical” (Johnstone, Bodling, Cohen, Christ, & Wegrzyn, 2012). Measurements such as the Inspirit (Kass, Friedman, Leserman, Zuttermeister, & Benson, 1991) measure “the occurrence of experiences that convince a person God exists & evoke feelings of closeness with God” (Kass et al., 1991, p. 205). Participants are encouraged to replace God with their understanding of higher energies. Other scales, such as the brief measurement of multidimensional religion and spirituality have been used in a similar way (Johnstone et al., 2012).

While these scales still refer to a higher being, Piedmont (1999) defined spiritual transcendence as “the capacity of individuals to stand outside of their immediate sense of time and place and to view life from a larger, more objective perspective. This transcendent perspective is one in which a person sees a fundamental unity underlying the diverse strivings of



nature” (p. 998). The definition of Reed (2013) goes even further in describing transcendence as the general capacity to expand self-boundaries “intrapersonally (toward greater awareness of one’s philosophy, values, and dreams), interpersonally (to relate to others and one’s environment), temporally (to integrate one’s past and future in a way that has meaning for the present”, and transpersonally (to connect with dimensions beyond the typically discernible world)” (p. 111). In summary, while some scientists bind their definition of transcendence back to religious frameworks and the theological concept of God, others describe transcendence as a cognitive process and state.

New research from the neurosciences emphasizes the second approach as it seems that spirituality is related to a decrease in the activation in the right-parietal lobe, which is associated with the self-concept, whereas religious practice is associated with activation in the right-parietal lobe and a parallel higher activity in the frontal lobe, which is more connected to religious concepts (Johnstone et al., 2012). Therefore, the core characteristic of transcendence might be the experienced selflessness, regardless of whether an individual is concerned with a higher being, a mystical experience, some unknown higher force or simply society, family or nature. This seems to fit to the observation of Rockenbach and colleagues (2015), describing that “nonreligious students’ sense of connection to divine and universal concepts manifests as well in definitions that emphasize transcendent relationships to something that is bigger, greater, or beyond *but not specifically to higher powers*” (p. 7; emphasis added).

This study shows that even non-religiously affiliated students describe a relation to something transcendent and higher than themselves, thus confirming the need for transcendence, which we also concluded from terror management theory. It is my hypothesis that this

transcendence can also be associated with certain objects. Because transcendence is connected to perceiving something as higher, bigger and/or greater than oneself, it might share some similarities with religious experiences without being bound to religious frameworks. Therefore, the experience of objects as transcendent is possibly linked to emotional processes triggering this experience, but does not necessarily involve or require the use of these objects in religious rituals.

### **Pilot Study**

In a pilot study, we examined the similarities and differences between items perceived as holy and transcendent (Pummerer & Nielsen, 2016). At the same time, we asked participants about their reasons for rating an item as holy or transcendent since, as stated above, even though there are many studies focusing on the outcomes of sanctification, no prior study has been conducted that examines the causes of sanctification. We developed an online-questionnaire that we made available at psychology- and religion-related websites as well as among our personal connections via Facebook. The questionnaire was fully answered by 37 participants (19 male, 16 female, 2 Other/Decline to answer) with different religiosities (Christianity: 12, Islam: 5, Agnostic: 5, Atheist: 3, Other:12). 21 of the 37 participants completed the questionnaire asking about the holiness of objects, and 16 participants completed the questionnaire asking about transcendence. Each participant rated 128 items from different aspects of life on a Likert-Scale (1 to 5) according to their holy or transcendent qualities. All items, including the mean ratings for holiness, transcendence and holiness and transcendence together are presented in Table 1.

***Holy and transcendent items.*** We selected all items that received a rating of being holy or being transcendent of at least 3.50 on the Likert-scale from 1 to 5. The 44 items are listed in Table 2. It is interesting that most of the items that were rated as especially **holy** are related to religions (e.g. religious buildings, God), religious rituals (Praying, Worshipping, service) or behaviors (Donating money). **Transcendent** items included items that are thought to be especially awe-evoking (sunrise, sunset, birth), items that were connected to reflection (time for myself, meaningful conversations) or culture (music, concerts, literature, language).

There were also items that were both rated as holy as well as transcendent. Among these items, besides nature, are 9 items in the category of attributes and values. Apparently, values are constructs that religious as well as non-religious people agree on as being important. For this categorization it is important to note that some of these items received similar values on the other scale, but slightly missed the 3.50 cutoff (e.g. “The soul” received an overall rating of 3.4 for being transcendent; “Birth” received an overall rating of 3.35 for being holy). Table 1 provides more details about the exact ratings of all items, whereas Table 2 only includes items that received a score of 3.50 or higher on either holiness or transcendence. We also wanted to identify those items that seem to be **uniquely holy** or **uniquely transcendent**, operationalized here as ratings for holiness and transcendence for those items were at least 1 point apart from each other. Table 3 shows those items that were rated as uniquely holy and uniquely transcendent as well as their overall mean. The items in bold are those items that received a mean rating of 3.50 or higher. An examination of the items in Table 3 illustrates that those items related to religions and religious rituals were uniquely rated as holy, while items related to culture were uniquely rated as transcendent. Even though holiness and transcendence seem to share some content, particularly

in relation to values, and both appear to reflect the idea of something larger, holiness seems to relate to the “larger” more so in religions, whereas transcendence seems to refer more to the culture and self-reflection. It seems as if the experience of looking away from oneself, the selflessness associated through a decreased activity in the right parietal lobe (Johnstone et al., 2012), finds different expressions. Holiness appears to mean finding selflessness while looking onto God whereas transcendence appears to indicate selflessness while looking onto other people, communities and shared values.

*Is there a semi-holiness/transcendence?* Another interesting finding of the pilot study was the rating pattern itself, as each item was rated on a scale from 1 (not holy/transcendent) to 5 (holy/transcendent). We examined the ratings of all items and tried to determine how often all participants together rated an item on the different levels from not holy to holy and not transcendent to transcendent. The bar graphs for each of the conditions can be seen in Figure 1. Overall, holiness reflected a more extreme rating (ratings on 1 and 5) than transcendence. In the holiness condition, 67.3 % of the items were rated on a 1 *or* 5; whereas in the transcendence condition only 43 % of the items were rated either 1 or 5 with more items being rated in the middle (i.e., 2, 3 or 4: 57 %).

Regarding the answer pattern for items rated as holy, the fact that 32.8 % of the items were rated on an intermediate level (2, 3 or 4) was surprising, and may indicate that religious teachings lead one to view an object/person/activity as either completely holy or not holy at all. What does it mean that something is rated on a 2, 3 or 4? Can something be semi/holy? Or is it only experienced holy part of the time (i.e. in particular contexts)? For transcendence, the pattern looked a bit different. Overall, 57 % of the items were rated on a 2, 3 and 4 (medium-

transcendent) as compared to a 1 or 5 (not transcendent or transcendent). Perhaps transcendence itself is a concept that does not reflect extremes, but rather a continuum, in comparison to holiness, which appears to be more dichotomous (i.e., either holy or not holy).

***Responses to the qualitative questions.*** Responses to the qualitative question seem to confirm what we know about different emotions associated with religion or spirituality (see above). Participants in the “transcendent” condition repeatedly spoke about feelings connected to awe when describing their reasons for rating items as transcendent. Participants indicated that an item makes them “feeling small but still connected to everything else;” reporting something as “extraordinary”, “powerful”, “wonder” and generally being inspired by items that they perceive as transcendent. Holy items were also described as being awe-inspiring, though less than transcendent ones. Participants’ responses included statements such as “these appear as miracles to me”, they are “unique”, “precious”, “irreplaceable” and raise an “awareness of our own fragility/mortality”.

Regarding the feeling of elevation, many participants in the “holy” condition wrote about an elevating effect of items they rated as holy. Responses included statements such these items “make this world a better place to live in”. Participants also spoke about peace, “doing good for others”, items that “foster pacifism, love, care, charity and growth”. Participants in the transcendent condition also spoke about items being “related to Peace and Love” and having a “quality of connectedness and openness and love and understanding that feels expansive”. Other reasons that were often mentioned for rating an item as “holy” were specific religions. People repeatedly spoke about religious teachings and scriptural content when rating something as holy.

They, for example, indicated that “Moses is the prophet of God” and that something is “mentioned in the bible” and therefore holy.

Overall, the pattern of responding suggests that feeling awe might be more connected to transcendence, while elevation relates more to holiness. The overall tendency to rate religious items as uniquely holy (not transcendent) seems to match the qualitative answers of the participants. These tendencies are investigated further with current study. Specifically, by giving participants items that are related to the feelings of awe as well as elevation, I want to test whether participants are more likely to categorize either one as more holy or transcendent and if the tendency of the items to elicit those emotions is able to explain their ratings of holiness or transcendence independently of religious teachings. We also want to examine whether this pattern still holds true in different modes of thinking. As the participants in the pilot study had to give reasons for their answers, they might have used their systematic thinking. With the current study we want to examine both, intuitive and systematic thinking and whether both thinking styles differ in the perceptions of holiness and transcendence.

### **The Present Study**

The literature review supports the notion that humans have an innate desire for meaning and intuitively perceive purpose and intentions in the world surrounding them. But intuitive perceptions of meaning, purpose and intention might change when individuals have the chance to reflect on the content at stake. Literature also suggests differences in intuitive and systematic thinking regarding the detection of meaning and anthropomorphisms of God and developed the hypothesis that people’s perception of holiness and transcendence might build on similar

processes that either depend on fast and intuitive, or slow and systematic thinking (Barrett and Keil, 1996; Kahneman, 2011). For that reason, the first experiment consists of two conditions. In one condition, participants are asked to intuitively categorize items as holy or not holy, while in the other condition, participants are asked to first reflect on their concept of holiness and to later apply it when categorizing the same items in order to emphasize systematic thinking. As the word “holy” is tightly bound to religious frameworks, we further want to utilize the same task asking participants to categorize items as “transcendent” or not, examining the differences between the concepts of holiness and transcendence.

The pilot study suggested that holiness and transcendence are slightly different in their concepts, but share the connections to the feelings of awe and elevation. The literature review additionally hinted at the characteristics of purity as well as cultural importance as possible factors in religious/spiritual processes. As some objects are described as holy or spiritual across different religions, cultures and spiritualities, a goal of the current study is to assess whether or not that attribution is linked to the ability of these items to elicit certain emotional states (e.g., awe, elevation and/or joy) or certain characteristics of this item (e.g., purity, cultural importance) – apart from their importance in religions. In order to assess this ability, a second experiment is conducted, in which participants rate the same items used in the first experiment in their relation to awe, elevation, joy, purity, cultural importance and religious importance. Together with the results of the first experiment, there may be patterns indicating that certain characteristics of an item account for variance regarding intuitively perceived holiness or transcendence or its holiness/transcendence when processed in a more systematic and rationale way. In line with the literature review and the pilot study, my hypotheses are:

- (1) More items are categorized as holy and transcendent in the intuitive condition than in the systematic condition.
- (2) The difference between rational and intuitive categorization is larger when asked about the holiness of items than for transcendence.
- (3) The ability of items to elicit the emotions of awe and elevation is the most important predictor for the perceived transcendence of items.
- (4) The ability of items to elicit the emotions of awe and elevation is a significant predictor for the perceived holiness of items in general, though possibly not as predictive as the influence of religious rituals, dogmas and teachings.
- (5) The ability of items to elicit the emotions of awe and elevation is more predictive for the perceived holiness of items in the intuitive condition than in the systematic condition.



## CHAPTER 2: GENERAL METHOD

### **Overview**

The study consists of two experiments. The focus of the first experiment is to examine differences between an intuitive versus a systematic understanding of the holiness and transcendence of objects. The second experiment is a questionnaire about characteristics (awe, elevation, joy, purity, culture, religion) of the same objects used in the first experiment. Both experiments together will be used to indicate which factors seem to be most important in the perception of something as being holy or transcendent.

### **Participants**

Participants for both experiments were recruited through the psychology subject pool of Georgia Southern University and received course credit in return. In order to reduce confounds through the religiosity of participants, the experiment mainly focuses on Christian participants. The results of non-religiously affiliated individuals are assessed and reported as a pilot study for further investigations.

### **Materials**

Both experiments used 30 stimuli, consisting of different objects (Appendix 1). In order to obtain sufficient range of ratings, the pool of stimuli partly consisted of objects that have been related to awe (e.g. mountains, waterfalls, shooting stars), that often cause the feeling of joy (e.g. chocolate, coffee), that are related to culture (e.g. paintings, literature, town hall), related to

purity (e.g. soap, snow, water) or that do not seem to relate to any of these concepts and are therefore neutral (e.g. dog, mud, bottle). Elevation itself is linked to prosocial behavior and social situations, therefore there were no *objects* directly related to this concept in the pool of stimuli. Due to the possibility that elevation for some participants was related to some of the objects in the pool, I retained the measurement of elevation, as it has been linked to religious/spiritual behavior.

### **Procedure**

Experiment one was conducted in a laboratory. Experiment two was conducted online. After signing the Informed Consent form (Appendix 2) for the experiment they are participating in, participants began experiment one or two. Upon completing the experiment, participants filled out questions about their age, cultural background and religious orientation (Appendix 3).

## CHAPTER 3: METHOD EXPERIMENT 1

### **Participants**

A total of 163 Participants were recruited from the subject pool of Georgia Southern University. Six participants experienced technical errors during the experiment. All of them agreed to take the test again, and their original (incomplete) data were removed. Eight participants indicated to know the word “Gojey”, which was a fantasy word included in the measure to filter out participants who did not pay attention. The data of those 8 participants was excluded from the analysis, leaving a total number of 155 participants. Among the participants were 113 Christians (1 of them choosing “Other” as description and entering “Catholic”), 17 individuals indicating no religious affiliation, 11 Agnostics, 5 Atheists, 3 Unitarian-Universalists, 2 Hindus, 2 Jews, 1 Muslim, 1 individual identifying him/herself as Deist. For the main analysis, I only used the data of those 113 individuals who identified as Christians (including the one who identified as Catholic). Counting only Christians, there were 113 participants, 59 individuals in the systematic condition and 54 participants in the intuitive condition. Participants’ age ranged from 18 – 25 ( $M = 19.12$ ,  $SD = 1.24$ ). In each group, there were more women than men, with the systematic group being slightly more female (59.3%) than the intuitive group (51.9%). Participants in general were more likely to self-identify as more religious and more conservative. A more detailed overview of the demographics is in Table 4.

The data of the individuals who identified as Nonreligious, Atheist or Agnostic were treated as pilot data. These included 33 individuals who indicated that they either had no religious affiliation ( $N = 17$ ), were Agnostics ( $N = 11$ ), or Atheists ( $N = 5$ ). Their demographics

can be seen in Table 5. Since the sample size was very small, I did not conduct any between-group analyses with this sample. However, I used their data in combination with experiment 2.

## **Materials**

Participants were rating the 30 items described in the General Method section (see also Appendix 1).

## **Procedure**

Participants were randomly assigned to one of two conditions (intuitive/systematic). In the intuitive condition, participants were told that they will see a set of 30 items on the computer screen, each for 0.5 seconds and that their task is to categorize whether each item is holy (right key) or not (left key). They were asked to follow their intuitive judgments and definitions for their rating. In order to increase the intuitive judgment, each item was only visible for 0.5 seconds. After finishing the first task, they completed a distractor task, which was the presentation of 20 pictures, two at a time. The participant had to judge which of the pictures he/she likes better. Then, participants went back into the first task, this time categorizing the same 30 items as transcendent (right key) or not (left key). The order of the holy/transcendent prompt was reversed for half the participants.

Within the systematic condition, participants were asked to first systematically reflect on their concept of holiness. They did so through answering questions that are related to holiness, which can be seen in Appendix 4, for example: How do you define holiness? Which characteristics do holy objects have? What things do you consider as holy? They were told that

they later have to use this concept for rating items on their holy qualities. Therefore, participants were told to thoroughly reflect on the concept and to write as much as possible (at least one sentence) to each question. Furthermore, the program required them to enter at least one character into each textbox before they were able to perform the categorization task.

Upon finishing that task, it was explained to them that they will see a set of 30 items on the computer screen and that their task is to categorize whether each item is holy (right key) or not (left key). They were asked to apply the concept of holiness they described beforehand. Each item was visible until the participant made his/her decision. After the distractor task (which was the same as described for the intuitive condition), they were asked to thoroughly reflect on their concept of transcendence, knowing that they would have to apply it to another set of objects. They were asked to write as much as possible for each question and were not able to continue to the categorization task before entering at least one character. This task was followed by another categorization task of the 30 items as transcendent (right key) or not (left key). The order of the holy/transcendent condition was reversed for half the participants.

## **Results**

Participants categorized all objects as either holy or not, and as either transcendent or not. Table 6 shows all 30 objects and for each object, how often it was categorized as holy or transcendent among the Christian participants, for all 4 conditions respectively. My first hypothesis was that more items are categorized as holy and transcendent in the intuitive condition than in the systematic condition. To test this hypothesis, a Mixed 2 (thinking: intuitive vs. systematic) x 2 (prompt: holiness vs. transcendence) Analysis of Variance (ANOVA) was

conducted with prompt serving as the within-subjects factor. A graph can be seen in Figure 2.

The expected main effect of the systematic vs. intuitive condition did not turn out to be significant such that in the systematic condition ( $M = 10.712$ ,  $SD = .60$ ) about the same number of items were categorized as holy or transcendent as in the intuitive condition ( $M = 11.30$ ,  $SD = .63$ );  $F(1,111) = .46$ ,  $p = .50$ . Because holiness, in comparison to transcendence, is more bound to religious dogmas, I further expected an interaction such that the difference between the categorization in the intuitive condition and systematic condition is bigger when considering the holiness of items than when considering their transcendence (Hypothesis 2). Results showed, that there was also no interaction between thinking style (cognitive vs. intuitive) and prompt (holy vs. transcendent),  $F(1,111) = .011$ ,  $p = .917$ . The difference between the holiness of items in the intuitive condition ( $M = 10.00$ ,  $SD = 5.22$ ) and systematic condition ( $M = 9.36$ ,  $SD = 4.57$ ) was no larger than the difference between the transcendence of items in the intuitive condition ( $M = 12.59$ ,  $SD = 5.41$ ) and systematic condition ( $M = 12.07$ ,  $SD = 6.61$ ). However, there was a main effect of prompt such that objects were more likely to be categorized as transcendent ( $M = 12.33$ ,  $SD = .57$ ) than holy ( $M = 9.67$ ,  $SD = .46$ ).

In order to assess possible order effects, I conducted t-tests comparing the number of objects categorized as holy/transcendent when the concept at stake (holiness or transcendence, respectively) was represented first or second. Analyses revealed that there was an order effect for the number of items rated as transcendent. Individuals who rated the transcendence of objects first, categorized more objects as transcendent ( $M = 13.93$ ,  $SD = 5.12$ ) than did participants who categorized objects first about their holiness and then their transcendence ( $M = 10.79$ ,  $SD = 6.48$ );  $t(111) = -2.842$ ,  $p = .005$ . There was no order effect for holiness.

For the participants identifying as nonreligious, atheist or agnostic, no between-group analyses of thinking style (intuitive vs. systematic) were conducted due to the small sample size. An overview of all items and how often they were rated as holy or transcendent (intuitive and systematic condition combined) can be seen in Table 7. In order to assess differences in the categorization behavior between Christians and Nonreligious/atheistic or agnostic participants, a Welch's-test comparing the number of items categorized as holy by the two groups, was conducted. Nonreligious/atheistic or agnostic participants categorized the same number of objects as holy ( $M = 8.82, SD = 5.41$ ) than religious participants ( $M = 9.66, SD = 4.88$ ), Welch's  $t(48.218) = .807, p = .42$ . There was also no difference in the number of objects categorized as transcendent. Nonreligious/atheistic/agnostic participants categorized about the same number of objects as transcendent ( $M = 11.55, SD = 6.25$ ) than religious participants ( $M = 12.32, SD = 6.25$ ), Welch's  $t(50.767) = .630, p = .532$ . A related-samples t-test conducted for prompt showed the same effect as in the Christian sample: Nonreligious/atheistic/agnostic participants were more likely to categorize an object as transcendent ( $M = 11.55, SD = 6.25$ ) than as holy ( $M = 8.82, SD = 5.41$ ),  $t(32) = 2.26, p = .031$ .

Lastly, it was assessed whether Christians and nonreligious/atheistic/agnostic participants would differ in their answer behavior for specific objects, e.g. religious objects. Therefore, chi-square analyses for all 30 items were conducted. When comparing Christian and nonreligious/atheistic/agnostic participants in regard to specific objects, both categorized most of the 30 objects as holy or transcendent to about the same extent, as can be seen in the results of Crosstabs reported in Table 8 and 9. Chi-Square tests showed that there is a difference in categorization between Christians and nonreligious/atheistic/agnostic participants only for the

objects Church, Crucifix and Bible. Christians were more likely to categorize Church ( $\chi^2= 4.61$ ,  $p = .032$ ,  $\Phi = -.178$ ), Crucifix ( $\chi^2 = 6.23$ ,  $p = .013$ ,  $\Phi = -.207$ ), and Bibles ( $\chi^2= 13.79$ ,  $p = .001$ ,  $\Phi = -.307$ ) as holy; and more likely to categorize Bibles ( $\chi^2= 10.21$ ,  $p = .001$ ,  $\Phi = -.264$ ) as transcendent compared to nonreligious, atheistic and agnostic participants. However, all 3 objects were still categorized as holy very often by nonreligious, atheistic or agnostic participants (Church: 85 %, Crucifix: 67 %, Bibles: 79 %).



## CHAPTER 4: METHOD EXPERIMENT 2

### **Participants**

One hundred thirty-three participants were recruited through the subject pool of Georgia Southern University to participate in an online study evaluating objects. 15 participants were excluded from the analysis for filling out less than 50 % of the survey, leaving a sample of 118 participants. As there might be differences between Christians and Non-Christians in the ratings (e.g. for the ratings of awe, elevation and religiosity), only Christians were included in the main data analysis, leaving 93 individuals participating in the survey. Most of the participants were between the ages of 18 and 20 (N = 74) and 65.6% of the participants were female (N = 61). Participants also indicated to be more religious, more spiritual and more conservative on average. For more information, see Table 10, including demographic data from Christian as well as nonreligious, atheistic and agnostic participants. Again, the data of participants identifying as nonreligious, Atheists or Agnostics were included as pilot data. Overall, there were 21 people, 10 identifying as nonreligious, 7 as atheists, 4 as agnostics. Most of them were between 18 and 20 and two thirds of them were female. When asked, how religious they are, two thirds (66.7%) of the individuals from the groups of nonreligious, atheistic or agnostic participant, also indicated that they are not religious (N = 14), and 28.6 % said that they are also not spiritual (N = 6). While most of them (52.4%) said that they were in-between being liberal and conservative, the whole sample leaned towards being more liberal.

## **Procedure**

After signing the Informed Consent form, participants saw the same 30 items as used in the first experiment (Appendix 1). Participants were told that their task is to indicate how much they agree or disagree with sentences about characteristics of items. There were a total of 30 items each presented together with 12 sentences, stating how much each item reflects the 6 characteristics awe, elevation, joy, purity, culture and religion, each represented with 2 sentences (Appendix 5). The order of items and the order of the 12 sentences per item was randomized. Participants expressed how much they agree/disagree with these sentences on a 1 (Disagree) to 5 (Agree) Likert scale. In order to maintain attention throughout the task, participants first saw a block of 15 items, then took a break while doing the same distractor task as described in experiment 1, and then continued rating the additional 15 items.

## **Results**

In order to test hypotheses 3 to 5, results of experiment one and two were combined separately for Christians and nonreligious/atheistic/agnostics participants. First, the average evaluation of participants for each item (Study 2), resulting in 12 scores for each of the 30 objects was computed. All items and their means and Standard Deviations can be seen in Table 11 (Christians) and 12 (Nonreligious, Atheists and Agnostics). For the six constructs awe, elevation, joy, purity, culture, and religion, there were two sentences (items) reflecting each construct. Then, all item scores were transformed in SPSS so that, instead of representing one participant, each row represented one of the 30 objects with 12 scores (i.e., the 12 characteristics assigned to each item), reflecting the columns. Combining the 2 ratings per construct across the

objects, all constructs had a Cronbach's alpha of .80 or above (awe:  $\alpha = .801$ ; elevation:  $\alpha = .833$ ; joy:  $\alpha = .997$ ; purity:  $\alpha = .887$ ; culture:  $\alpha = .895$ ; religion:  $\alpha = .998$  for Christians. awe:  $\alpha = .829$ ; elevation:  $\alpha = .816$ ; joy:  $\alpha = .994$ ; purity:  $\alpha = .855$ ; culture:  $\alpha = .878$ ; religion:  $\alpha = .990$  for Nonreligious/Atheists/Agnostics).

Results of experiment one were added such that each object received a score on how many participants in each of the conditions (holy – systematic, holy-intuitive, transcendent – systematic, transcendent – intuitive) rated the object as holy or transcendent. For Christians, scores of all 4 conditions included, while for nonreligious, atheistic or agnostic participants only the scores for holy and transcendent (intuitive/systematic condition combined) were included. These scores are the same as depicted in table 6 (Christians) and 7 (Nonreligious/Atheists/Agnostics).

In order to see how each of the proposed 6 concepts (awe, elevation, joy, purity, culture, and religion) related to holiness and transcendence, correlations between the concepts and the perceived holiness/transcendence were conducted, with results in Tables 13 and 14. For Christian participants, all 6 concepts except joy significantly correlated with the perceived holiness in both the intuitive and systematic holy condition. Among the 6 concepts, religion was related most with perceived holiness,  $r = .908$  in the intuitive condition and  $r = .938$  in the systematic condition. Second was purity, which was correlated with  $r = .691$  in the intuitive and  $r = .764$  in the systematic condition. Feelings of elevation and culture were about equally important, with elevation reaching  $r = .595$  (intuitive) and  $r = .633$  (systematic) and culture reaching  $r = .569$  (intuitive) and  $r = .587$  (systematic). Lastly, the perceived holiness was related

to awe with  $r = .433$  (intuitive) and  $r = .506$  (systematic). Generally, correlations were slightly higher in the systematic condition.

The perceived transcendence of objects among Christians correlated with all 6 concepts, including joy. Perceived transcendence was also most related with religion,  $r = .869$  in the intuitive condition and  $r = .858$  in the systematic condition. Second came purity and awe, with purity reaching  $r = .763$  (intuitive) and  $r = .741$  (systematic) and awe reaching  $r = .721$  (intuitive) and  $r = .756$  (systematic). Elevation was related with the perceived transcendence with  $r = .619$  (intuitive) and  $r = .670$  (systematic), next came culture with  $r = .587$  (intuitive) and  $r = .524$  (systematic) and joy with  $r = .486$  (intuitive) and  $r = .488$  (systematic).

For nonreligious, atheistic or agnostic participants, correlations among the 6 concepts and transcendence showed a similar, though not as strong, pattern. Perceptions of transcendence were mostly correlated with religion,  $r = .743$ , then with purity,  $r = .479$  and awe,  $r = .437$ .

Transcendence was not significantly correlated with elevation, culture or joy among nonreligious, atheistic or agnostic participants. Regarding holiness, only religion was positively and strongly connected to perceived holiness,  $r = .919$ . Interestingly, awe, elevation, joy and culture were all negatively correlated to the perceived holiness of objects, though not significantly.

Correlations among the six constructs were considerably high, as can be seen in Table 15 (Christians) and 16 (Nonreligious/Atheist/Agnostic). For Christians, all 6 constructs were correlated at a significance level of  $p = .05$ , many of them even at  $p = .01$ . For nonreligious, atheistic or agnostic participants, all factors except religion were correlated at a significance level of at least  $p = .05$ . Therefore, in order to deal with the problem of multicollinearity, an

exploratory factor analysis was conducted which reduced the 12 ratings of the sentences into 3 factors. Factor loadings are presented in Table 17. Factor loadings were analyzed and sentences with factor loadings greater than .6 were seen as characteristic for a specific factor. For the ratings from Christians, the first factor was connected most to the concepts of joy (the sentences “induce the feeling of joy in me” and “make me feel happy”) and connectivity/culture (with the sentences “...connect me to other people” and “...make this world a better place”). One aspect of awe (“...induce the feeling of awe”) was also loading on factor one, but was dual-loaded and loaded also on factor three. The second factor was mainly connected to religion (“...are often used or referred to in religious rituals” and “...are important in religious teachings”), to purity (“...reflect purity” and “...are without contamination”), one aspect of culture (“...are important in my culture”) and wanting to be a better person. As factor loadings were highest on religion, and as purity, relevance in culture and wanting to be a better person are all aspects connected to religion and religiosity, the second factor was interpreted as a factor describing the objects relation to religion. The third factor was connected with the two descriptions of awe (“...make me feel small” and “...induce the feeling of awe in me”), with the latter dual-loading on factor three and factor one.

Factor loadings were similar for nonreligious, atheistic or agnostic participants, only in a different order. The first factor was also most connected with joy and connectivity/culture (the four sentences “...connect me to other people”, “...are important in my culture”, “...make this world a better place”, and “...induce the feeling of joy in me”). Furthermore, the first factor was also related to wanting to be a better person, and the sentence “...induce the feeling of awe in me” again dual-loaded on the two factors related to joy/connectivity, and awe.

The second factor was loading most onto awe and purity, which is similar to the third factor described for Christians – except that purity for Christians was related to religion, while it seems to be connected to awe for Non-Christians. The 4 sentences connected to factor two for nonreligious/atheistic/agnostic participants were “...make me feel small”, “...induce the feeling of awe in me”, “...reflect purity”, and “...are without contamination”. The third factor was loading on religion – similar to the second factor for Christians. These similar factor loadings show that the constructs are relatively robust.

Hypotheses 3,4, and 5 talk about specific emotions/cognitive concepts predicting the perceived holiness or transcendence of items. Therefore, regression analyses with the 3 factors as predictors were conducted for holiness and transcendence as outcomes for both Christians and Non - Christians. Results of the regression analyses can be seen in Table 18 and 19. I hypothesized that the ability of items to elicit the emotions of awe and elevation is a significant predictor for the perceived holiness of items in general, though possible not as predictive as the influence of religious rituals, dogmas and teachings (Hypothesis 4). Results show that, indeed, holiness is mostly predicted by an items association with religion, with Betas of at least .90 across all conditions and participants. In line with hypothesis 4, though, holiness was also predicted by awe for Christians. Hypothesis 4 also included elevation as being predictive for the perceived holiness. After the factor analysis, the two statements for elevation loaded on different factors. The sentence “...make me want to be a better person” loaded on the factor “religion”, while “...make this world a better place” related to joy and connectivity (factor 1). Therefore, one could say that elevation in line with religion predicted perceived holiness, though not the aspect of making the world a better place.

Hypothesis 5 stated that the ability of items to elicit the emotions of awe and elevation is more predictive for the perceived holiness of items in the intuitive condition than in the systematic condition. Generally, factors significantly predicting the perceived holiness or transcendence of items in the intuitive condition were the same as factors predicting the perceived holiness or transcendence in the systematic condition among Christian participants (Table 18). Generally, Beta-levels tended to be higher and p lower in the systematic conditions, indicating that the systematic conditions were a little more precise in their evaluations. Overall, this confirms the findings of study 1, showing that there appears to be no difference between a systematic or intuitive processing when it comes to the perception of objects as holy or transcendent.

Regarding transcendence, I hypothesized that the ability of items to elicit the emotions of awe and elevation is the most important predictor for the perceived transcendence. Transcendence indeed was significantly predicted by the objects' relation to awe – for Christians ( $\beta = .502$  intuitive condition,  $\beta = .503$  systematic condition) as well as nonreligious/atheistic/agnostic participants ( $\beta = .34$ ). However, the objects' relation to religion was a more important predictor for the perceived transcendence of objects, again among Christians ( $\beta = .717$  intuitive condition;  $\beta = .703$  systematic condition) as well as Non-Christians ( $\beta = .698$ ). Elevation again loaded on the factor related to religion and joy/connectivity.

When looking at the factors predicting holiness among Non-Christians, holiness was mostly predicted by objects' relations to religion ( $\beta = .909$ ). Surprisingly, though, holiness was also significantly negatively predicted by joy and connectivity ( $\beta = -.250$ ), showing that

nonreligious/atheistic/agnostic participants seem to have negative feelings towards holy objects, while on the same time, still combining them with religion and regarding them as holy.

Overall, transcendence seemed to be a broader factor than holiness, as Christians connected it to all three factors. Even among nonreligious/atheistic/agnostic participants, transcendence was significantly predicted by the two factors religion and Awe, with the third factor, joy/connectivity approaching significance ( $\beta = .226, p = .059$ ).



## CHAPTER 5:

### DISCUSSION

Contrary to predictions in hypotheses 1, 2, 3 and 5, there was no difference between the systematic and intuitive condition for either perceived holiness or transcendence. Similarly, the influence of the different factors in the regression analyses were similar for both conditions. Generally, factors were a little more precise in the systematic condition, in the sense that correlations/beta-weights were higher. This small difference may be due to participants having more time for the categorization in the systematic condition. Objects in the intuitive condition disappeared after .50 seconds, possibly causing some participants to miss seeing an object, resulting in a random categorization. It does not seem to be the case that there is a different processing style at work, as both the regression results (Table 18) as well as the correlations among the factors and items (Table 13) were similar. The expected pattern that in the intuitive condition, emotions such as awe and elevation would have a greater effect as indicated in hypothesis 5 was not observed.

One reason for those results could be that the manipulation was not sufficiently strong. There was a restriction on how long participants in the intuitive condition would see the items, but there was no restriction on how much they thought about the items. It is possible that participants still took time to think about the objects in a way that their systematic thinking was activated. Alternatively, participants in the systematic condition, may not have sufficiently processed the concepts of holiness and transcendence during the priming. Many participants answered one sentence per question at maximum, often only in bullet points. Therefore, perhaps these 5 questions were not the appropriate method by which to activate systematic processing.

Systematic thinking is characterized by applying a rationale, more objective thinking (Barrett and Keil, 1996; Kahneman, 2011) rather than an intuitive answer. Therefore, it might have been necessary to ask the participants of the study for a rationale and explanation for every choice they made rather than simply asking them about their opinion about those concepts.

Experiments of Barrett and Keil (1996) suggested that individuals have an intuitive and a systematic understanding about the image of God, one time being a personal Being with human restrictions (intuitive thinking), another time a supernatural being without those restrictions (systematic thinking). It could be possible that this difference in thinking style is unique to the God image. Perhaps, it does not transfer to an intuitive vs. systematic understanding about the holiness of objects, for example because ideas about holiness, as well as transcendence, are too abstract. Considering the data from nonreligious, atheistic and agnostic participants, holiness seemed to be rather schematic, not connected to personal beliefs, possibly meaning that it is also less intuitive. What made participants categorize an object as holy or transcendent, was mainly the connection to religion. This process seems to be mainly connected to schemata that are solid enough to hold true in the systematic as well as in the intuitive condition.

### **Order Effect of Transcendence**

While there was no difference between the intuitive and systematic condition for perceptions of transcendence, there was an order effect. When Christian participants rated the transcendence of objects first, they categorized more objects as transcendent ( $M = 13.93$ ,  $SD = 5.12$ ) than when they first categorized objects as holy ( $M = 10.79$ ,  $SD = 6.48$ ). This might mean that there is an anchor-effect for transcendence. When seeing transcendence in comparison to

holiness, Christian participants possibly want to preserve the uniqueness of the concept of holiness through categorizing fewer items as transcendent. Another possibility is that through thinking about transcendence after being primed with “holiness”, they saw a greater similarity between the two concepts and understood transcendence (only) in religious terms. This explanation is supported by the correlations and regressions, showing that in the group who rated transcendence second, religion was more correlated and more predictive for the perceived transcendence (see Tables 13 & 18). When seeing transcendence first, participants did not see the religious connotation as much, but felt freer to categorize other objects as transcendent.

### **Factors Predicting Perceptions of Holiness and Transcendence**

Unfortunately, some regression analyses were not possible due to the problem of multicollinearity. As described in the literature, there is an overlap between the concepts awe and elevation as both are self-transcendent emotions (Keltner & Haidt, 2003). Similarly, joy and elevation share the core of being both positive emotions that can be uplifting and can broaden one’s horizon as described in the Broaden-and-Build-Theory (Fredrickson, 2001). Furthermore, positive emotions seem to have evolved in order to build communities, explaining the relation to culture. Still, in reducing the six constructs of awe, elevation, joy, purity, culture and religion to three factors, some of the hypotheses could be tested. The data supports hypothesis number four showing that the emotion of awe (in combination with purity) is predictive of the perceived holiness, though not as important as the influence of religious rituals, dogmas and teachings. Among all factors, the relation to religion was most predictive for the holiness of items in all conditions. The data do not support the notion that awe has a greater effect in the intuitive

condition. On the contrary, the effect of awe was somewhat larger in the systematic condition ( $\beta = .270$ ) than in the intuitive condition ( $\beta = .187$ ), suggesting again that the difference between the intuitive and systematic condition seemed not to be a different kind of thinking, but more a difference in precision of categorization. Other emotions, like elevation, joy and connectivity, seemed to have no relationship with the perceived holiness among Christians.

In regard to transcendence, I predicted that the ability of items to elicit the emotions of awe and elevation is the most important predictor for the perceived transcendence of items among Christians, which was not supported by the data. The most important predictor for perceived transcendence among Christian - as well as nonreligious/atheistic/agnostic participants - remained the connection to religion, showing that there is an overlap between the concepts of holiness and transcendence. This overlap is understandable, as transcendence for many Christians is thought of as one attribute of God. In comparison to holiness, though, categorizations of transcendence among Christians were more predicted by awe ( $\beta = .502$ , intuitive,  $\beta = .503$ , systematic) than categorizations of holiness ( $\beta = .187$ , intuitive,  $\beta = .270$ , systematic). Furthermore, transcendence among Christians was significantly predicted by joy and connectivity ( $\beta = .185$ , intuitive,  $\beta = .220$ , systematic). These results show that while there is similarity between the concepts of holiness and transcendence for Christians, transcendence is distinct, in that it is more related to a sense of awe and additionally includes a sense of happiness/connectedness not present in religion.

I was surprised to see that also for nonreligious, atheistic or agnostic participants, transcendence was most predicted by the objects' relation to religious practices and religious teachings. Because of its immaterial nature, transcendence still seems to be a concept that

belongs in the realm of religiosity. In contrast to holiness, though, transcendence does not seem to be limited to this realm, but also connects to emotions of awe (and purity) as well as joy and connectivity, which approached significance with ( $p = .059$ ). Considering that holiness was negatively predicted by joy and connectivity of objects among nonreligious, atheistic or agnostic participants, that transcendence is positively related to joy and connectivity, seems to be worth noting.

### **Differences between Christians and the Nonreligious/Atheists/Agnostics**

Describing the perceived holiness of items, I was surprised to find more similarities between the categorization behavior of Christians and nonreligious, atheistic or agnostic participants than differences. Both categorized the same number of objects as holy and transcendent. When looking at specific objects, there was no difference in categorizing an object as holy for 27 of the objects, and no difference in categorizing an object as transcendent in 29 of the objects. The only difference for holiness was for Church, Bibles and Crucifix, but even for those objects, nonreligious/atheistic/agnostic participants categorized those objects as holy at least 60 % of the time, Churches were even categorized as holy by 85 % of the participants. What was surprising is that nonreligious/atheist/agnostic participants don't seem to reinterpret the concept of holiness in line with their personal beliefs (e.g. as something with personal significance or something with higher power) in order to then apply this definition to other objects. Instead, they still seem to feel comfortable categorizing something as holy even though they themselves don't believe in it. Holiness therefore seems to be more a religious category than an attitude, belief or personal opinion.

What happened, though, is that there were other emotions that were related to the attribute of holiness. Among nonreligious, atheistic or agnostic participants, perceived holiness was negatively predicted by joy and connectivity. Perhaps these emotions reflected their previous encounters with religion, rather than their conceptual understanding of holiness. It is as if those individuals are saying: Religious objects, and possibly religion itself, suppresses joy and prevents real connections among people. Nonetheless, they categorize these objects as holy.

For transcendence, both groups seem to feel similarly about the concept. They indicate that there is a relation between transcendence and religion, but for both groups awe was also predictive of perceived transcendence. Additionally, perceived joy and connectivity related to the objects was predictive for transcendence among Christians – a factor that still approached significance ( $\beta = .059, p = .226$ ) among nonreligious/atheistic/agnostic participants. And while the actual amount of data entered into the regression analysis for nonreligious/atheistic/agnostic individuals would not change through a bigger sample size due to my kind of analysis, I still hope to get more precise results with a larger sample size.

## CHAPTER 6:

### SUMMARY AND CONCLUSION

Because all participants, regardless of whether they were religious or nonreligious, atheistic or agnostic, had a similar understanding of the word transcendence relying on all three factors, results underline the use and promotion of the concept of transcendence as a concept to describe objects related to awe, relation, joy and connectivity. It seems to be a concept that is broader and more easily approachable for nonreligious, atheistic or agnostic individuals, as it is less related to religion than holiness. Furthermore, it does not seem to have a negative connotation, neither for Christians nor for nonreligious individuals, Atheists or Agnostics, as both groups seem to relate it to joy and connectivity – among the nonreligious/atheist/agnostic sample at least with marginal significance. Regarding the concept of holiness, this study seems to show that it is a word that is still used by nonreligious, atheistic and agnostic participants, and is - among everything else - most related to religious practices and religious teachings. However, while holiness for Christians is also related to awe, it is negatively related to joy and connectivity for nonreligious individuals, Atheists or Agnostics.

This study does not support the idea that there is a difference between an intuitive and systematic understanding of holiness or transcendence. Again, what seems most relevant for an object to be perceived as holy is its use by religion. As such, the perception of holiness seems to be based more on schemata of religiosity than on intuition. Considering the broad picture, these results might support one of many explanations for the descending numbers of religious adherents: Instead of building on intuitive feelings and attributions, religions try to bind their adherents to the religion mostly by dogmas and schemas about religiosity.

This study also showed which emotions or characteristics are related to perception of holiness, even though those characteristics are different depending on the group. Christians perceived items as more holy when they related them to the experience of awe. This supports the use of awe-inspiring elements in religious practices, e.g. with high buildings such as churches, mystical rituals (e.g. communion), and awe-inspiring surroundings (e.g. a service in nature, on a mountain-top, or early in the morning during sunrise). As for nonreligious individuals, Atheists or Agnostics, one could theoretically increase perceptions of holiness through making objects that are already connected to religion less joyful or less community-oriented, which would build on the already existing connection between non-joyfulness/non-connectedness and holiness.

But for religious leaders, the goal might be different. Instead of increasing already existing connections between non-joyfulness/non-connected and holiness among nonreligious individuals, Atheists and Agnostics, religious leaders could try to show that holiness first has to do with personal significance and awe. They could, for example, do so while using the term transcendence, as it has less negative connotations. In that way, transcendence should not be understood as something anti-religious and decreasing the importance of holiness, but rather something that facilitates the dialogue through resembling a concept that is still bound to religion, but also to awe, joy and connectedness among people and therefore more approachable to nonreligious, atheistic or agnostic individuals.



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## TABLES

**Table 1: Items from the Pilot Study and Their Mean Rating of Holiness and Transcendence**

Time & Space			Material Objects			Events & Transitions			Cultural Products		
Items	H	T	Items	H	T	Items	H	T	Items	H	T
<i>Sunrise/Mornings</i>	3.15	4.14	<b>Crucifix</b>	<b>3.35</b>	1.85	Holidays in general	2.55	3.14	<b>Music</b>	3.05	<b>4.67</b>
<i>Sunset/Evenings</i>	2.95	3.69	Rosary	2.85	2.21	Bar Mitzvah	2.4	2.29	<b>Concerts</b>	2.58	<b>3.8</b>
Friday	2.19	2.14	Icons	2.7	2.07	Confirmation	2.85	2.36	<b>Literature</b>	2.53	<b>4</b>
Saturday	1.60	1.92	<b>Hijab</b>	<b>2.6</b>	1.23	Baptism	3.45	2.8	<b>Sports</b>	1.37	<b>2.43</b>
Sunday	2.95	2.14	<b>Torah</b>	<b>3</b>	2	Moments of conversion	3.45	3	Clothes	1.42	2.4
Weekdays	1.67	1.38	<b>Qur'an</b>	<b>3.38</b>	1.85	<b>Religious rituals</b>	<b>3.62</b>	2.53	<b>Dances</b>	2	<b>3.29</b>
<b>Churches</b>	<b>3.90</b>	2.64	<b>Bible</b>	<b>4</b>	2.43	<i>Church service</i>	3.5	2.67	<b>Language</b>	2.42	<b>3.64</b>
<b>Mosques</b>	<b>3.57</b>	2.38	Mascots	1.6	1.54	<b>Sabbath</b>	<b>3.25</b>	2.14			
<b>Synagogues</b>	<b>3.57</b>	2.38	Lucky charms	1.35	1.62	<b>Friday prayer</b>	<b>3.38</b>	2.36			
Temples	3.48	2.92	Cars	1.1	1.46	Ramadan	3.24	2.43			
<i>Nature</i>	3.86	4.79	<b>Instruments</b>	1.35	<b>2.5</b>	Religious gatherings	3.48	2.67			
My home country	2.19	2.69	Drugs	1.2	1.69	Suffering	2.55	2.5			
Jerusalem	3.19	2.36	Alcohol	1.15	1.92	<i>Death</i>	3.2	3.53			
<b>Mekkah</b>	<b>3.00</b>	2	Stones	1.45	1.92	<b>Birth</b>	3.35	<b>4.4</b>			
Rome	2.45	2.5	Toys	1.25	1.69	Weddings	2.95	3.47			
<b>Theatres/operas</b>	1.80	<b>3.23</b>	Household items	1.3	1.46	Moments of success	2.58	3.13			
Stadiums	1.45	1.77	<i>My body</i>	3.65	3						
My Work place	1.30	2.21									
Home	2.57	2.71									

Beings			Attributes & Values			Activities		
Items	H	T	Items	H	T	Items	H	T
<i>God</i>	4.3	3.47	<i>Intelligence</i>	3.37	3.53	Parenting	3.42	3.13
<b>The Human</b>	3	<b>4</b>	<i>Personal discipline</i>	3.11	3.57	<i>Spending time with/for family</i>	3.42	3.53
Myself	3	3	<i>Self-awareness</i>	3.25	4.13	Working	2.79	2.67
<i>The soul</i>	3.53	3.4	Self-esteem	3	3.36	Meditating	3.05	3.07
<b>Followers of my religion</b>	<b>3.16</b>	2.07	<b>Creativity</b>	3.16	<b>4.33</b>	Meeting with friends	3	3.33
<b>Mohammed</b>	<b>3.3</b>	1.93	<i>Warmth for other people</i>	3.6	3.93	<i>Helping others</i>	3.7	4
<b>Jesus</b>	<b>4.1</b>	2.8	Self-Management	3.05	3.07	<i>Donating money</i>	3.7	2.73
Buddha	2.95	2.79	<i>Happiness</i>	3.47	3.73	Doing Sports	1.84	2.4
<b>Moses</b>	<b>4</b>	1.86	<i>Respect</i>	3.6	3.73	Driving in a car	1.47	2.2
<b>Saints</b>	<b>3.42</b>	2.33	<i>Justice</i>	3.79	3.6	Engaging in sexual activities	2.58	3.4
<b>Religious leaders</b>	<b>3.21</b>	1.64	War	1.47	1.27	Eating	2.16	2.93
<b>Pastors</b>	<b>3.32</b>	1.79	<i>Love</i>	3.95	4.47	Fasting	3.1	2.73
<b>Priests</b>	<b>3.26</b>	1.71	<i>Freedom</i>	3.4	3.93	Dancing	2.32	3.13
<b>Rabbis</b>	<b>3.16</b>	1.71	<i>Peace</i>	3.9	4.27	Taking care of my body	3.47	3.2
<b>Imams</b>	<b>3.05</b>	1.71	Patriotism	2.47	2	<b>Listening to music</b>	2.63	<b>3.87</b>
Popstars/famous people	1.58	1.36	<i>Equality</i>	3.65	3.8	Playing music	2.68	3.43
My friends	2.42	2.73	<i>Human Dignity</i>	3.65	4	<i>Taking time for myself</i>	2.74	3.6
My partner	2.56	2.93	<i>Human rights</i>	3.6	3.67	<b>Going to religious services</b>	<b>3.37</b>	2.36
My family	2.74	3.13	Democracy	3.21	3.36	<b>Worshipping</b>	<b>4</b>	2.71
Animals	3.16	3.07	Environmental care	3.45	3.43	<b>Praying</b>	<b>4.05</b>	2.8
<i>Plants/trees</i>	3.26	3.64	Pacifism	3.21	3.21	<i>Meaningful conversations</i>	3.3	3.71
			Marriage	3.35	3.27	Smoking	1.05	1.36
			<i>Friendship</i>	3.42	4.07	Drinking	1.16	1.93
						Reading a book	2.74	3.21
						Volunteering	3.37	3.4

**Explanation:** **H:** ratings for holiness; **T:** ratings for transcendence; **Italics:** all items receiving an average rating of 3.5 or higher; **bold:** items that were rated as uniquely holy or transcendent (ratings for holy/transcendent differed at least one point)



**Table 2: Items Rated Holy or Transcendent in Pilot Study**

<b>Both holy (<math>\geq 3.50</math>) and transcendent (<math>\geq 3.50</math>)</b>	<b>Holy (<math>\geq 3.50</math>)</b>	<b>Transcendent (<math>\geq 3.50</math>)</b>
Nature	Churches	Sunrise/Mornings
Warmth for others	Mosques	Sunrise/Evenings
Respect	Synagogues	Death
Justice	Bible	Birth
Love	My body	Music
Peace	Religious rituals	Concerts
Equality	Church service	Literature
Human Dignity	God	Language
Human rights	The soul	The Human
Helping others	Jesus	Plants/Trees
	Moses	Intelligence
	Donating money	Personal discipline
	Worshipping	Self-awareness
	Praying	Happiness
		Freedom
		Friendship
		Spending time with/for family
		Listening to music
		Taking time for myself
		Having meaningful conversations

**Table 3: Items Uniquely Rated Holy or Transcendent in Pilot Study**

<b>Uniquely holy</b>	<b>Uniquely transcendent</b>
<b>Jesus (4.1)</b>	<b>Music (4.67)</b>
<b>Praying (4.05)</b>	<b>Birth (4.4)</b>
<b>Worshipping (4.0)</b>	<b>Creativity (4.33)</b>
<b>Moses (4.0)</b>	<b>The Human (4.0)</b>
<b>Bible (4.0)</b>	<b>Literature (4.0)</b>
<b>Churches (3.9)</b>	<b>Listening to music (3.87)</b>
<b>Religious rituals (3.62)</b>	<b>Concerts (3.8)</b>
<b>Mosques (3.57)</b>	<b>Language (3.64)</b>
<b>Synagogues (3.57)</b>	Dances (3.29)
Saints (3.42)	Theatres/Operas (3.23)
Qur'an (3.38)	Instruments (2.5)
Friday prayer (3.38)	Sports (2.43)
Going to religious service (3.37)	
Crucifix (3.35)	
Pastors (3.32)	
Mohammed (3.3)	
Priests (3.26)	
Sabbath (3.25)	
Religious leaders (3.21)	
Followers of my religion (3.16)	
Rabbis (3.16)	
Imams (3.05)	
Mekkah (3.0)	
Torah (3.0)	
Hijab (2.6)	

Explanation: **bold:** Items receiving a rating of 3.5 or higher.

**Table 4: Demographics of Christian Participants Experiment 1***Demographics Christian Participants*

		Systematic		Intuitive		Total	
		N	%	N	%	N	%
Age	18	28	47.5	15	27.8	43	38.1
	19	16	27.1	18	33.3	34	30.1
	20	9	15.3	15	27.8	24	21.2
	21-25	6	10.2	6	11.1	12	10.6
Gender	Female	35	59.3	28	51.9	63	55.8
	Male	24	40.7	26	48.1	50	44.2
Religiosity	Religious (1)	14	23.7	16	29.6	30	26.5
	(2)	15	25.4	18	33.3	33	29.2
	(3)	20	33.9	13	24.1	33	29.2
	(4)	9	15.3	4	7.4	13	11.5
	Not religious (5)	1	1.7	3	5.6	4	3.5
Spirituality	Spiritual (1)	15	25.4	15	27.8	30	26.5
	(2)	17	28.8	16	29.6	33	29.2
	(3)	17	28.8	16	29.6	33	29.2
	(4)	8	13.6	5	9.3	13	11.5
	Not spiritual	2	3.4	2	3.7	4	3.5
Political Affiliation	Liberal (1)	3	5.1	2	3.7	5	4.4
	Somewhat liberal (2)	7	11.9	6	11.1	13	11.5
	Neither liberal nor conservative (3)	20	33.9	19	35.2	39	34.5
	Somewhat conservative (4)	15	25.4	15	27.8	30	26.5
	Conservative (5)	14	23.7	12	22.2	26	23.0
<b>Total</b>		59	100	54	100	113	100

**Table 5: Demographics of Participants Identifying as Nonreligious, Atheistic or Agnostic,****Experiment 1***Demographics of Individuals indicating no religious affiliation, being an Atheist or Agnostic*

		Nonreligious/Agnostics/Atheists	
		N	%
Age	18	9	27.3
	19	10	30.3
	20	3	9.1
	21-25	8	24.2
	26-30	2	6.0
	31-35	1	3
Gender	Female	14	42.4
	Male	17	51.5
	Other	2	6.1
Religiosity	Religious (1)		
	(2)		
	(3)	1	3.0
	(4)	5	15.2
	Not religious (5)	27	81.8
Spirituality	Spiritual (1)	1	3.0
	(2)	9	27.3
	(3)	6	18.2
	(4)	7	21.2
	Not spiritual	10	30.3
Political Affiliation	Liberal (1)	6	18.2
	Somewhat liberal (2)	8	24.2
	Neither liberal nor conservative (3)	12	36.4
	Somewhat conservative (4)	4	12.1
	Conservative (5)	3	9.1
<b>Total</b>		<b>33</b>	<b>100</b>

**Table 6: Objects categorized Holy or Transcendent among Christian Participants****Experiment 1***Number of people who categorized an object as holy or transcendent in both conditions*

Object	Holy			Transcendent		
	Systematic	Intuitive	All	Systematic	Intuitive	All
Mountains	14	13	27	25	25	50
Trees	9	12	21	28	22	50
Waterfalls	18	2	30	34	28	62
Shooting stars	12	18	30	30	31	61
Paintings	23	23	46	36	32	68
Music	28	24	52	39	29	68
Churches	58	50	108	39	35	74
Crucifixes	52	45	97	37	37	74
Icons of Saints	46	43	89	32	29	61
Altars	53	43	96	30	34	64
Bibles	58	52	110	42	37	79
Chocolate	3	6	9	10	13	23
Coffee	1	5	6	7	10	17
Soap	4	6	10	12	15	27
Bottles	1	8	9	15	12	27
Cars	1	5	6	19	15	34
Spoons	1	4	5	8	8	16
Literature	31	27	58	33	34	67
Instruments	15	19	34	25	27	52
Town halls	11	8	19	18	13	31
Theatres	7	8	15	16	15	31
Snow	10	9	19	20	22	42
Water	35	20	55	32	25	57
Tears	17	18	35	27	25	52
Cinemas	5	8	13	18	18	36
Rings	29	25	54	30	30	60
Dogs	5	10	15	17	17	34
Bugs	3	7	10	13	13	26
Mud	0	7	7	8	13	21
Football	2	5	7	12	15	27

**Table 7: Objects categorized Holy or Transcendent among Nonreligious/Atheistic/Agnostic****Participants Experiment 1***Amount of Nonreligious/Atheists/Agnostics who categorized an object as holy or transcendent*

Object	Holy	%	Transcendent	%
Mountains	10	30.30	12	36.36
Trees	9	27.27	15	45.45
Waterfalls	9	27.27	13	39.39
Shooting stars	8	24.24	22	66.67
Paintings	14	42.42	19	57.58
Music	12	36.36	22	66.67
Churches	28	84.85	17	51.52
Crucifixes	22	66.67	16	48.48
Icons of Saints	25	75.76	21	63.64
Altars	26	78.79	17	51.52
Bibles	26	78.79	13	39.39
Chocolate	5	15.15	8	24.24
Coffee	4	12.12	9	27.27
Soap	2	6.06	6	18.18
Bottles	1	3.03	7	21.21
Cars	2	6.06	6	18.18
Spoons	2	6.06	4	12.12
Literature	12	36.36	23	69.70
Instruments	6	18.18	14	42.42
Town halls	6	18.18	5	15.15
Theatres	2	6.06	11	33.33
Snow	5	15.15	10	30.30
Water	16	48.48	16	48.48
Tears	8	24.24	14	42.42
Cinemas	3	9.09	11	33.33
Rings	17	51.52	14	42.42
Dogs	7	21.21	12	36.36
Bugs	3	9.09	6	18.18
Mud	3	9.09	5	15.15
Football	2	6.06	9	27.27

**Table 8: Comparison between Christians and Nonreligious/Atheistic/Agnostic Participants****in Objects Characterized as Holy, Experiment 1***Comparison of Objects Categorized as Holy*

	Christians		NNA		Chi-Sq.	p	Phi
	N	%	N	%			
Mountains	27	23.89	10	30.30	.555	.456	.062
Trees	21	18.58	9	27.27	1.181	.277	.090
Waterfalls	30	26.55	9	27.27	.007	.934	.007
Shooting stars	30	26.55	8	24.24	.071	.791	-.022
Paintings	46	40.71	14	42.42	.031	.860	.015
Music	52	46.02	12	36.36	.967	.325	-.081
Churches	108	95.58	28	84.85	4.606	.032*	-.178
Crucifixes	97	85.84	22	66.67	6.230	.013*	-.207
Icons of Saints	89	78.76	25	75.76	.135	.714	-.030
Altars	96	84.96	26	78.79	.707	.400	-.070
Bibles	110	97.35	26	78.79	13.786	.001*	-.307
Chocolate	9	7.96	5	15.15	1.522	.217	.102
Coffee	6	5.31	4	12.12	1.875	.173	.113
Soap	10	8.85	2	6.06	.263	.608	-.042
Bottles	9	7.96	1	3.03	.975	.324	-.082
Cars	6	5.31	2	6.06	.028	.868	.014
Spoons	5	4.42	2	6.06	.150	.699	.032
Literature	58	51.33	12	36.36	2.291	.130	-.125
Instruments	34	30.09	6	18.18	1.820	.177	-.112
Town halls	19	16.81	6	18.18	.034	.854	.015
Theatres	15	13.27	2	6.06	1.292	.256	-.094
Snow	19	16.81	5	15.15	.051	.821	-.019
Water	55	48.67	16	48.48	.000	.985	-.002
Tears	35	30.97	8	24.24	.557	.455	-.062
Cinemas	13	11.50	3	9.09	.152	.696	-.032
Rings	54	47.79	17	51.52	.142	.706	.031
Dogs	15	13.27	7	21.21	1.257	.262	.093
Bugs	10	8.85	3	9.09	.002	.966	.004
Mud	7	6.19	3	9.09	.336	.562	.048
Football	7	6.19	2	6.06	.001	.978	-.002

**Table 9: Comparison between Christian and Nonreligious, Atheistic and Agnostic Participants in Objects Characterized as Transcendent, Experiment 1**

*Comparison of Objects Categorized as Transcendent*

	Christians		NNA		Chi-Sq.	p	Phi
	N	%	N	%			
Mountains	50	44.25	12	36.36	.650	.420	-.067
Trees	50	44.25	15	45.45	.015	.902	.010
Waterfalls	62	54.87	13	39.39	2.448	.118	.165
Shooting stars	61	53.98	22	66.67	1.675	.196	.107
Paintings	68	60.18	19	57.58	.072	.789	-.022
Music	68	60.18	22	66.67	.455	.500	.056
Churches	74	65.49	17	51.52	2.123	.145	-.121
Crucifixes	74	65.49	16	48.48	3.123	.077	-.146
Icons of Saints	61	53.98	21	63.64	.967	.325	.081
Altars	64	56.64	17	51.52	.707	.400	-.070
Bibles	79	69.91	13	39.39	10.206	.001*	-.264
Chocolate	23	20.35	8	24.24	.231	.631	.040
Coffee	17	15.04	9	27.27	2.609	.106	.134
Soap	27	23.89	6	18.18	.476	.490	-.057
Bottles	27	23.89	7	21.21	.103	.748	-.027
Cars	34	30.09	6	18.18	1.820	.177	-.112
Spoons	16	14.16	4	12.12	.090	.765	-.025
Literature	67	59.29	23	69.70	1.169	.280	.089
Instruments	52	46.02	14	42.42	1.820	.177	-.112
Town halls	31	27.43	5	15.15	2.074	.150	-.119
Theatres	31	27.43	11	33.33	.434	.510	.055
Snow	42	37.17	10	30.30	.525	.469	-.060
Water	57	50.44	16	48.48	.039	.843	-.016
Tears	52	46.02	14	42.42	.133	.715	-.030
Cinemas	36	31.86	11	33.33	.025	.873	.013
Rings	60	53.10	14	42.42	1.164	.281	-.089
Dogs	34	30.09	12	36.36	.466	.495	.056
Bugs	26	23.01	6	18.18	.348	.555	-.049
Mud	21	18.58	5	15.15	.206	.650	-.038
Football	27	23.89	9	27.27	.157	.692	.033



**Table 10: Participant Demographic Characteristics, Experiment 2***Demographics Christians and Nonreligious/Atheist/Agnostic Participants*

		Christians		Nonreligious/Atheist/Agnostic	
		N	%	N	%
Age	18	24	25.8	6	28.6
	19	24	25.8	6	28.6
	20	26	28.0	2	9.5
	21-25	16	17.2	4	19.0
	26-30	2	2.2	2	9.5
	31-35	1	1.1	1	4.8
Gender	Female	61	65.6	14	66.7
	Male	31	33.3	7	33.3
	Other	1	1.1		
Religiosity	Religious (1)	30	32.3	0	0
	(2)	28	30.1	1	4.8
	(3)	26	28.0	3	14.3
	(4)	5	5.4	3	14.3
	Not religious (5)	4	4.3	14	66.7
Spirituality	Spiritual (1)	42	45.2	3	14.3
	(2)	23	24.7	3	14.3
	(3)	22	23.7	6	28.6
	(4)	4	4.3	3	14.3
	Not spiritual (5)	2	2.2	6	28.6
Political Affiliation	Very liberal (1)	8	8.6	4	19.0
	(2)	13	14.0	3	14.3
	(3)	25	26.9	11	52.4
	(4)	27	29.0	3	14.3
	Very conservative (5)	20	21.5	0	0

**Table 11: Ratings of Objects and Items among Christian Participants, Experiment 2***Means and Standard Deviations for Ratings of Objects*

		Mean	SD
Mountains	... induce the feeling of awe in me	3.91	1.357
	... make me feel small	4.02	1.343
	... make me want to be a better person	2.30	1.374
	... make this world a better place	3.32	1.415
	... induce the feeling of joy in me	3.61	1.390
	... make me feel happy	3.58	1.370
	... reflect purity	2.95	1.455
	... are without contamination	2.40	1.360
	... connect me to other people	2.46	1.354
	... are important in my culture	2.44	1.264
	... are often used or referred to in religious rituals	2.51	1.486
	... are important in religious teachings	2.56	1.392
	Trees	... induce the feeling of awe in me	3.16
... make me feel small		3.53	1.353
... make me want to be a better person		2.53	1.393
... make this world a better place		4.09	1.228
... induce the feeling of joy in me		3.13	1.416
... make me feel happy		3.14	1.419
... reflect purity		3.20	1.477
... are without contamination		2.77	1.360
... connect me to other people		2.51	1.369
... are important in my culture		3.20	1.361
... are often used or referred to in religious rituals		2.60	1.343
... are important in religious teachings		2.61	1.366
Waterfalls		... induce the feeling of awe in me	3.97
	... make me feel small	3.40	1.423
	... make me want to be a better person	2.56	1.355
	... make this world a better place	3.53	1.296
	... induce the feeling of joy in me	3.91	1.139
	... make me feel happy	3.95	1.164
	... reflect purity	3.65	1.316
	... are without contamination	2.78	1.428
	... connect me to other people	2.58	1.393
	... are important in my culture	2.20	1.147
	... are often used or referred to in religious rituals	2.17	1.265
	... are important in religious teachings	2.12	1.284

Shooting stars	... induce the feeling of awe in me	3.95	1.174
	... make me feel small	3.34	1.529
	... make me want to be a better person	2.46	1.356
	... make this world a better place	2.70	1.381
	... induce the feeling of joy in me	3.72	1.304
	... make me feel happy	3.75	1.213
	... reflect purity	2.66	1.393
	... are without contamination	2.68	1.408
	... connect me to other people	2.61	1.383
	... are important in my culture	2.18	1.160
	... are often used or referred to in religious rituals	2.16	1.132
... are important in religious teachings	2.02	1.216	
Paintings	... induce the feeling of awe in me	3.53	1.290
	... make me feel small	2.41	1.408
	... make me want to be a better person	2.65	1.380
	... make this world a better place	3.50	1.305
	... induce the feeling of joy in me	3.51	1.307
	... make me feel happy	3.47	1.307
	... reflect purity	2.97	1.362
	... are without contamination	2.43	1.394
	... connect me to other people	3.19	1.377
	... are important in my culture	3.24	1.394
	... are often used or referred to in religious rituals	3.28	1.305
... are important in religious teachings	3.34	1.379	
Music	... induces the feeling of awe in me	3.95	1.117
	... makes me feel small	2.19	1.424
	... makes me want to be a better person	3.68	1.278
	... makes this world a better place	4.34	.938
	... induces the feeling of joy in me	4.40	.922
	... makes me feel happy	4.47	.892
	... reflects purity	2.96	1.429
	... is without contamination	2.63	1.458
	... connects me to other people	4.34	.972
	... is important in my culture	4.34	1.062
	... is often used or referred to in religious rituals	4.01	1.193
... is important in religious teachings	3.86	1.176	
Churches	... induce the feeling of awe in me	4.01	1.238
	... make me feel small	2.92	1.583
	... make me want to be a better person	4.35	.996
	... make this world a better place	4.31	.989
	... induce the feeling of joy in me	4.24	1.077
	... make me feel happy	4.15	1.032
	... reflect purity	4.19	1.096
	... are without contamination	3.22	1.545
	... connect me to other people	4.40	.968
	... are important in my culture	4.57	.852
	... are often used or referred to in religious rituals	4.74	.709
... are important in religious teachings	4.61	.860	

Crucifixes	... induce the feeling of awe in me	2.93	1.497
	... make me feel small	2.48	1.544
	... make me want to be a better person	3.18	1.540
	... make this world a better place	2.57	1.401
	... induce the feeling of joy in me	2.61	1.445
	... make me feel happy	2.67	1.383
	... reflect purity	3.43	1.521
	... are without contamination	2.77	1.601
	... connect me to other people	2.78	1.481
	... are important in my culture	3.37	1.503
	... are often used or referred to in religious rituals	3.97	1.478
... are important in religious teachings	4.02	1.398	
Icons of Saints	... induce the feeling of awe in me	2.87	1.376
	... make me feel small	2.46	1.401
	... make me want to be a better person	2.95	1.425
	... make this world a better place	2.97	1.320
	... induce the feeling of joy in me	2.85	1.273
	... make me feel happy	2.78	1.272
	... reflect purity	3.48	1.377
	... are without contamination	3.02	1.414
	... connect me to other people	2.76	1.294
	... are important in my culture	3.01	1.337
	... are often used or referred to in religious rituals	3.86	1.330
... are important in religious teachings	3.68	1.357	
Altars	... induce the feeling of awe in me	3.08	1.328
	... make me feel small	2.30	1.273
	... make me want to be a better person	3.27	1.468
	... make this world a better place	3.27	1.319
	... induce the feeling of joy in me	3.22	1.315
	... make me feel happy	3.18	1.317
	... reflect purity	3.79	1.269
	... are without contamination	3.21	1.346
	... connect me to other people	3.36	1.314
	... are important in my culture	3.87	1.131
	... are often used or referred to in religious rituals	4.30	1.126
... are important in religious teachings	4.23	1.120	
Bibles	... induce the feeling of awe in me	4.02	1.207
	... make me feel small	3.13	1.650
	... make me want to be a better person	4.32	.980
	... make this world a better place	4.22	1.082
	... induce the feeling of joy in me	4.13	1.024
	... make me feel happy	4.14	1.075
	... reflect purity	4.35	.996
	... are without contamination	3.84	1.338
	... connect me to other people	4.25	1.070
	... are important in my culture	4.46	.962
	... are often used or referred to in religious rituals	4.71	.672
... are important in religious teachings	4.77	.628	

Chocolate	... induces the feeling of awe in me	3.07	1.496
	... makes me feel small	1.55	1.067
	... makes me want to be a better person	2.30	1.389
	... makes this world a better place	3.63	1.372
	... induces the feeling of joy in me	3.87	1.260
	... makes me feel happy	3.92	1.207
	... reflects purity	2.02	1.204
	... is without contamination	2.53	1.425
	... connects me to other people	2.82	1.444
	... is important in my culture	2.91	1.466
	... is often used or referred to in religious rituals	1.76	1.180
... is important in religious teachings	1.61	1.129	
Coffee	... induces the feeling of awe in me	2.28	1.462
	... makes me feel small	1.47	.916
	... makes me want to be a better person	2.10	1.399
	... makes this world a better place	3.09	1.517
	... induces the feeling of joy in me	2.88	1.573
	... makes me feel happy	3.04	1.546
	... reflects purity	1.72	1.077
	... is without contamination	1.99	1.247
	... connects me to other people	2.84	1.484
	... is important in my culture	3.04	1.560
	... is often used or referred to in religious rituals	1.51	.880
... is important in religious teachings	1.51	.940	
Soap	... induces the feeling of awe in me	2.22	1.203
	... makes me feel small	1.42	.815
	... makes me want to be a better person	2.14	1.287
	... makes this world a better place	3.71	1.544
	... induces the feeling of joy in me	2.81	1.452
	... makes me feel happy	3.17	1.323
	... reflects purity	3.39	1.490
	... is without contamination	3.34	1.543
	... connects me to other people	1.99	1.227
	... is important in my culture	3.50	1.449
	... is often used or referred to in religious rituals	1.89	1.130
... is important in religious teachings	1.91	1.192	
Bottles	... induce the feeling of awe in me	1.49	.943
	... make me feel small	1.37	.722
	... make me want to be a better person	1.45	.873
	... make this world a better place	2.04	1.283
	... induce the feeling of joy in me	1.62	1.036
	... make me feel happy	1.63	1.013
	... reflect purity	1.51	1.011
	... are without contamination	1.57	.909
	... connect me to other people	1.84	1.189
	... are important in my culture	2.12	1.333
	... are often used or referred to in religious rituals	1.42	.788
... are important in religious teachings	1.48	.845	

Cars	... induce the feeling of awe in me	2.76	1.425
	... make me feel small	2.32	1.309
	... make me want to be a better person	1.97	1.114
	... make this world a better place	3.42	1.277
	... induce the feeling of joy in me	3.08	1.447
	... make me feel happy	3.30	1.282
	... reflect purity	1.60	.961
	... are without contamination	1.83	1.023
	... connect me to other people	3.54	1.329
	... are important in my culture	3.64	1.538
... are often used or referred to in religious rituals	1.38	.837	
... are important in religious teachings	1.34	.734	
Spoons	... induce the feeling of awe in me	1.60	1.134
	... make me feel small	1.43	.993
	... make me want to be a better person	1.56	1.047
	... make this world a better place	2.71	1.592
	... induce the feeling of joy in me	1.90	1.286
	... make me feel happy	1.96	1.250
	... reflect purity	1.67	1.077
	... are without contamination	1.76	1.174
	... connect me to other people	1.77	1.181
	... are important in my culture	2.89	1.641
... are often used or referred to in religious rituals	1.62	1.062	
... are important in religious teachings	1.58	1.102	
Literature	... induces the feeling of awe in me	3.21	1.457
	... makes me feel small	2.32	1.414
	... makes me want to be a better person	3.14	1.426
	... makes this world a better place	3.78	1.265
	... induces the feeling of joy in me	3.23	1.446
	... makes me feel happy	3.30	1.373
	... reflects purity	2.76	1.321
	... is without contamination	2.29	1.319
	... connects me to other people	3.58	1.320
	... is important in my culture	3.87	1.157
... is often used or referred to in religious rituals	3.76	1.345	
... is important in religious teachings	3.88	1.265	
Instruments	... induce the feeling of awe in me	3.37	1.342
	... make me feel small	1.89	1.165
	... make me want to be a better person	2.44	1.339
	... make this world a better place	3.71	1.125
	... induce the feeling of joy in me	3.70	1.258
	... make me feel happy	3.65	1.213
	... reflect purity	2.49	1.227
	... are without contamination	2.49	1.282
	... connect me to other people	3.42	1.484
	... are important in my culture	3.53	1.362
... are often used or referred to in religious rituals	3.55	1.354	
... are important in religious teachings	3.28	1.305	

Town halls	... induce the feeling of awe in me	1.69	.967
	... make me feel small	1.85	1.073
	... make me want to be a better person	1.87	1.055
	... make this world a better place	2.57	1.155
	... induce the feeling of joy in me	1.76	1.026
	... make me feel happy	1.80	.984
	... reflect purity	1.63	.934
	... are without contamination	1.77	.985
	... connect me to other people	2.72	1.362
	... are important in my culture	2.46	1.315
Theatres	... induce the feeling of awe in me	2.74	1.366
	... make me feel small	2.24	1.362
	... make me want to be a better person	2.00	1.139
	... make this world a better place	2.83	1.272
	... induce the feeling of joy in me	3.15	1.292
	... make me feel happy	3.28	1.304
	... reflect purity	1.72	.918
	... are without contamination	1.80	.917
	... connect me to other people	3.27	1.310
	... are important in my culture	2.68	1.332
Snow	... induces the feeling of awe in me	3.55	1.387
	... makes me feel small	1.99	1.290
	... makes me want to be a better person	1.80	1.079
	... makes this world a better place	3.00	1.445
	... induces the feeling of joy in me	3.57	1.440
	... makes me feel happy	3.63	1.405
	... reflects purity	3.71	1.387
	... is without contamination	2.60	1.475
	... connects me to other people	2.72	1.543
	... is important in my culture	2.06	1.232
Water	... induces the feeling of awe in me	3.14	1.403
	... makes me feel small	3.03	1.570
	... makes me want to be a better person	2.74	1.413
	... makes this world a better place	4.12	1.232
	... induces the feeling of joy in me	3.40	1.312
	... makes me feel happy	3.65	1.239
	... reflects purity	4.28	1.036
	... is without contamination	2.53	1.307
	... connects me to other people	3.30	1.428
	... is important in my culture	4.18	1.021
... is often used or referred to in religious rituals	4.18	1.132	
... is important in religious teachings	3.99	1.118	

Tears	... induce the feeling of awe in me	2.43	1.346
	... make me feel small	2.47	1.508
	... make me want to be a better person	2.39	1.376
	... make this world a better place	2.24	1.174
	... induce the feeling of joy in me	1.81	.958
	... make me feel happy	2.01	1.098
	... reflect purity	2.55	1.463
	... are without contamination	2.26	1.274
	... connect me to other people	2.53	1.290
	... are important in my culture	2.39	1.277
	... are often used or referred to in religious rituals	2.20	1.273
... are important in religious teachings	2.16	1.173	
Cinemas	... induce the feeling of awe in me	2.98	1.414
	... make me feel small	2.09	1.298
	... make me want to be a better person	2.07	1.117
	... make this world a better place	3.04	1.222
	... induce the feeling of joy in me	3.60	1.237
	... make me feel happy	3.68	1.167
	... reflect purity	1.79	.978
	... are without contamination	1.84	1.067
	... connect me to other people	3.30	1.256
	... are important in my culture	3.12	1.405
	... are often used or referred to in religious rituals	1.58	.892
... are important in religious teachings	1.61	.901	
Rings	... induce the feeling of awe in me	3.20	1.351
	... make me feel small	1.49	.858
	... make me want to be a better person	2.44	1.462
	... make this world a better place	2.47	1.425
	... induce the feeling of joy in me	3.29	1.347
	... make me feel happy	3.30	1.264
	... reflect purity	3.39	1.350
	... are without contamination	2.30	1.340
	... connect me to other people	3.10	1.498
	... are important in my culture	3.74	1.358
	... are often used or referred to in religious rituals	3.29	1.432
... are important in religious teachings	2.91	1.442	
Dogs	... induce the feeling of awe in me	3.90	1.234
	... make me feel small	1.65	1.042
	... make me want to be a better person	3.63	1.458
	... make this world a better place	4.42	.925
	... induce the feeling of joy in me	4.40	1.034
	... make me feel happy	4.46	.927
	... reflect purity	3.15	1.581
	... are without contamination	2.63	1.413
	... connect me to other people	4.01	1.147
	... are important in my culture	3.50	1.441
	... are often used or referred to in religious rituals	1.72	1.087
... are important in religious teachings	1.78	1.082	



Bugs	... induce the feeling of awe in me	1.59	1.096
	... make me feel small	1.26	.750
	... make me want to be a better person	1.34	.773
	... make this world a better place	2.29	1.441
	... induce the feeling of joy in me	1.30	.704
	... make me feel happy	1.34	.760
	... reflect purity	1.31	.691
	... are without contamination	1.38	.846
	... connect me to other people	1.45	.903
	... are important in my culture	1.71	1.221
	... are often used or referred to in religious rituals	1.60	1.044
... are important in religious teachings	1.58	.936	
Mud	... induces the feeling of awe in me	1.46	.951
	... makes me feel small	1.27	.678
	... makes me want to be a better person	1.39	.847
	... makes this world a better place	1.88	1.160
	... induces the feeling of joy in me	1.57	.971
	... makes me feel happy	1.61	1.000
	... reflects purity	1.38	.850
	... is without contamination	1.44	.878
	... connects me to other people	1.57	1.015
	... is important in my culture	1.60	1.002
	... is often used or referred to in religious rituals	1.67	1.036
... is important in religious teachings	1.58	.913	
Football	... induces the feeling of awe in me	2.42	1.462
	... makes me feel small	1.94	1.317
	... makes me want to be a better person	1.80	1.203
	... makes this world a better place	2.78	1.405
	... induces the feeling of joy in me	2.99	1.507
	... makes me feel happy	3.12	1.495
	... reflects purity	1.60	.991
	... is without contamination	1.80	1.082
	... connects me to other people	3.51	1.404
	... is important in my culture	3.58	1.520
	... is often used or referred to in religious rituals	1.31	.794
... is important in religious teachings	1.30	.722	

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**Table 12: Ratings of Objects and Items among Nonreligious/Atheistic/Agnostic****Participants, Experiment 2***Means and Standard Deviations for Ratings of Objects*

		Mean	SD
Mountains	... induce the feeling of awe in me	4.05	1.117
	... make me feel small	4.52	.981
	... make me want to be a better person	2.67	1.461
	... make this world a better place	3.38	1.431
	... induce the feeling of joy in me	3.48	1.601
	... make me feel happy	3.62	1.465
	... reflect purity	3.14	1.590
	... are without contamination	2.95	1.596
	... connect me to other people	3.05	1.499
	... are important in my culture	2.62	1.499
	... are often used or referred to in religious rituals	2.48	1.289
	... are important in religious teachings	2.48	1.250
	Trees	... induce the feeling of awe in me	3.67
... make me feel small		3.67	1.528
... make me want to be a better person		2.67	1.494
... make this world a better place		4.38	1.244
... induce the feeling of joy in me		3.52	1.250
... make me feel happy		3.52	1.289
... reflect purity		3.19	1.601
... are without contamination		2.52	1.601
... connect me to other people		2.90	1.670
... are important in my culture		3.05	1.431
... are often used or referred to in religious rituals		2.05	1.117
... are important in religious teachings		3.67	1.317
Waterfalls		... induce the feeling of awe in me	3.90
	... make me feel small	3.76	1.221
	... make me want to be a better person	2.76	1.670
	... make this world a better place	3.29	1.554
	... induce the feeling of joy in me	3.71	1.347
	... make me feel happy	3.86	1.493
	... reflect purity	3.57	1.502
	... are without contamination	2.52	1.569
	... connect me to other people	2.76	1.446
	... are important in my culture	2.29	1.347
	... are often used or referred to in religious rituals	2.24	1.261
	... are important in religious teachings	2.19	1.289

Shooting stars	... induce the feeling of awe in me	4.25	1.209
	... make me feel small	4.10	1.338
	... make me want to be a better person	2.90	1.609
	... make this world a better place	3.10	1.609
	... induce the feeling of joy in me	4.05	1.359
	... make me feel happy	4.05	1.431
	... reflect purity	3.05	1.499
	... are without contamination	3.10	1.513
	... connect me to other people	3.10	1.546
	... are important in my culture	2.48	1.365
	... are often used or referred to in religious rituals	2.14	1.493
... are important in religious teachings	2.25	1.333	
Paintings	... induce the feeling of awe in me	3.76	1.091
	... make me feel small	2.05	1.161
	... make me want to be a better person	2.52	1.365
	... make this world a better place	3.90	1.136
	... induce the feeling of joy in me	3.76	1.044
	... make me feel happy	3.71	1.231
	... reflect purity	2.95	1.322
	... are without contamination	2.33	1.317
	... connect me to other people	3.67	1.197
	... are important in my culture	3.24	1.261
	... are often used or referred to in religious rituals	3.19	1.289
... are important in religious teachings	2.81	1.401	
Music	... induces the feeling of awe in me	4.14	.964
	... makes me feel small	2.48	1.504
	... makes me want to be a better person	3.24	1.513
	... makes this world a better place	4.29	1.271
	... induces the feeling of joy in me	4.38	.973
	... makes me feel happy	4.57	.746
	... reflects purity	2.86	1.352
	... is without contamination	2.33	1.317
	... connects me to other people	4.71	.644
	... is important in my culture	4.43	1.028
	... is often used or referred to in religious rituals	3.48	1.365
... is important in religious teachings	2.95	1.658	
Churches	... induce the feeling of awe in me	2.14	1.153
	... make me feel small	2.00	1.170
	... make me want to be a better person	2.19	1.470
	... make this world a better place	2.29	1.384
	... induce the feeling of joy in me	2.05	1.284
	... make me feel happy	2.19	1.250
	... reflect purity	2.76	1.446
	... are without contamination	1.86	1.424
	... connect me to other people	2.67	1.592
	... are important in my culture	2.86	1.526
	... are often used or referred to in religious rituals	4.52	.928
... are important in religious teachings	4.52	.814	

Crucifixes	... induce the feeling of awe in me	1.62	.973
	... make me feel small	1.76	1.136
	... make me want to be a better person	1.86	1.014
	... make this world a better place	2.14	1.315
	... induce the feeling of joy in me	1.80	1.005
	... make me feel happy	1.76	.995
	... reflect purity	2.76	1.578
	... are without contamination	2.19	1.537
	... connect me to other people	2.10	1.179
	... are important in my culture	2.38	1.322
	... are often used or referred to in religious rituals	4.10	1.411
... are important in religious teachings	4.24	1.261	
Icons of Saints	... induce the feeling of awe in me	1.67	.796
	... make me feel small	1.95	1.244
	... make me want to be a better person	1.62	.921
	... make this world a better place	2.05	.973
	... induce the feeling of joy in me	1.81	.928
	... make me feel happy	1.95	.921
	... reflect purity	2.67	1.317
	... are without contamination	1.76	.944
	... connect me to other people	1.86	.964
	... are important in my culture	1.86	.854
	... are often used or referred to in religious rituals	4.19	1.167
... are important in religious teachings	3.48	1.537	
Altars	... induce the feeling of awe in me	1.95	1.203
	... make me feel small	1.76	1.044
	... make me want to be a better person	1.76	1.044
	... make this world a better place	2.00	1.140
	... induce the feeling of joy in me	1.90	1.044
	... make me feel happy	1.86	1.014
	... reflect purity	2.81	1.436
	... are without contamination	2.00	1.214
	... connect me to other people	2.19	1.289
	... are important in my culture	2.48	1.365
	... are often used or referred to in religious rituals	4.10	1.165
... are important in religious teachings	3.67	1.390	
Bibles	... induce the feeling of awe in me	1.52	.981
	... make me feel small	1.86	1.424
	... make me want to be a better person	1.81	1.250
	... make this world a better place	2.19	1.569
	... induce the feeling of joy in me	1.81	1.289
	... make me feel happy	1.76	1.221
	... reflect purity	2.43	1.502
	... are without contamination	1.81	1.365
	... connect me to other people	1.95	1.359
	... are important in my culture	2.43	1.660
	... are often used or referred to in religious rituals	4.19	1.436
... are important in religious teachings	4.05	1.317	

Chocolate	... induces the feeling of awe in me	2.81	1.601
	... makes me feel small	2.00	1.581
	... makes me want to be a better person	2.48	1.692
	... makes this world a better place	3.14	1.711
	... induces the feeling of joy in me	4.05	1.161
	... makes me feel happy	4.00	1.140
	... reflects purity	2.43	1.660
	... is without contamination	2.48	1.504
	... connects me to other people	3.29	1.454
	... is important in my culture	3.19	1.470
	... is often used or referred to in religious rituals	1.86	1.424
... is important in religious teachings	1.81	1.470	
Coffee	... induces the feeling of awe in me	2.05	1.359
	... makes me feel small	1.33	.966
	... makes me want to be a better person	1.71	1.189
	... makes this world a better place	2.71	1.707
	... induces the feeling of joy in me	2.86	1.682
	... makes me feel happy	3.05	1.687
	... reflects purity	1.38	.973
	... is without contamination	1.76	.995
	... connects me to other people	2.57	1.630
	... is important in my culture	2.52	1.721
	... is often used or referred to in religious rituals	1.33	.966
... is important in religious teachings	1.24	.625	
Soap	... induces the feeling of awe in me	1.86	1.062
	... makes me feel small	1.29	.463
	... makes me want to be a better person	2.05	1.161
	... makes this world a better place	3.57	1.720
	... induces the feeling of joy in me	2.52	1.289
	... makes me feel happy	3.10	1.513
	... reflects purity	3.38	1.499
	... is without contamination	3.14	1.590
	... connects me to other people	2.00	1.183
	... is important in my culture	3.10	1.670
	... is often used or referred to in religious rituals	1.95	1.117
... is important in religious teachings	1.65	1.040	
Bottles	... induce the feeling of awe in me	1.57	.926
	... make me feel small	1.33	.577
	... make me want to be a better person	1.43	.811
	... make this world a better place	2.19	1.436
	... induce the feeling of joy in me	1.81	1.327
	... make me feel happy	2.05	1.356
	... reflect purity	1.48	.680
	... are without contamination	1.48	.602
	... connect me to other people	1.81	1.250
	... are important in my culture	2.52	1.401
	... are often used or referred to in religious rituals	1.52	.814
... are important in religious teachings	1.52	.814	

Cars	... induce the feeling of awe in me	2.86	1.389
	... make me feel small	2.19	1.289
	... make me want to be a better person	1.95	1.117
	... make this world a better place	3.48	1.470
	... induce the feeling of joy in me	3.00	1.449
	... make me feel happy	3.10	1.546
	... reflect purity	1.52	.750
	... are without contamination	1.57	.746
	... connect me to other people	3.38	1.596
	... are important in my culture	3.48	1.662
... are often used or referred to in religious rituals	1.29	.561	
... are important in religious teachings	1.29	.561	
Spoons	... induce the feeling of awe in me	1.81	1.209
	... make me feel small	1.24	.539
	... make me want to be a better person	1.48	.981
	... make this world a better place	2.81	1.662
	... induce the feeling of joy in me	2.10	1.411
	... make me feel happy	2.50	1.606
	... reflect purity	1.52	.981
	... are without contamination	1.76	1.300
	... connect me to other people	1.67	1.065
	... are important in my culture	2.95	1.658
... are often used or referred to in religious rituals	1.29	.561	
... are important in religious teachings	1.24	.539	
Literature	... induces the feeling of awe in me	2.70	1.218
	... makes me feel small	2.29	1.271
	... makes me want to be a better person	2.57	1.165
	... makes this world a better place	4.00	1.049
	... induces the feeling of joy in me	3.00	1.225
	... makes me feel happy	2.90	1.300
	... reflects purity	2.57	1.287
	... is without contamination	2.00	1.049
	... connects me to other people	3.38	1.203
	... is important in my culture	3.48	1.209
... is often used or referred to in religious rituals	3.48	1.289	
... is important in religious teachings	3.52	1.123	
Instruments	... induce the feeling of awe in me	3.43	1.434
	... make me feel small	2.05	1.431
	... make me want to be a better person	2.43	1.469
	... make this world a better place	4.10	1.179
	... induce the feeling of joy in me	3.57	1.363
	... make me feel happy	3.81	1.327
	... reflect purity	2.24	1.261
	... are without contamination	2.57	1.630
	... connect me to other people	3.33	1.461
	... are important in my culture	3.67	1.426
... are often used or referred to in religious rituals	3.14	1.389	
... are important in religious teachings	2.76	1.446	

Town halls	... induce the feeling of awe in me	1.67	.966
	... make me feel small	1.86	1.014
	... make me want to be a better person	1.71	.956
	... make this world a better place	2.52	1.401
	... induce the feeling of joy in me	1.67	.966
	... make me feel happy	1.71	.956
	... reflect purity	1.52	.814
	... are without contamination	1.57	.746
	... connect me to other people	2.33	1.426
	... are important in my culture	2.38	1.284
... are often used or referred to in religious rituals	1.43	.746	
... are important in religious teachings	1.48	.814	
Theatres	... induce the feeling of awe in me	3.35	1.461
	... make me feel small	2.52	1.504
	... make me want to be a better person	2.57	1.434
	... make this world a better place	3.52	1.250
	... induce the feeling of joy in me	3.90	1.179
	... make me feel happy	3.85	1.268
	... reflect purity	2.14	1.236
	... are without contamination	2.24	1.261
	... connect me to other people	3.62	1.203
	... are important in my culture	3.48	1.436
... are often used or referred to in religious rituals	2.10	1.221	
... are important in religious teachings	2.00	1.265	
Snow	... induces the feeling of awe in me	3.43	1.805
	... makes me feel small	1.90	1.411
	... makes me want to be a better person	2.25	1.517
	... makes this world a better place	3.19	1.601
	... induces the feeling of joy in me	3.71	1.678
	... makes me feel happy	3.81	1.692
	... reflects purity	3.33	1.683
	... is without contamination	2.57	1.535
	... connects me to other people	3.05	1.596
	... is important in my culture	2.14	1.389
... is often used or referred to in religious rituals	1.71	1.384	
... is important in religious teachings	1.67	1.317	
Water	... induces the feeling of awe in me	2.81	1.504
	... makes me feel small	2.67	1.560
	... makes me want to be a better person	2.81	1.401
	... makes this world a better place	4.24	.944
	... induces the feeling of joy in me	3.14	1.389
	... makes me feel happy	3.33	1.354
	... reflects purity	3.67	1.426
	... is without contamination	2.48	1.470
	... connects me to other people	3.00	1.304
	... is important in my culture	3.81	1.504
... is often used or referred to in religious rituals	3.71	1.347	
... is important in religious teachings	3.52	1.167	

Tears	... induce the feeling of awe in me	2.10	1.261
	... make me feel small	2.43	1.326
	... make me want to be a better person	2.62	1.284
	... make this world a better place	2.05	1.203
	... induce the feeling of joy in me	1.86	1.062
	... make me feel happy	1.76	1.091
	... reflect purity	2.43	1.599
	... are without contamination	2.38	1.465
	... connect me to other people	3.00	1.378
	... are important in my culture	2.38	1.284
... are often used or referred to in religious rituals	1.81	1.250	
... are important in religious teachings	1.71	1.056	
Cinemas	... induce the feeling of awe in me	3.48	1.470
	... make me feel small	2.48	1.601
	... make me want to be a better person	2.43	1.535
	... make this world a better place	3.67	1.426
	... induce the feeling of joy in me	4.00	1.140
	... make me feel happy	4.20	.951
	... reflect purity	1.86	1.195
	... are without contamination	2.05	1.203
	... connect me to other people	3.81	1.209
	... are important in my culture	3.71	1.454
... are often used or referred to in religious rituals	1.62	1.071	
... are important in religious teachings	1.62	.805	
Rings	... induce the feeling of awe in me	2.20	1.436
	... make me feel small	1.45	.759
	... make me want to be a better person	2.21	1.273
	... make this world a better place	2.10	1.252
	... induce the feeling of joy in me	2.30	1.490
	... make me feel happy	2.40	1.465
	... reflect purity	2.50	1.573
	... are without contamination	1.95	1.026
	... connect me to other people	2.40	1.635
	... are important in my culture	2.80	1.673
... are often used or referred to in religious rituals	2.60	1.603	
... are important in religious teachings	2.40	1.392	
Dogs	... induce the feeling of awe in me	4.10	1.411
	... make me feel small	1.81	1.327
	... make me want to be a better person	4.05	1.499
	... make this world a better place	4.38	1.117
	... induce the feeling of joy in me	4.52	1.078
	... make me feel happy	4.57	.870
	... reflect purity	3.57	1.748
	... are without contamination	3.14	1.797
	... connect me to other people	4.38	1.024
	... are important in my culture	3.76	1.513
... are often used or referred to in religious rituals	1.95	1.322	
... are important in religious teachings	2.10	1.480	



Bugs	... induce the feeling of awe in me	1.67	1.354
	... make me feel small	1.29	.717
	... make me want to be a better person	1.24	.889
	... make this world a better place	2.00	1.449
	... induce the feeling of joy in me	1.29	.902
	... make me feel happy	1.38	.973
	... reflect purity	1.29	.784
	... are without contamination	1.43	.926
	... connect me to other people	1.43	1.207
	... are important in my culture	1.48	1.030
	... are often used or referred to in religious rituals	1.24	.539
... are important in religious teachings	1.14	.478	
Mud	... induces the feeling of awe in me	1.43	.870
	... makes me feel small	1.48	.873
	... makes me want to be a better person	1.67	1.238
	... makes this world a better place	2.05	1.359
	... induces the feeling of joy in me	1.57	1.076
	... makes me feel happy	1.57	1.028
	... reflects purity	1.76	1.261
	... is without contamination	1.38	.740
	... connects me to other people	1.48	.928
	... is important in my culture	1.67	1.278
	... is often used or referred to in religious rituals	1.43	.811
... is important in religious teachings	1.29	.717	
Football	... induces the feeling of awe in me	2.43	1.469
	... makes me feel small	1.52	1.078
	... makes me want to be a better person	2.10	1.480
	... makes this world a better place	2.43	1.535
	... induces the feeling of joy in me	2.62	1.465
	... makes me feel happy	2.86	1.459
	... reflects purity	1.67	1.155
	... is without contamination	1.86	1.236
	... connects me to other people	3.33	1.653
	... is important in my culture	3.57	1.660
	... is often used or referred to in religious rituals	1.38	.973
... is important in religious teachings	1.52	1.030	

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**Table 13: Correlations between Factors and Holiness and Transcendence Christians, Experiment 1 and 2**

*Correlations between Factors and Holiness and Transcendence*

		<b>Holy</b>		<b>Transcendent Condition</b>		<b>Transcendent Order</b>	
		Intuitive	System.	Intuitive	System.	First	Second
<b>Awe</b>	Corr.	.433*	.506**	.721**	.756**	.806**	.665**
	Sig.	.017	.004	.000	.000	.000	.000
<b>Elevation</b>	Corr.	.595**	.633**	.619**	.670**	.688**	.595**
	Sig.	.001	.000	.000	.000	.000	.001
<b>Joy</b>	Corr.	.278	.330	.486**	.488**	.577**	.401*
	Sig.	.137	.075	.006	.006	.001	.028
<b>Purity</b>	Corr.	.691**	.764**	.763**	.741**	.770**	.714**
	Sig.	.000	.000	.000	.000	.000	.000
<b>Culture</b>	Corr.	.569**	.587**	.524**	.560**	.563**	.512**
	Sig.	.001	.001	.003	.001	.001	.004
<b>Religion</b>	Corr.	.908**	.938**	.869**	.858**	.805**	.885**
	Sig.	.000	.000	.000	.000	.000	.000

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

**Table 14: Correlations between Factors and Holiness and Transcendence****Nonreligious/Atheistic/Agnostic Participants, Experiment 1 and 2***Correlations between Factors and Holiness and Transcendence*

		<b>Holy</b>	<b>Transcendence</b>
<b>Awe</b>	Corr.	-.077	.437*
	Sig.	.686	.016
<b>Elevation</b>	Corr.	-.172	.359
	Sig.	.362	.051
<b>Joy</b>	Corr.	-.292	.260
	Sig.	.117	.165
<b>Purity</b>	Corr.	.233	.479**
	Sig.	.215	.007
<b>Culture</b>	Corr.	-.152	.331
	Sig.	.424	.074
<b>Religion</b>	Corr.	.919**	.743**
	Sig.	.000	.000
<b>Holy</b>	Corr.	1	.644**
	Sig.		.000
<b>Transcendence</b>	Corr.	.644**	1
	Sig.	.000	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

**Table 15: Correlations among Factors for Objects described by Christians, Experiment 1****and 2**

*Correlations among factors*

		Awe	Elevation	Joy	Purity	Culture	Religion
Awe	Correlation	1	.688**	.763**	.695**	.475**	.543**
	Sig. (2-tailed)		.000	.000	.000	.008	.002
Elevation	Correlation	.688**	1	.797**	.770**	.835**	.720**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
Joy	Correlation	.763**	.797**	1	.617**	.714**	.412*
	Sig. (2-tailed)	.000	.000		.000	.000	.024
Purity	Correlation	.695**	.770**	.617**	1	.535**	.758**
	Sig. (2-tailed)	.000	.000	.000		.002	.000
Culture	Correlation	.475**	.835**	.714**	.535**	1	.654**
	Sig. (2-tailed)	.008	.000	.000	.002		.000
Religion	Correlation	.543**	.720**	.412*	.758**	.654**	1
	Sig. (2-tailed)	.002	.000	.024	.000	.000	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

**Table 16: Correlations among Factors for Objects described by  
Nonreligious/Atheistic/Agnostic Participants, Experiment 1 and 2**

*Correlations among factors*

		Awe	Elevation	Joy	Purity	Culture	Religion
Awe	Correlation	1	.750**	.784**	.640**	.550**	.042
	Sig. (2-tailed)		.000	.000	.000	.002	.824
Elevation	Correlation	.750**	1	.882**	.676**	.838**	.050
	Sig. (2-tailed)	.000		.000	.000	.000	.791
Joy	Correlation	.784**	.882**	1	.584**	.804**	-.102
	Sig. (2-tailed)	.000	.000		.001	.000	.590
Purity	Correlation	.640**	.676**	.584**	1	.367*	.343
	Sig. (2-tailed)	.000	.000	.00		.046	.063
Culture	Correlation	.550**	.838**	.804**	.367*	1	.069
	Sig. (2-tailed)	.002	.000	.000	.046		.715
Religion	Correlation	.042	.050	-.102	.343	.069	1
	Sig. (2-tailed)	.824	.791	.590	.063	.715	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

**Table 17: Factor Loadings, Experiment 1 and 2***Rotated Component Matrix - Christians*

	Component		
	1	2	3
... induce the feeling of awe in me	.690	.247	.636
... make me feel small	.162	.206	.835
... make me want to be a better person	.541	.726	.268
... make this world a better place	.782	.344	.231
... induce the feeling of joy in me	.882	.157	.406
... make me feel happy	.899	.133	.384
... reflect purity	.272	.665	.584
... are without contamination	.352	.614	.532
... connect me to other people	.833	.420	-.030
... are important in my culture	.642	.679	-.167
... are often used or referred to in religious rituals	.187	.924	.237
... are important in religious teachings	.187	.927	.249

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.<sup>a</sup>*Rotated Component Matrix – Nonreligious/Atheists/Agnostics*

	Component		
	1	2	3
... induce the feeling of awe in me	.679	.666	-.101
... make me feel small	.148	.819	.018
... make me want to be a better person	.693	.597	.127
... make this world a better place	.820	.369	-.022
... induce the feeling of joy in me	.808	.518	-.130
... make me feel happy	.815	.492	-.163
... reflect purity	.181	.771	.476
... are without contamination	.374	.803	.080
... connect me to other people	.906	.253	.024
... are important in my culture	.940	-.087	.144
... are often used or referred to in religious rituals	-.017	.065	.984
... are important in religious teachings	-.017	.087	.983

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.<sup>a</sup>

**Table 18: Linear Regressions for Sample of Christians, Experiment 1 and 2***Linear Regression Holy*

Variable	Intuitive		Systematic	
	$\beta$	Sig.	$\beta$	Sig.
Factor 1: Joy and connectivity	.070	.368	.090	.146
Factory 2: Religion (and Purity)	.900	.000	.908	.000
Factor 3: Awe	.187	.021	.270	.000

*Linear Regression Transcendence*

Variable	Intuitive		Systematic	
	$\beta$	Sig.	$\beta$	Sig.
Factor 1: Joy and connectivity	.185	.045	.220	.020
Factory 2: Religion (and Purity)	.717	.000	.703	.000
Factor 3: Awe	.502	.000	.503	.000

*Linear Regression Transcendence in regard to order*

Variable	Transcendence first		Transcendence Second	
	$\beta$	Sig.	$\beta$	Sig.
Factor 1: Joy and connectivity	.298	.003	.123	.191
Factory 2: Religion (and Purity)	.623	.000	.758	.000
Factor 3: Awe	.561	.000	.441	.000

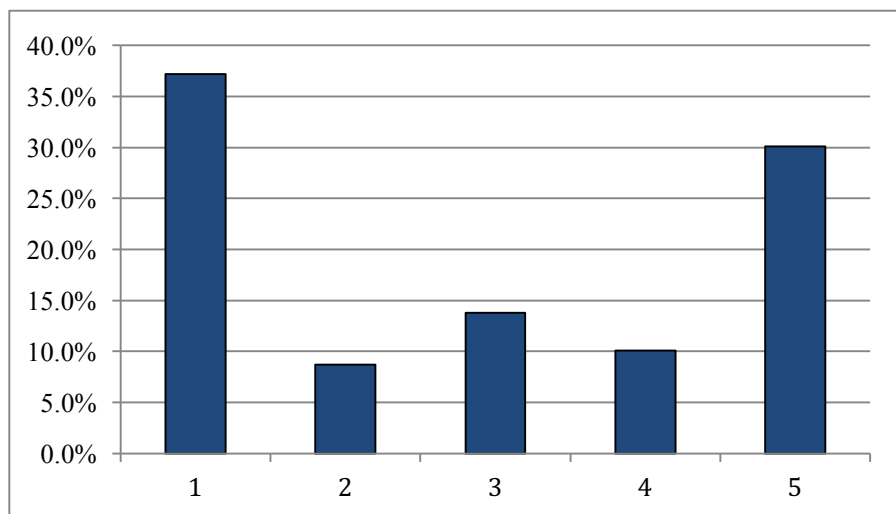
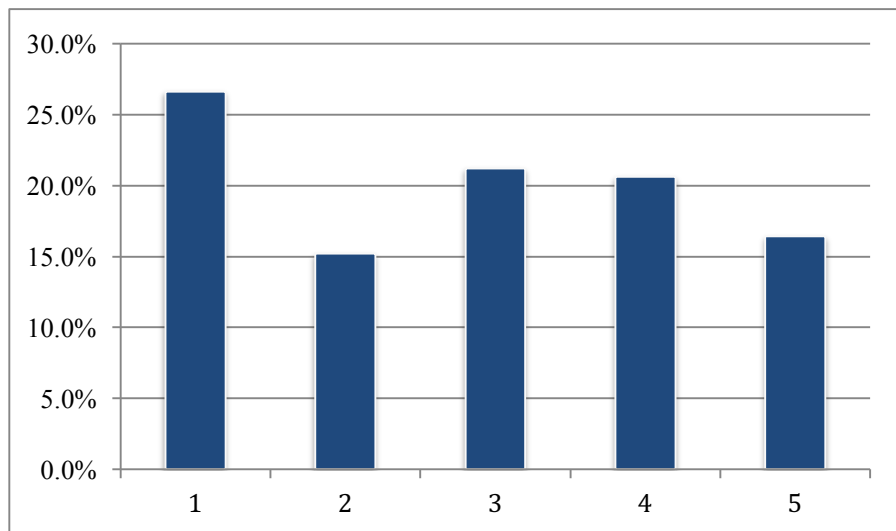
**Table 19: Linear Regressions for Sample of Nonreligious/Atheists/Agnostics, Experiment 1 and 2**

*Linear Regressions Holy and Transcendent – Nonreligious/Atheistic/Agnostic Participants*

Variable	Holy		Transcendence	
	$\beta$	Sig.	$\beta$	Sig.
Factor 1: Joy and connectivity	-.250	.001	.226	.059
Factory 2: Awe (and Purity)	.055	.406	.344	.006
Factor 3: Religion	.909	.021	.698	.000

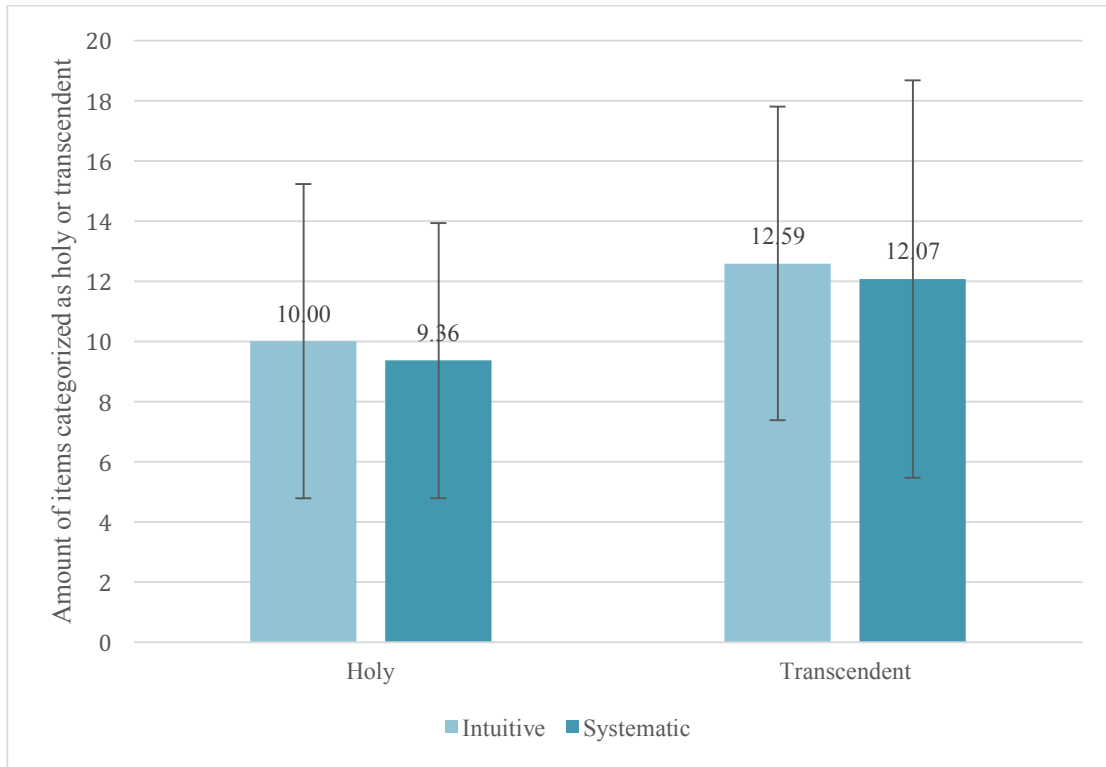


## FIGURES

**Figure 1: Percentage Items Rated on each Level of Holiness/Transcendence, Pilot Study**Holy conditionTranscendent condition

**Figure 2: Graph for ANOVA Intuitive and Systematic Condition, Experiment 1**

*Mean Ratings and Standard Deviations for the Number of Objects Categorized as Holy or Transcendent*



## APPENDICES

**Appendix A: List of Stimuli**

Mountains,  
Trees,  
Waterfalls,  
Shooting stars,  
Paintings,  
Music,  
Churches,  
Crucifixes,  
Icons of Saints,  
Altars,  
Bibles,  
Chocolate,  
Coffee,  
Soap,  
Bottles,  
Cars,  
Spoons,  
Literature,  
Instruments,  
Town halls,  
Theatres,  
Snow,  
Water,  
Tears,  
Cinemas,  
Rings,  
Dogs,  
Bugs,  
Mud,  
Babies

## Appendix B: Informed Consent

### Informed consent (Online)

My name is Lotte Pummerer and I am a master's student in the experimental psychology program at Georgia Southern University. I am conducting this research under the direction of Michael Nielsen, Chair of the Psychology Department at Georgia Southern University. We invite you to participate in this survey, in which we seek to better understand what cognitive and emotional processes are involved when we say that something is holy or transcendent.

We expect the experiment to take no longer than 40 minutes to complete. While there is little risk with completing this survey, you may experience discomfort expressing personal beliefs about sensitive topics. If at any time you wish to discontinue the survey, you may do so. You are not required to answer any question that makes you uncomfortable.

All data will be confidential. You will not be identified by name in the data set or any reports using information obtained from this study, and your confidentiality as a participant in this study will remain secure. De-identified or coded data from this study may be placed in a publically available repository for study validation and further research but your name will not be part of that record. Subsequent uses of records and data will be subject to standard data use policies, which protect the anonymity of individuals and institutions.

By participating in this study you have opportunity to help to advance our understanding of basic questions about psychology. You also will have the opportunity to express your opinions. Please be candid and open in your response.

Participants have the right to ask questions and have those questions answered. If you have questions about this study, please contact me under [lotte\\_j\\_pummerer@georgiasouthern.edu](mailto:lotte_j_pummerer@georgiasouthern.edu) or contact my faculty advisor Michael Nielsen ([mnielsen@georgiasouthern.edu](mailto:mnielsen@georgiasouthern.edu)). For questions concerning your rights as a research participant, contact Georgia Southern University Office of Research Services and Sponsored Programs at [912-478-0843](tel:912-478-0843). You will not receive any financial compensation for participation.

Your participation in this study is entirely voluntary and you may end your participation at any time by closing your browser. For your participation in this study you will receive 1 unit of experiment participation credits for your class. There is no penalty for deciding not to participate and if you withdraw from the study you will not experience any penalty or retribution.

You must be 18 years of age or older to consent to participate in this research study. This project has been reviewed and approved by the GSU Institutional Review Board under tracking number H\_\_\_\_\_.

Do you consent to participate in this survey after reading the above information?

Yes  No

### Informed Consent (In-Person)

My name is Lotte Pummerer and I am a master's student in the experimental psychology program at Georgia Southern University. I am conducting this research under the direction of Michael Nielsen, Chair of the Psychology Department at Georgia Southern University. We invite you to participate in this survey, in which we seek to better understand what cognitive and emotional processes are involved when we say that something is holy or transcendent.

We expect the experiment to take no longer than 40 minutes to complete. While there is little risk with completing this survey, you may experience discomfort expressing personal beliefs about sensitive topics. If at any time you wish to discontinue the survey, you may do so. You are not required to answer any question that makes you uncomfortable.

All data will be confidential. You will not be identified by name in the data set or any reports using information obtained from this study, and your confidentiality as a participant in this study will remain secure. De-identified or coded data from this study may be placed in a publically available repository for study validation and further research but your name will not be part of that record. Subsequent uses of records and data will be subject to standard data use policies, which protect the anonymity of individuals and institutions.

By participating in this study you have opportunity to help to advance our understanding of basic questions about psychology. You also will have the opportunity to express your opinions. Please be candid and open in your response.

Participants have the right to ask questions and have those questions answered. If you have questions about this study, please contact me under [lotte\\_j\\_pummerer@georgiasouthern.edu](mailto:lotte_j_pummerer@georgiasouthern.edu) or contact my faculty advisor Michael Nielsen ([mnielsen@georgiasouthern.edu](mailto:mnielsen@georgiasouthern.edu)). For questions concerning your rights as a research participant, contact Georgia Southern University Office of Research Services and Sponsored Programs at [912-478-0843](tel:912-478-0843). You will not receive any financial compensation for participation.

Your participation in this study is entirely voluntary and you may end your participation at any time by closing your browser. For your participation in this study you will receive 3 units of experiment participation credits for your class. There is no penalty for deciding not to participate and if you withdraw from the study you will not experience any penalty or retribution.

You must be 18 years of age or older to consent to participate in this research study. This project has been reviewed and approved by the GSU Institutional Review Board under tracking number H\_\_\_\_\_.

If you consent to participate in this research study and to the terms above, please sign your name and indicate the date below:

\_\_\_\_\_  
Participant Signature

\_\_\_\_\_  
Date

I, the undersigned, verify that the above informed consent procedure has been followed.

\_\_\_\_\_  
Investigator Signature

\_\_\_\_\_  
Date

## Appendix C: Demographics and Religiosity Questionnaire

### What is your religious affiliation?

Christianity  
 Islam  
 Judaism  
 Hinduism  
 Buddhism  
 Unitarian-Universalists  
 Agnostic  
 Atheist  
 No religious affiliation  
 Other: (blank)

### How would you describe yourself:

	Not religious			religious
	1	2	3	4
	1	2	3	4
	1	2	3	4
	1	2	3	4

### Below are five statements about God. Which is the statement that comes closest to your understanding of God?

- I believe God is a personal being who created the world and reigns over all creation, who looks after us and listens to our prayers and praise. God responds to our needs and stays close to us when evil comes.
- I believe God created the world and everything in it and then made us responsible for ourselves and for creation. God looks down on us from above without intervening in creation or our lives.
- I believe that God is the spirit or source of all creation. God is all around us, in nature and in all people.
- I am not sure what or who God is but I do think that it is beyond our understanding to comprehend such ultimate things. I often wonder if there is a God but I do not think that I will ever know for sure.
- I do not believe there is a God. I do not believe that God created the world or controls our affairs. There is no higher power that can intervene in our lives.

### Demographics

Age: (dropdown)

I am...
 

- male
- female
- other/don't want to answer

## **Appendix D: Priming Questions**

### **Holiness**

1. How do you define holiness?
2. How is holiness defined by your church and by your friends?
3. What things do you consider as holy?
4. Which characteristics do holy objects have?
5. Is it possible that objects are semi-holy?

### **Transcendence**

1. How do you define transcendence?
2. How is transcendence defined by your church and by your friends?
3. What things do you consider as transcendent?
4. Which characteristics do transcendent objects?
5. Is it possible that objects are semi-transcendent?

**Appendix E: Target Sentences**

	1	2	3	4	5	6	7
	Disagree						Agree
<b>Mountains</b>							
... induce the feeling of awe in me							
... make me feel small							
... induce the feeling of elevation in me							
... make this world a better place							
... induce the feeling of joy in me							
... make me feel happy							
... reflect purity							
... are without contamination							
... connect me to other people							
... are important in my culture							
... are often used or referred to in religious rituals							
... are important in religious teachings							

	1	2	3	4	5	6	7
	Disagree						Agree
<b>Trees</b>							
... induce the feeling of awe in me							
... make me feel small							
... induce the feeling of elevation in me							
... make this world a better place							
... induce the feeling of joy in me							
... make me feel happy							
... reflect purity							
... are without contamination							
... connect me to other people							
... are important in my culture							
... are often used or referred to in religious rituals							
... are important in religious teachings							

	1	2	3	4	5	6	7
	Disagree						Agree
<b>Waterfalls</b>							
... induce the feeling of awe in me							
... make me feel small							
... induce the feeling of elevation in me							
... make this world a better place							
... induce the feeling of joy in me							
... make me feel happy							
... reflect purity							
... are without contamination							
... connect me to other people							
... are important in my culture							
... are often used or referred to in religious rituals							
... are important in religious teachings							



1 2 3 4 5 6 7  
Disagree Agree

**Shooting stars**

- ... induce the feeling of awe in me
- ... make me feel small
- ... induce the feeling of elevation in me
- ... make this world a better place
- ... induce the feeling of joy in me
- ... make me feel happy
- ... reflect purity
- ... are without contamination
- ... connect me to other people
- ... are important in my culture
- ... are often used or referred to in religious rituals
- ... are important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Paintings**

- ... induce the feeling of awe in me
- ... make me feel small
- ... induce the feeling of elevation in me
- ... make this world a better place
- ... induce the feeling of joy in me
- ... make me feel happy
- ... reflect purity
- ... are without contamination
- ... connect me to other people
- ... are important in my culture
- ... are often used or referred to in religious rituals
- ... are important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Music**

- ... induces the feeling of awe in me
- ... makes me feel small
- ... induces the feeling of elevation in me
- ... makes this world a better place
- ... induces the feeling of joy in me
- ... makes me feel happy
- ... reflects purity
- ... is without contamination
- ... connects me to other people
- ... is important in my culture
- ... is often used or referred to in religious rituals
- ... is important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

### Churches

- ... induce the feeling of awe in me
- ... make me feel small
- ... induce the feeling of elevation in me
- ... make this world a better place
- ... induce the feeling of joy in me
- ... make me feel happy
- ... reflect purity
- ... are without contamination
- ... connect me to other people
- ... are important in my culture
- ... are often used or referred to in religious rituals
- ... are important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

### Crucifixes

- ... induce the feeling of awe in me
- ... make me feel small
- ... induce the feeling of elevation in me
- ... make this world a better place
- ... induce the feeling of joy in me
- ... make me feel happy
- ... reflect purity
- ... are without contamination
- ... connect me to other people
- ... are important in my culture
- ... are often used or referred to in religious rituals
- ... are important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

### Icons of Saints

- ... induce the feeling of awe in me
- ... make me feel small
- ... induce the feeling of elevation in me
- ... make this world a better place
- ... induce the feeling of joy in me
- ... make me feel happy
- ... reflect purity
- ... are without contamination
- ... connect me to other people
- ... are important in my culture
- ... are often used or referred to in religious rituals
- ... are important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Altars**

- ... induce the feeling of awe in me
- ... make me feel small
- ... induce the feeling of elevation in me
- ... make this world a better place
- ... induce the feeling of joy in me
- ... make me feel happy
- ... reflect purity
- ... are without contamination
- ... connect me to other people
- ... are important in my culture
- ... are often used or referred to in religious rituals
- ... are important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Bibles**

- ... induce the feeling of awe in me
- ... make me feel small
- ... induce the feeling of elevation in me
- ... make this world a better place
- ... induce the feeling of joy in me
- ... make me feel happy
- ... reflect purity
- ... are without contamination
- ... connect me to other people
- ... are important in my culture
- ... are often used or referred to in religious rituals
- ... are important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Chocolate**

- ... induces the feeling of awe in me
- ... makes me feel small
- ... induces the feeling of elevation in me
- ... makes this world a better place
- ... induces the feeling of joy in me
- ... makes me feel happy
- ... reflects purity
- ... is without contamination
- ... connects me to other people
- ... is important in my culture
- ... is often used or referred to in religious rituals
- ... is important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Coffee**

- ... induces the feeling of awe in me
- ... makes me feel small
- ... induces the feeling of elevation in me
- ... makes this world a better place
- ... induces the feeling of joy in me
- ... makes me feel happy
- ... reflects purity
- ... is without contamination
- ... connects me to other people
- ... is important in my culture
- ... is often used or referred to in religious rituals
- ... is important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Soap**

- ... induces the feeling of awe in me
- ... makes me feel small
- ... induces the feeling of elevation in me
- ... makes this world a better place
- ... induces the feeling of joy in me
- ... makes me feel happy
- ... reflects purity
- ... is without contamination
- ... connects me to other people
- ... is important in my culture
- ... is often used or referred to in religious rituals
- ... is important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Bottles**

- ... induce the feeling of awe in me
- ... make me feel small
- ... induce the feeling of elevation in me
- ... make this world a better place
- ... induce the feeling of joy in me
- ... make me feel happy
- ... reflect purity
- ... are without contamination
- ... connect me to other people
- ... are important in my culture
- ... are often used or referred to in religious rituals
- ... are important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Cars**

- ... induce the feeling of awe in me
- ... make me feel small
- ... induce the feeling of elevation in me
- ... make this world a better place
- ... induce the feeling of joy in me
- ... make me feel happy
- ... reflect purity
- ... are without contamination
- ... connect me to other people
- ... are important in my culture
- ... are often used or referred to in religious rituals
- ... are important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Spoons**

- ... induce the feeling of awe in me
- ... make me feel small
- ... induce the feeling of elevation in me
- ... make this world a better place
- ... induce the feeling of joy in me
- ... make me feel happy
- ... reflect purity
- ... are without contamination
- ... connect me to other people
- ... are important in my culture
- ... are often used or referred to in religious rituals
- ... are important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Literature**

- ... induces the feeling of awe in me
- ... makes me feel small
- ... induces the feeling of elevation in me
- ... makes this world a better place
- ... induces the feeling of joy in me
- ... makes me feel happy
- ... reflects purity
- ... is without contamination
- ... connects me to other people
- ... is important in my culture
- ... is often used or referred to in religious rituals
- ... is important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Instruments**

- ... induce the feeling of awe in me
- ... make me feel small
- ... induce the feeling of elevation in me
- ... make this world a better place
- ... induce the feeling of joy in me
- ... make me feel happy
- ... reflect purity
- ... are without contamination
- ... connect me to other people
- ... are important in my culture
- ... are often used or referred to in religious rituals
- ... are important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Town halls**

- ... induce the feeling of awe in me
- ... make me feel small
- ... induce the feeling of elevation in me
- ... make this world a better place
- ... induce the feeling of joy in me
- ... make me feel happy
- ... reflect purity
- ... are without contamination
- ... connect me to other people
- ... are important in my culture
- ... are often used or referred to in religious rituals
- ... are important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Theatres**

- ... induce the feeling of awe in me
- ... make me feel small
- ... induce the feeling of elevation in me
- ... make this world a better place
- ... induce the feeling of joy in me
- ... make me feel happy
- ... reflect purity
- ... are without contamination
- ... connect me to other people
- ... are important in my culture
- ... are often used or referred to in religious rituals
- ... are important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Snow**

- ... induces the feeling of awe in me
- ... makes me feel small
- ... induces the feeling of elevation in me
- ... makes this world a better place
- ... induces the feeling of joy in me
- ... makes me feel happy
- ... reflects purity
- ... is without contamination
- ... connects me to other people
- ... is important in my culture
- ... is often used or referred to in religious rituals
- ... is important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Water**

- ... induces the feeling of awe in me
- ... makes me feel small
- ... induces the feeling of elevation in me
- ... makes this world a better place
- ... induces the feeling of joy in me
- ... makes me feel happy
- ... reflects purity
- ... is without contamination
- ... connects me to other people
- ... is important in my culture
- ... is often used or referred to in religious rituals
- ... is important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Tears**

- ... induce the feeling of awe in me
- ... make me feel small
- ... induce the feeling of elevation in me
- ... make this world a better place
- ... induce the feeling of joy in me
- ... make me feel happy
- ... reflect purity
- ... are without contamination
- ... connect me to other people
- ... are important in my culture
- ... are often used or referred to in religious rituals
- ... are important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Cinemas**

- ... induce the feeling of awe in me
- ... make me feel small
- ... induce the feeling of elevation in me
- ... make this world a better place
- ... induce the feeling of joy in me
- ... make me feel happy
- ... reflect purity
- ... are without contamination
- ... connect me to other people
- ... are important in my culture
- ... are often used or referred to in religious rituals
- ... are important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Rings**

- ... induce the feeling of awe in me
- ... make me feel small
- ... induce the feeling of elevation in me
- ... make this world a better place
- ... induce the feeling of joy in me
- ... make me feel happy
- ... reflect purity
- ... are without contamination
- ... connect me to other people
- ... are important in my culture
- ... are often used or referred to in religious rituals
- ... are important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Dogs**

- ... induce the feeling of awe in me
- ... make me feel small
- ... induce the feeling of elevation in me
- ... make this world a better place
- ... induce the feeling of joy in me
- ... make me feel happy
- ... reflect purity
- ... are without contamination
- ... connect me to other people
- ... are important in my culture
- ... are often used or referred to in religious rituals
- ... are important in religious teachings



1 2 3 4 5 6 7  
Disagree Agree

**Bugs**

- ... induce the feeling of awe in me
- ... make me feel small
- ... induce the feeling of elevation in me
- ... make this world a better place
- ... induce the feeling of joy in me
- ... make me feel happy
- ... reflect purity
- ... are without contamination
- ... connect me to other people
- ... are important in my culture
- ... are often used or referred to in religious rituals
- ... are important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Mud**

- ... induces the feeling of awe in me
- ... makes me feel small
- ... induces the feeling of elevation in me
- ... makes this world a better place
- ... induces the feeling of joy in me
- ... makes me feel happy
- ... reflects purity
- ... is without contamination
- ... connects me to other people
- ... is important in my culture
- ... is often used or referred to in religious rituals
- ... is important in religious teachings

1 2 3 4 5 6 7  
Disagree Agree

**Babies**

- ... induce the feeling of awe in me
- ... make me feel small
- ... induce the feeling of elevation in me
- ... make this world a better place
- ... induce the feeling of joy in me
- ... make me feel happy
- ... reflect purity
- ... are without contamination
- ... connect me to other people
- ... are important in my culture
- ... are often used or referred to in religious rituals
- ... are important in religious teachings

## CURRICULUM VITAE

**Lotte Pummerer**

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100 Woodland Drive # 1217, Statesboro, Georgia 30458

### EDUCATION

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*Please see explanation provided below*

- Since 2015**                    **M.S. Experimental Psychology (exp. May 2017)**  
 Georgia Southern University  
 Concentration: Psychology of Religion and Spirituality
- Since 2013**                    **Protestant Theology (Churchal Exam/Diploma, exp. July 2018)**  
 Universität Tübingen  
 Concentration: Practical Theology, Interreligious dialogue
- 2012 – 2013**                    **Program: “Studies in the Middle East”**  
**Near East School of Theology, Beirut, Lebanon**  
 Concentration: Eastern Churches, Islam, Christian-Muslim dialogue  
 Courses in Practical Theology: Pastoral Care and Counseling  
 Paper: Teenage Depression – and Possible Responses from Youth Leaders at Church
- Since Spring 2012**        **B.Sc. Psychology (exp. March 2018)**  
 Fernuniversität of Hagen  
 Practicum with Petra Gelleri, work & organizational psychology:  
 Connection between creativity and intelligence
- 2010 - 2012**                    **Protestant Theology, Intermediate Exam, counted as B.A.**  
 Universität of Leipzig  
 Intermediate Examination in July 2012 (German grade: 1,5)  
 Concentration: Practical Theology, Interreligious dialogue
-

## PRESENTATIONS

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**Pummerer, L.;** Nielsen, M.E. (2017, April). Holiness and Transcendence more similar when you think. Research presented at the mid-year conference on Psychology, Religion and Spirituality of the American Psychological Association, Division 36, Chattanooga, Tennessee.

Nielsen, M.E.; **Pummerer, L.;** Wulff, D. (2017, April). Attitudes toward Sexual Minorities in the LDS Church. Research presented at the mid-year conference on Psychology, Religion and Spirituality of the American Psychological Association, Division 36, Chattanooga, Tennessee.

Swanson, S.; **Pummerer, L.;** Nielsen, M. E.; Hood, R. W. (2017, April). Quantifying Fowler's Faith Development Interviews with LIWC Text Analysis. Research presented at the mid-year conference on Psychology, Religion and Spirituality of the American Psychological Association, Division 36, Chattanooga, Tennessee.

Hatton, A.; **Pummerer, L.;** Nielsen, M. E. (2017, March). Positive Religious Coping Correlated with Prejudiced Reactions to ISIS Terrorism. Poster presented at the Southeastern Psychological Association conference, Atlanta, Georgia.

**Pummerer, L.;** Swanson, S.; Nielsen, M. E.; Hood, R. W. (2017, January). Text Analysis of Faith Development Interviews using Linguistic Inquiry and Word Count (LIWC). Research presented at the Society for Personality and Social Psychology pre-conference on Psychology of Religion and Spirituality, San Antonio, Texas.

Nielsen, M. E.; **Pummerer, L.;** Cragun, R. T. (2016, October). Writing about the Ordination of LDS Women: A textual analysis of narratives. Paper presented at the Society for the Scientific Study of Religion meeting, Atlanta, Georgia.

**Pummerer, L. &** Nielsen, M. E. (2016, April). Objects of and Reasons for Sanctification. Research presented at the Georgia Southern Psychology Conference, Statesboro, Georgia.

**Pummerer, L. &** Nielsen, M. E. (2016, February). Objects of and Reasons for Sanctification. Poster displayed at the mid-year conference on Psychology, Religion and Spirituality of the American Psychological Association, Division 36, Brooklyn, New York.

## RESEARCH EXPERIENCE

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**Since Fall 2016**

**Research Assistant**

*Psychology Department*

Georgia Southern University

**Responsibilities:**

Assisting faculty with research, e.g. conducting literature reviews, submitting and preparing conference papers, presentations, and publications; working with LIWC (program for textual analyses).

Assisting in an undergraduate Statistics Course.

## PROFESSIONAL AFFILIATIONS

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- Society for the Scientific Study of Religion
- American Psychological Association, Division 36: Psychology of Religion and Spirituality
- Member of Psi Chi
- Member of Golden Key International Honour Society

## GRANTS AND SCHOLARSHIPS

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- German National Academic Foundation (Studienstiftung des deutschen Volkes), June 2011-Present
- Fulbright, August 2015-May 2016
- Quadrille Ball Scholarship, November 2016

## SERVICE

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- Assistance at the STEM-Festival, Psychology Department of Georgia Southern University, September 2015
- Assistance at the Psychology Bash, Career Fair, Psychology Department of Georgia Southern University, November 2015
- Assistance at the Psychology Bash, Career Fair, Psychology Department of Georgia Southern University, November 2016
- Assistance at the CURIO (Center for Undergraduate Research and Intellectual Opportunities) Symposium, April 2017

## TECHNICAL SKILLS

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- SPSS 22 & 23
- Qualtrics
- LIWC (Linguistic Inquiry and Word Count)
- Inquisit (Programming)

## REFERENCES

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## EXPLANATION TO MY EDUCATION

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Because the education system is different in Germany, I want to provide a short overview over my previous studies as well as their comparability with the US system.

Germany right now is in the process of changing their previous system with the final degree of a diploma into the international system of Bachelors/Masters. A diploma used to indicate a continuous study of 5-7 years in a specific field. In-between, there is an intermediate exam which usually is taken after 2-4 years (in my case after 2 years). While some fields of study have already completely adapted to the system of Bachelor and Master (like the field of Psychology), other fields of study still cling to the old system of the diploma, which is the case for every study ending with a governmental or Churchal Exam. This includes medicine, teaching (all subjects), and theology. For that reason, my studies in theology are comparable but not identical to a B.A. degree in the US system.

My intermediate exam in theology, plus 2 additional semesters have been counted by Georgia Southern University as equivalent to a Bachelor's degree, which is also the usual procedure in almost all universities of Germany and in the U.S. government's Fulbright scholarship program.

I started the studies in Psychology separately and concurrently to my theology studies. I tried to take as many courses as possible besides my theological classes and finished the course work of 4 semesters in Psychology. These 4 semesters were counted as necessary advanced experiences in Psychology in my application for the Master in Psychology. I want to add that because the German Bachelor curriculum in Psychology only includes courses relevant to the subject, and does not include two years of general education courses, e.g. during freshman and sophomore years in the U.S. system., the length of time to reach a comparable level of progress in a field is shorter.