Naturalism—as *Religion,* within *Religions,* without *Religion*

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THE POTENTIAL CONTRIBUTION OF AWE AND NATURE APPRECIATION TO POSITIVE MORAL VALUES

by Curtis M. Craig

Abstract. The present analysis utilizes publicly available survey data to assess attitudes consistent with the religious naturalist orientation. Religious naturalism entails a sense of awe and reverence toward the natural world, and the survey data have subscales assessing awe and a question regarding opportunities to appreciate nature. The reported measures of awe toward the world and secondary analyses looking specifically at nature appreciation found, independent of theistic belief, significant statistical relationships between awe, nature, and self-reported sense of deep appreciation and peace, the likelihood to care about others, and an association with joy and compassion. These results imply that awe and reverence toward the natural world are independently associated with common moral values (e.g., compassion). This exploratory analysis demonstrates that, from a pragmatic and moral values perspective, religious naturalism has the potential to replace traditional theistic orientations, and that the simple rejection of religious discourse should be reconsidered. Further research should attempt to verify these preliminary conclusions.

Keywords: awe; exploratory; nature; religious naturalism; well-being

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Introduction

Religious naturalism provides a scientifically consistent framework for thinking about the self and the universe in a manner that can potentially replace or alter traditional religious orientations. Alternatively, one could reject the religious framework altogether. In consideration of this dilemma, this article attempts to contextualize this discussion with an analysis of publicly available survey data. The focus of the analysis is on the impact of beliefs and attitudes toward faith, religion, and nature on outcome measures that may be of pragmatic or moral relevance.

Given that the focus of this analysis is on moral means or commonly held values as one method of considering the benefits of traditional theistic religion and whether elements of religious naturalism could provide the same benefits, an implicit assumption is made that there are certain universal moral codes or values that are persistent across human cultures, including but not limited to happiness, altruism, compassion, and mercy (Wilson 1998). Therefore, both theistic and atheistic perspectives can aspire to certain core shared values.

Traditional theistic religion and its organization may help promote these aims by focusing belief and reverence on a deity (Dennett 2006, 280) and by facilitation of social life and group cooperation (179–80). The previous statement can be supported or refuted by evidence provided by surveys of religious attitudes, attendance, and the self-report of experience of various states of mind and action, such as experiencing joy or compassion toward others. However, whether religious naturalism could potentially replace the traditional religious framework requires further consideration. This document considers using the self-reported prevalence of commonly held moral values and attitudes as a barometer for whether religious naturalism could provide similar benefits as traditional religion.

Religious Naturalism

To briefly summarize a broad perspective, religious naturalism treats the world as requiring no supernatural explanation, supports the conclusions and process of scientific inquiry, believes in the core narrative of evolution and big history, and views the natural world with religious reverence (Goodenough 2014). To test whether traits of mind or attitudes associated with the religious naturalist perspective are associated with supposedly universal moral values that theistic religion facilitates, one needs to be specific about those traits. The author proposes that a sense of appreciation toward the natural world is one such trait, given the aforementioned summary of religious naturalism.

A second proposed trait or attitude in religious naturalism is that of awe toward the natural world. Carl Sagan once noted that both religion and science have the qualities to inspire awe (2006, 1–2) and that the universe

described by science readily has an enormous scale by which to inspire feelings of wonder (2006, 28–29). Religious naturalist Chet Raymo captures this sense of awe toward the natural world: "Whom should I adore […] the Creator or the creation? And the night answers: The creation! Beautiful. Terrifying. Infinite. Deep" (1987, 183–84). There are certainly other key attitudes or traits associated with religious naturalism, but the present analysis is constrained by what scales are available in the public survey dataset.

MIDUS II Data

The public survey dataset analyzed here comes from the second Midlife in the United States (MIDUS II) national longitudinal study, which was conducted to measure factors affecting middle-aged health and well-being. Specifically, the analyzed data come from the MIDUS II original and Refresher projects (Ryff 2010, 2017, 2021). Besides the initial studies, each project had subsamples of survey respondents answer questions about specific topics of interest, and the present analysis also considered one of those subsamples (specifically, MIDUS II Project 5: Neuroscience). The rationale for MIDUS II Project 5 was to study physiological and neural correlates of emotion and how those correspond to health and well-being. Some of the measures in the project focused on self-report of positive and negative emotions. One of the survey scales employed was the Dispositional Positive Emotion Scale (DPES; Shiota 2006), which assesses several positive emotional constructs including awe, which is of particular interest to the current research question.

Furthermore, the original team behind MIDUS II attempted to recollect new data using the same approach of their previous study in their MIDUS II Refresher project, with a new cohort (Ryff, 2017). This allows for a re-analysis and potential replication of any original findings, which is important for confidence in any observed relationship between nature, awe, and various moral values. Finally, the present analysis is similar to the analyses conducted by the author testing the relationship between nature exposure and various well-being variables (Craig, 2016, 2019).

The *hypothesis* proposed here is that while traditional religious belief is associated with certain moral values and outcomes such as happiness (Snoep 2008), traits and states potentially connected with religious naturalism, such as nature exposure and awe, are also associated with similar moral values and outcomes, when controlling for belief in a higher power and religious services. This is the claim that may be made if religious naturalism can replace the benefits offered by traditional religion.

Methods

Participants

The MIDUS II (and Project 5) dataset focusing on the questions of interests had a sample of 331 participants, 148 men and 183 women. The average age of participants was 53 years, with a standard deviation of 11.39 years. The oldest participant was 81 and the youngest participant was 34 years of age. Sixty-six participants reported a high school or grade school education, 114 participants reported college experience, and 43 participants reported graduate school experience. When asked whether they believed a higher power was looking out for them on a 7-point scale, with 1 being strongly disagree and 7 being strongly agree, the sample skewed religious with 62.5 percent of participants reporting 7 (strongly agree).

The analyzed MIDUS II Refresher dataset, which used a new sample, had 136 participants (61 men and 75 women). The average age of MIDUS II Refresher participants was 47.07 years with a standard deviation of 11.66 years, with the oldest participant being 74 and the youngest being 25. Eighteen participants reported at least some high school experience, 55 participants reported at least some college experience, and 21 participants reported some graduate school experience, with missing data from 42 participants. The Refresher sample also skewed religious, with 60.3 percent of participants reporting 7 (strongly agree) on the scale when asked if they believe a higher power was looking out for them.

Measures

Available demographic measures include age, gender, and education level. The MIDUS II original and refresher datasets asked a series of questions on 4-point scales, with 1 being often and 4 being never, with the prompt: "On a daily basis, how often do you experience the following: [*item*] (frequency/day)." Queried items included, but were not limited to: Feeling of deep inner peace, sense of deep appreciation, and so on.

The MIDUS II Project 5 original and Refresher datasets also had participants respond to the Dispositional Positive Emotion Scale (DPES; Shiota et al. 2006), which has subscales assessing awe toward the world, including *one question regarding opportunities to appreciate nature*. The predicted measures of interest include a DPES subscales assessing awe, joy, and compassion. Questions were asked on a 7-point scale, with 1 being strongly disagree and 7 being strongly agree.

Results

To determine to what degree that awe and nature appreciation contributed to the measures of interest, multiple hierarchical regressions were performed. Age, gender, education, and reported level of agreement with

Table 1. MIDUS II regression analyses

Dependent variables	First step			Second step		
	R^2	*b*		R^2	*b*	
Caring	0.135^{***}	-0.203^{**}	Higher power	0.178^{***}	-0.217^{**}	Awe
		-0.193^{*}	Religious services	0.153^{*}	-0.145^{*}	Nature
Appreciation	0.114^{***}	-0.164^{*}	Higher power	0.195^{***}	-0.299^{***}	Awe
		−0.141	Religious services	0.161^{**}	-0.229^{**}	Nature
Peace	0.227^{***}	-0.184^{*}	Higher power	0.250^{*}	-0.156^{*}	Awe
		-0.267^{***}	Religious services	0.238^{*}	-0.136^{*}	Nature
Connection with life	0.15^{***}	-0.279^{***}	Higher power	0.245^{***}	-0.324^{***}	Awe
		−0.041	Religious services	0.247^{***}	-0.326^{***}	Nature
Compassion	0.102^{***}	0.085	Higher power	0.316^{***}	0.485^{***}	Awe
		0.235^{**}	Religious services	0.191^{***}	0.304^{***}	Nature
Joy	0.102^{***}	0.266^{**}	Higher power	0.381^{***}	0.554^{***}	Awe
		0.030	Religious services	0.233^{***}	0.373^{***}	Nature

$^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.
Note: All steps control for age, gender, and education. The two variables in the second step of the hierarchical regressions comprise two separate analyses.
Source: MIDUS II; Project 5.

the statement "I believe a higher power is looking out for me," which was intended to measure degree of belief in a personal, active deity, and reported level of agreement with the statement "I regularly attend religious services" were all entered into the first step of each hierarchical regression as control variables.

In the second step of each analysis, either the nature appreciation variable or the awe variable was entered to measure their effect on the value of interest. The nature appreciation variable was a single question asking the degree of agreement with the statement "I have many opportunities to see the beauty of nature" on a 7-point scale. The awe variable is an averaged variable from seven items asking degree of agreement such as "I feel wonder almost every day" and "I often feel awe." The nature appreciation question is included in the awe variable as one of the seven items, but is also separately analyzed here given the current research question.

The following predicted measures of interest were assessed: Frequency of feeling caring for others (4-point scale), frequency of feeling a sense of deep appreciation (4-point scale), frequency of deep feeling of peace (4-point scale), frequency of feeling a strong connection to all life (4-point scale), and the DPES averaged variables for compassion (seven items on a 7-point scale) and joy (seven items on a 7-point scale). The results of the analysis are presented in Table 1 for the MIDUS II original survey data, and in Table 2 for the MIDUS II Refresher data.

Table 2. MIDUS II R regression analyses

Dependent variables	First step			Second step		
	R^2	*b*		R^2	*b*	
Caring	0.113	−0.260	Higher power	0.276^{***}	-0.417^{***}	Awe
		−0.005	Religious services	0.262^{***}	-0.395^{***}	Nature
Appreciation	0.064	−0.177	Higher power	0.209^{***}	-0.405^{***}	Awe
		−0.055	Religious services	0.209^{**}	-0.390^{***}	Nature
Peace	0.107	−0.250	Higher power	0.177^{**}	-0.273^{**}	Awe
		−0.089	Religious services	0.225^{**}	-0.351^{***}	Nature
Connection with life	0.114	−0.218	Higher power	0.339^{***}	-0.489^{***}	Awe
		0.004	Religious services	0.390^{***}	-0.537^{***}	Nature
Compassion	0.085	0.106	Higher power	0.278^{***}	0.453^{***}	Awe
		0.169	Religious services	-0.137^{*}	0.234^{*}	Nature
Joy	0.160^{**}	0.442^{**}	Higher power	0.436^{***}	0.541^{***}	Awe
		−0.187	Religious services	0.501^{***}	0.596^{***}	Nature

$^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.
Note: All steps control for age, gender, and education. The two variables in the second step of the hierarchical regressions comprise two separate analyses.
Source: MIDUS II Refresher; Project 5.

Analysis of the original MIDUS II participants found an unsurprising relationship between theistic belief and a personal sense of deep appreciation and peace, while self-reported rate of attendance to religious service (e.g., the social functions of religion) corresponded with the likelihood to care about others. However, the reported measures of awe toward the world and secondary analyses looking specifically at nature appreciation found significant relationships between awe, nature, and the same outcome measures, along with an association with joy and compassion. Furthermore, when conducting the same analyses on the MIDUS II Refresher datasets with a smaller number of new participants, these findings for awe and nature were replicated.

Discussion

The hypothesis tested here is that traits and states potentially connected with religious naturalism, such as nature exposure and awe, are also associated with shared moral values and outcomes, when controlling for belief in a higher power and religious services. This is an attempt to provide evidence to answer the central question of whether religious naturalism can replace traditional religion, or should religious discourse be abandoned altogether. The aspects of religious naturalism tested here are awe or reverence, controlling for degree of traditional religious belief, and opportunities to appreciate nature.

The implications of these results are that awe and reverence toward the natural world are independently associated with attitudes and states of mind commonly considered as valuable (e.g., compassion). The strength of the associations appears to be strongest and most reliable for deep appreciation, connection with life, and joy. The associations appear to be somewhat weaker or less reliable but still present for caring, peace, and compassion. More promising, these associations appeared to replicate with the Refresher dataset, while some of the prior observed relationships between belief in a higher power and religious service attendance surprisingly did not replicate, although this may be due to power issues, as the sample size for the Refresher dataset was not as large as the original dataset. Altogether, the present analysis demonstrates that nature and awe explain some unique variance in these measured outcomes beyond religion. This provides empirical evidence that, from a pragmatic and commonly held moral values perspective, religious naturalism has the potential to replace traditional theistic orientations, and that simply rejecting religious discourse should be reconsidered given the significant contribution of these factors to well-being and shared moral values.

Limitations

This study utilizes public survey data and is correlational by design, and therefore cannot attribute causality toward the identified relationship, which requires an experimental manipulation. As an example, perhaps individuals inclined toward joy and compassion also experience more awe and attend to the beauty of nature more frequently. Also, the original study was not explicitly designed to test this question on religious naturalism, and was primarily exploratory. This leads to issues such as the sample being significantly religious (60+ percent), and a focused study would attempt to recruit a larger proportion of nonbelievers in the sample.

The replicability of the findings was good, as nature appreciation frequency and awe remained significantly associated with the moral or well-being variables with both datasets. However, the construct validity of some of the variables are questionable, meaning it is not necessarily the case that the question is getting at the construct (e.g., nature appreciation) that is assumed here. For example, the variables measuring the values of caring, peace, deep appreciation, connection with life all use a single item, and participants may not understand these questions in the manner intended by the question designers. Standard practice is to use multiple questions for constructs, which was done for the joy and compassion variables. Most critical is the higher power variable, which used one item to assess belief in a personal, active deity. Such a question does not necessarily rule out other forms of belief in a supernatural being.

Due to the limitations of the public dataset, the analysis at hand had to focus on specific subtraits of the religious naturalist orientation, which can also be shared with other religions. Awe and appreciation of nature are not limited to religious naturalism, and neither is religious naturalism defined by only those two traits. A comprehensive research program would attempt to extract a significant collection of traits and attributes that are jointly associated with religious naturalism and examine how individuals scoring high or low in the joint collection of traits fare on various outcome measures.

Finally, one could argue that the central method of addressing the question via shared or core moral values is misguided. Some believers may argue that belief in a deity itself is a moral value above and beyond the others described here (Dennett 2006). Others may observe that moral values help organize behavior within a tribe and help group survival but that these values do often not extend outside of the tribe except for efforts by religious organizations to reach outside of the tribe (Wilson 2012). Addressing these concerns is outside of the scope of this document.

Future Research and Practice

These findings provide initial support for some aspects of religious naturalism as they pertain to certain moral values. Further research should attempt to verify these preliminary conclusions, and extend them with a wider collection of survey items to assess both belief, awe, and reverence for nature. The present findings also open the door to future research topics.

First, because these studies primarily rely on survey and self-report, with the uncertainties entailed with those methods, alternative methods such as experimental, physiological, or neuroscience research offers another avenue to provide converging evidence to the claims made here. Neuroscience research where participants are shown videos intended to evoke awe relative to other videos showed that brain regions associated with the default mode network (DMN) are less likely to be active when viewing awe videos, indicating less self-absorption and more immersion into the stimuli when feeling awe (van Elk 2019). Similarly, one study looking at the effects of a short walk in an urban park (e.g., nature) reduced the tendency to ruminate, which is associated with the DMN, and that this reduction in rumination was mediated by reported feelings of awe and less negative mood during the walk (Lopes 2020).

Awe has also been connected to expansion of time perception, allowing individuals to feel like they have more time by bringing them into the present moment, and this shift in time perception may partially underlie a greater sense of charity, willingness to spend time to help others, and life satisfaction (Rudd 2012). As implied earlier, nature experiences provide a

significant route to experience awe by allowing people to become absorbed into their surroundings (Ballew, 2018). Therefore, one could pursue other methods to study awe and nature (experimental or physical) or focus on other positive outcomes of these two constructs (being present, time perception). Furthermore, the aforementioned research provides one plausible explanatory mechanism by which awe has these positive effects on the core moral values of note, shifts in time perception, but there may be other mechanisms worth testing.

Two other concepts may be useful for advancing this line of research further. First, awe is not necessarily uniformly positive. So-called negative awe exists, in which the environment or event eliciting awe has an element of perceived threat or doom (Gordon 2017). This element is arguably present in some of the paintings of Caspar David Friedrich or the cosmic horror of H.P. Lovecraft, and may also be present in the darker meditations on traditional religious narratives. These same traits could also be present in certain interpretations of the story presented by religious naturalism (e.g., vast dark cosmos), and it is not clear what the effects of negative awe are for the moral values described earlier, besides loss of a sense of self-control (Gordon 2017). Second, individuals differ in terms of how much they identify with and see themselves as one with the natural world, a trait called nature connectedness (Howell 2011). Nature connectedness is associated with measures assessing well-being, as well as mindfulness, but it is not presently clear to what extent nature connectedness affects the experience of awe via nature experience.

Finally, the practice and value of religious congregation and ritual was not a primary focus of this document, but may serve a key role in the benefits of traditional religious organizations (Wilson 2012). Given the prominence of awe and nature appreciation highlighted here, these offers those within the religious naturalist community a clear focus for developing a practice or program in terms of cultivating awe toward nature.

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