



Religious Influence on Environmental Attitudes and Behaviour: Dominion or Stewardship?



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Abstract

This paper reports findings from a study that sought to understand how and the extent to which religious values shape environmental worldviews and self-reported environmental behavior among Christians and Muslims in Northeast Nigeria. Using Lynn White's "dominion-over-nature" thesis as a starting point, the study analyzed qualitative interviews and questionnaires to understand how religious individuals interpret their religious beliefs on the environment and the extent to which these beliefs impact on environmental behavior. The findings reveal a strong endorsement of dominion-over-nature theology among both Christian and Muslim participants. Participants' narratives, however, indicate that the dominion-over-nature doctrine is a complex set of beliefs that religious individuals and groups use to, on the one hand, legitimize the use of environmental resources and, on the other hand, emphasize human's responsibility to protecting nature. Statistical analysis also found not enough evidence to support one of White's claims that religious identification and commitment to dominion beliefs predispose individuals to devalue nature and engage in behaviors that damage the environment. Also, contrary to White's hypothesis that Christians are more likely than non-Christians to hold on to the dominion theology, this study found no significant difference between Christians and Muslims in terms of both endorsement of dominion doctrine and negative environmental behavior. The implications of these findings on understanding the religion environment connection and promoting environmental sustainability in this religiously conservative country are also discussed.

Keywords: Religion; Dominion; Stewardship; Northeast Nigeria

Introduction

The main objective of this paper is to investigate the impact of religious beliefs on environmental worldviews and behavior among Christian and Muslim participants in the devoutly religious [1] and environmentally challenged [2] Northeast region of Nigeria. One of the most commonly used starting points to understanding religious' influence on environmental attitudes and behavior is based on White's thesis that identified religion - Judeo-Christian traditions in particular - with a social consciousness that stresses human dominion-over-nature. A commitment to this doctrine, argued White, leads to lower levels of environmental concern and even anti-environment actions. Following on from White [3] and Hayes & Marangudakis [4], this paper presents results from the analysis of qualitative and quantitative data on a range of worldviews, attitudes and behavior towards nature in the participating congregations. The aims were to understand the levels of endorsement of dominion beliefs among the participants, the various interpretations and narratives pertaining to the dominion doctrine they held and how such beliefs shape their interaction with nature.

The literature

Empirical knowledge on the links between religion and environmental attitudes and behavior, and religious engagement with environmental issues are becoming increasingly vital in the wake of the unprecedented environmental challenges affecting contemporary societies. The last four decades have seen a period of intense scholarly interest in the social basis of environmental problems and the societal impacts of environmental change. Research into a wide range of issues regarding the interaction between religion and the environment have produced a variety of theoretical arguments and findings that highlight the need for a better understanding of religious engagement with environmental issues.

Lynn White [3] is one of the first analysts to explore the connections between religion and environmental change. In his famous critique of the Judeo-Christian religious tradition, White held that, by promoting a 'dominance-over-nature' orientation, which is the social consciousness that influences human nature

interaction in the western world, these religions contributed to contemporary ecological crises. White calls for a new environmentalist orientation that would engender harmony with nature in order to address environmental crises facing humanity. Since the publication of White's paper, many scholars have used empirical data to test the relationship between religion and environmental attitudes in different social contexts, especially in the Judeo-Christian West. Majority of studies have found negative effects of religiosity on environmental concern.

A closer look at the body of empirical literature on religion and environmental attitudes and behavior, however, reveals a more complex relationship between religiosity and environmental concern than suggested by White's hypothesis. For example, Kanagy & Nelson [5] and Hayes & Marangudakis [4] found that the diversity of the Judeo-Christian traditions as well as other intervening variables such as level of education and scientific knowledge have accounted for differential levels of environmental concerns in America and Britain respectively. In Britain, the study reports a partial support for White's hypothesis that western monotheistic tenets might have some indirect influence on environmental attitudes. However, they found that there exists no direct relationship between 'adherence to Christian belief and a domineering attitude toward nature' (ibid 2001: 152). Denominational differences within the Christian tradition, according to Hayes and Marangudakis, are important determinants of differential attitudes towards the environment in Britain.

Similar findings [5-7] show that fundamentalist Protestants exhibit more 'dominionist' orientation and are more opposed to environmentalism than other non-fundamentalists, Catholics and others. In Kanagy and Nelsen, White's claim that religiousness and commitment to dominance-over-nature orientation are negatively associated with environmental concern has been accepted on a more general level. However, further analysis reveals a more complex relationship in that fundamentalists and non-fundamentalists report no differential support for relaxation of environmental laws. In this case, it is likely that level of education and region are more important determinants than religiousness. Another finding by Kanagy and Nelsen (ibid: 43) that questions White's hypothesis is the lack of relationship between religiosity and environmental activism. The study concludes that 'fundamentalists are no less likely to be concerned about the environment'. These studies also advocated for an intermediary model that stressed the role of denominational differences within religions in understanding the man-nature orientation of their adherents as well as other historical socio-economic factors.

Another study by Biel & Nielsson [8] found that religious values and beliefs combine with other determining factors like political ideology, gender and wealth to create a culture that supports environmental exploitation. Their findings also support an earlier approach that pays attention to the extent to which

'environmental topics activate religious values and make them mentally accessible' and future judgements on environmental problems [8]. This implies that different environmental issues are responded to with different religious values. In other words, religious values influence environmental attitudes in different ways depending on whether issues 'activate' religious values or not. The study followed Gardner & Stern [9] to make an important distinction between 'church-sanctioned' religious views on nature and 'non-sanctioned' perceptions of nature.

Much empirical research on religion and environmental behavior, such as those discussed above, were not only handicapped by methodological constraints - such as poor conceptualization and measurement of religiosity and environmental concern - but are also culturally specific. A large majority were conducted in either the USA or Western Europe. In an attempt to test White's thesis in a cross-national and culturally diverse setting, Schultz, Zelezny & Dalrymple [10] examined the relation between religion and environmental concern in 15 countries across North and South America and Europe. The study found that the pattern across the countries is consistent with White's thesis, as respondents who reported high biblical literacy expressed low ecocentric environmental concern and lower score in New Environmental Paradigm (NEP). Similarly, no significant relationship was reported between biblical literalism and pro-environmental behavior. While this is a significant attempt to overcome culture-specific limitations of other studies, the research did not take into account denominational diversity and the role it plays, and the findings are not transferable to non-Christian societies. The approach, however, supports Kanagy & Willits [11] method of measuring religion and environmental concern in terms of acceptance of Dunlap and Van Lier's NEP [12-14].

Theoretical and empirical research on the relationship between religion and environment shows the enormous influence of the White's hypothesis on the study of religion and the environment. However, other alternative perspectives - such as those that see religion as positively influencing environmental concern - have also influenced contemporary research on the topic. Although much of the empirical evidence tends to validate White's thesis, it is clear, as stated earlier, that the relationship between religion and environmental attitudes is more complex than the various theoretical viewpoints (especially White's hypothesis) suggest.

The influence White's perspective, and other opposing perspectives, had on empirical research and theorizing on religion and the environment is also evident in the interest scholars developed in the analysis of worldviews, values, attitudes and behavior. Findings from decades of studies of worldviews, values, attitudes and environmental behavior have produced perspectives that advocate change in environmental attitude and behavior with a view to addressing environmental problems [9]. Debates on religious influence on environmental worldviews and behavior

have demonstrated the importance of analyzing commitment to dominion-over-nature theologies and how this commitment affects the attitude and behavior of individuals toward the environment [7,15-17].

This study builds on these previous works to explore the connections between religious worldviews and attitudes, and behavior towards the environment among selected Christian and Muslim congregations in Northeast Nigeria. However, unlike previous studies, this study sought to compare the levels of commitment to dominion-over-nature orientation among Christians and Muslims in the area.

Social research on the links between religious beliefs, worldviews and environmental attitudes and behavior has given little attention to exploring how religious practitioners interpret religious injunctions relating to human-environment interactions, how these various forms of interpretation change in the wake of environmental crisis and how these affect environmental attitudes and behavior. The limited attention social scientists gave to variations in the interpretation of environmental beliefs, as well as individual and institutional dimensions of environmental beliefs and practices may not be unconnected with their bias towards survey techniques and statistical analysis of relationships between religious factors and different measures of environmental attitudes and behavior. As Proctor & Berry [18] observe, one of the major limitations of the current social research on religion and the environment is the “relative paucity of qualitative studies” and “the virtual absence of coordination between qualitative and quantitative research” on the subject. To this end, this study used qualitative data to contextually explore the various interpretations of the dominion-over-nature theology. I complemented this qualitative data with a statistical analysis of the relationship between demographic and religious variables and environmental attitudes and self-reported behavior.

The sections that follow describe the methods used to collect and analyze data, followed by a discussion of findings in the ‘results’ section. Two broad sections were used to summarize the findings. In the first section, qualitative data are analyzed to determine the participants’ understandings of dominion doctrine, while in the second, quantitative data are analyzed to assess endorsement of dominion doctrines and their effects on environmental behavior. The findings of the study were discussed and the conclusion was drawn after these sections.

Methods

The data used in this article were drawn from a wider study on religion and environment in Northeast Nigeria. The study used a qualitatively driven mixed methods approach [19] to explore different dimensions of the intersection between religion and environment in Christian and Muslim congregations across the region. Specifically, I used qualitative interviews and interviewer-administered questionnaires to collect data between September

2012 and August 2013. A total of 18 congregations participated in the study. Out these 18 congregations, 7 were Christian congregations (3 Evangelical, 4 Pentecostal churches), while 11 were Muslim (6 Salafi and 7 Sufi congregations). Qualitative data were collected using qualitative interviews with the head clergy of the 18 congregations that participated in the study. A purposive sampling technique based on practical accessibility, willingness to participate, denominational diversity and size of membership was used in the selection of congregations. The interviews explored participants’ understandings and interpretation of religious beliefs on the environment and how these beliefs influence environmental behavior. All the interviews were audio-recorded with the permission of participants and later transcribed for analysis. In analyzing the data, I used the ‘thematic analysis’ approach [20-22]. The analysis explored narratives and discourses about religious environmental principles and how they impact on environmental actions.

With the aid of self-completion questionnaires, numerical data were obtained from 244 members of the congregations that participated in the qualitative study. The questionnaires contain Likert scale items that measured respondents’ endorsement of dominion theology, environmental worldviews and self-reported environmental behaviors. Statistical analysis used simple percentages, independent t tests, one-way analysis of variance and Pearson’s r correlation to examine patterns and relationships between different variables.

Results

Dominion-over-nature narratives

The belief that nature is primarily created to serve as a source of livelihood for humans and that humans are created to rule over the rest of nature is a significant theme across the qualitative data. In the wider literature, dominion theology was often portrayed as one of the major lines of reasoning used by religious fundamentalists to justify continued exploitation of nature. However, in this interviews, dominion-over-nature theology was not presented by participants as necessarily implying a license to subjugate nature. As will be seen in the following discussion, a majority of the respondents believed that dominion-over-nature can also be interpreted to mean responsibility to exercise stewardship of nature. Others opined that, for anthropocentric and spiritual reasons, nature needs to be exploited with moderation. Below is a summary of how participants articulated their understanding of dominion-over-nature doctrines.

Dominion theology was built on three basic and interrelated premises, namely the belief that God primarily created nature in order to be used by humans; the belief that humans were created to exercise dominion over earth; and the idea that human dominion-over-nature is meant to be a responsibility to look after (‘take

care') of nature. It can be observed in the quotations extracted from the respondents that all the three themes are salient in the narratives of both Christian and Muslim participants:

Humans were created to rule over rest of nature

This sub-theme was adopted from the wider literature to summarize narratives that describe humans as the dominant species, specifically created to exercise authority over the rest of nature. One of the three major premises of the dominion-over-nature theology, as evident in the accounts of many participants, is the religious doctrine that God has delegated to humans the 'authority' to 'rule' or have 'dominion' over the earth and all other creatures. Participants drew from religious scriptures (Bible and Quran) as well as real life examples to support the argument that humans are created to exercise dominion over the rest of nature:

And we equally believe that one of the purposes for which God created man was to cultivate the earth. [01: Pentecostal Christian]. Human was created to look after the earth. When God called him (human) vice-regent, He meant human is given the custody of the earth, that is to look after the earth and its resources, not to cause any harm on it. [07: Salafi Muslim]

In Genesis, the holy Bible says when God finished the creation of man, He said to man you are commanded to control and to subdue the earth. That is, man has to work on the land or the environment to cultivate it or to conserve it so that it does not affect its system (setup) the way God has planned it. So, when He (God) finished the creation of the earth, He instructed man to be in-charge... [14: Evangelical Christian]

From the quotations above, there is apparently no difference between Christian and Muslim participants in terms of articulation of a commitment to the belief that humans are the dominant, most important of all living species on earth. Four of the metaphors used by the participants - namely 'purpose', 'vice-regent', 'home' and 'custody' - in describing the basis and nature of the relationship between humans and nature are useful to the understanding of dominion orientation. First, both humans and nature were not only created by the same God, their creation, according to both Christian and Muslim participants, has a 'purpose'. For humans, the purpose, as participants espoused, is to be God's representatives or 'vice-regents' on earth. One of their (humans) primary duties as God's representatives is to exercise 'dominion' over the earth, maintain 'custodianship' of the earth, and to 'look after' the rest of creation put therein. On its side, the earth was seen as a dwelling or 'home' over which humans have a delegated right to ownership. Although participants did not reject the traditional views that scriptures contain commandments to humans to exercise authority, to 'subdue' and 'exploit' the Earth, or gain 'mastery-over-nature', their attempts to interpret such commands in terms of 'responsibility' towards the earth indicates a strong environmentalist worldview.

There is also a sense in some interviews that religious scriptural teachings were seen to provide adequate support for the worldview that humans are a 'superior' specie. In a number of interviews, direct reference was made by Christian interviewees to Genesis (Chapter 1.26) and Muslims to the Quran (Chapter 2.30) to legitimize the authority humans, as the dominant creature on earth, have over the rest of nature. Underlying this belief is an idea that both separates humans from nature and sees humans as part of nature. Perceived separation of humans from nature is evident in the views that participants have expressed which suggest that humans were 'sent' or 'made' to exercise authority over nature. On the other hand, seeing humans as a specie that is part and parcel of nature is salient to discourses that depict humans as occupiers of a position of authority in the hierarchy of species that make up the ecosystem. Although seemingly contradictory, both views were substantively represented in the beliefs shown in this interview data about humans' position in relation to the rest of nature.

Nature is primarily created to provide for human needs

This sub-theme captures narratives that see nature from a purely utilitarian point of view. As can be noted from the quotations cited above, participants believed that humans have been 'authorized' to exercise dominion and authority over the rest of nature. In that respect, they (humans) were given a 'license' to exploit the resources of nature. Integral to the belief in the right of humans to exploit nature is the utilitarian perception of nature as a 'resource', 'source of livelihood' and 'repository of resources' necessary for humans' survival. Thus, dominion-over-nature involves not only the notion that humans have a divine mandate to rule over nature but also the view that nature's primary purpose is in providing the necessary resources for humans' survival and wellbeing:

Based on this, it is clear that the earth itself is primarily created to sustain human life. [03: Salafi Muslim]. In the religious scriptures, it is written that God created the earth, I mean the environment, for man to have a source of livelihood. That does not mean the earth it intended to be misused by humans. [15: Evangelical Christian]. Looking at the condition in which God created both the earth and humans, it is clear that the earth is primarily created to sustain human life. That is why in the Quran, God said to humans that 'the earth is there for you (humans) to sustain yourselves and to enjoy from its richness. [19: Salafi Muslim]

In these statements which exemplify this position, both Christian and Muslim participants expressed the belief that nature primarily exists to serve humans' need for food and other resources. However, all of the participants agreed that 'ownership', through divine mandate, of the earth does not entail a 'license' to engage in activities that could harm the environment. They have all pointed out that the mandate given to humans by God to have

dominion over nature is limited by scriptural teachings that place limits on human's activity on earth. These beliefs are necessary but not sufficient reasons for environmentally damaging behavior:

From the Christian perspective, humans were given the authority to take care of the earth and not to ruin or mismanage it. Dominion over the earth does not mean causing harm to the environment. It is a command to us to look after the earth, as stewards. [15: Evangelical Christian]. Secondly, on the relationship between humans and the environment, it is stated in the Qur'an that God has laid (out) the earth so humans can benefit from it, so any activity that can damage or pollute the earth is prohibited in Islam. [03: Salafi Muslim]

God's command to man to keep the garden, work it, take good care of it therefore means that man was supposed not to abuse the environment in that regard. [04: Sufi Muslim]. These views provide further evidence of both acceptance of human's authority to rule over nature and anthropocentric beliefs that define nature in terms of its utilitarian value. However, as in the preceding subsection, participants were prompt in following their views about nature's value to humans with a 'disclaimer' that God did not give humans 'unlimited' power to exploit nature.

Dominion as 'responsible custodianship'

In interpreting the dominion mandate as not implying license to damage or harm nature, participants have provided another interpretation of the dominion theology which can be summarized as a moral responsibility to 'look after' or 'take care' of nature. This seems to be a contrasting interpretation of the dominion-over-nature doctrine. But, as shown in the quotations above, participants had presented dominion as a complex mix of mastery over and stewardship of nature. While the last two sub-themes describe humans' relation with nature as essentially anthropocentric and utilitarian, this conception of dominion stresses humans' responsibility towards nature. In the interviews, participants have spent much time trying to clarify what 'divine authority' to manipulate nature is and the limits that religions placed on humans' right to exploit nature. From their narratives, it is obvious that dominion-over-nature is also seen as involving 'responsible custodianship' of nature. 'Responsible custodianship' implies a religious ethical principle to care for nature, as ordained by God. It is based on an understanding of 'dominion' as implying taking care of nature and preventing it from damage and distortion.

Responsible custodianship also involves a recognition of what participants referred to as the 'rights of other creatures' to be spared harm and abuse by humans and to be used only in moderation. Here, the belief among participants is that license to exploit nature is limited by religious teachings that prohibit wastefulness and unnecessary consumption, as well as treatment of nature as a valuable property that deserves proper maintenance. As can be seen in the following quotations, both Christian and Muslim participants have expressed this understanding of

dominion-over-nature as incorporating an ethical principle of responsible custodianship of the earth:

He (God) equally encouraged sustainable farming so as to preserve the land. If the land becomes polluted and degraded, there's no way we can live on it. [02: Salafi Muslim]

Human is created to look after the earth. When God called him (human) vice-regent, He meant human is given the custody of the earth, that is to look after the earth and its resources, not to cause any harm on it. ...He (God) encouraged us to be merciful to all living things. [07: Salafi Muslim]. Actually, as religious leaders, we try our best to make people see the reason why the land should not only be exploited but that it should be conserved not only for ourselves but for the future generations. [01: Pentecostal Christian]

Although the principle of responsible custodianship offers a contrasting perspective of human-dominion-over nature, there is no sense, in the discourses of participants, that the principle is in opposition to the dominion ideas that humans were created to rule over nature and that nature exists primarily to serve human needs. Instead, responsible custodianship of nature was seen as either another important tenet of the dominion belief or as a limitation placed by God on humans' power over nature. As reported earlier, some participants were keen to stress that dominion mandate should not always be seen as according to humans an unlimited authority to exploit nature. Rather, it should be seen as both a 'permission' to engage in a 'moderate' exploitation of nature and a command to humans to engage in a 'mandatory stewardship of nature'.

Questionnaire results on ecological worldviews and behaviors

While the preceding section draws from qualitative interviews with the clergy who represented participating congregations, this section presents results of quantitative analysis of questionnaire data collected from members of participating congregations. The findings presented center around the connections between religious identification, commitment to dominion orientation and environmental attitudes and self-reported environmental behaviors.

The instruments

As indicated in the literature review, there are different ways of examining the role of religion in environmental concern and behavior. In this section, I use the White's hypothesis to understand whether Christians and Muslim participants differ in their levels of endorsement of dominance-over-nature orientation and environmental concern and whether commitment to dominion theologies is associated with lower levels of environmentally responsible behavior. Based on basic assumptions of the White's thesis, I hypothesized that Christian and Muslim respondents differ in their commitment to dominion theology and that commitment to this theology is associated with lower levels of environmental concern and pro-environmental

behavior. In order to assess the environmental worldviews of the religious individuals who participated in the study, 10 items from the revised New Ecological Paradigm scale (Dunlap et al., 2000) were adapted and modified. In a nutshell, the scale measures individuals' underlying environmental worldviews with a view to understanding their attitudes towards nature. The actual scale consists of 15 Likert items that focused on "beliefs about humanity's ability to upset the balance of nature, the existence of limits to the growth of human societies, and humanity's right to rule over the rest of nature" [14]. Based on the objectives of this study, the 10 items adapted from the NEP scale were used to assess environmental worldviews in the form of anti-exceptionalism, anti-anthropocentrism, limits of growth, balance of nature, and eco-crisis. Because of the recurrence, in the qualitative interview data, of the belief in the power of God to take care of the earth and the conceptualization of nature as God's creation that shares with humanity certain rights, the wordings in two of the items were altered to capture these views. For each item, respondents were asked to indicate their level of agreement with the statements by choosing one of 5 options - strongly agree, moderately agree, unsure, moderately disagree and absolutely disagree. The five odd-numbered items were worded in such a way that agreement implies pro-DSP orientation while agreement with the five even-numbered items indicates pro-NEP orientation. Responses to pro-NEP items were scored as 5 = strongly agree, 4 = moderately agree, 3 = unsure, 2 = moderately disagree, 1 = strongly disagree. The scores were reversed for pro-DSP items to enable the computation of NEP orientation.

Consistent with the approach used by Schultz, Zelezny, & Dalrymple [10], self-reported environmental behaviors were measured using a scale that contains items seeking respondents to state how often they have engaged in certain 'negative' or 'positive' private and public sphere environmental behaviors. It is, however, worth restating that the environmental behaviors included in this scale are those that were recurrent in the qualitative interview data. They included tree planting, tree felling, indiscriminate waste disposal, wasting water and use of firewood and plastics.

Both private and public sphere dimensions of these behaviors were included in the scale to assess the frequency of both types of environmental behavior. Responses were measured on a scale ranging from 1 (never) to 5 (very often). Accordingly, all the four negatively formulated items were reversed during coding. Responses to both NEP and self-reported behaviors were statistically analyzed against demographic and religious variables.

General ecological worldview

The first part of the analysis examined respondents' levels of concern for the environment by investigating endorsement of NEP and determining, as hypothesized earlier, whether Christians and Muslim participants differ in their endorsement of NEP and

rejection of DSP. To get a sense of respondents' level of agreement with NEP, scores for each of the 10 items of the revised NEP scale adapted [14] were computed to obtain an overall numerical representation of their ecological worldview. Consistent with the classifications used in previous studies [23], respondents were, first, grouped into three clusters, based on the sum total of their NEP scores - out of a maximum score of 65 - as follows:

- i. A total NEP score of less than 33 indicates anti-environmental worldview.
- ii. A total NEP score greater than 33 and less than 39 indicates moderate environmental worldview.
- iii. A total NEP score of greater than 39 indicates pro-environmental worldview.

Overall, the majority of the respondents (66%) held anti-environmental worldview, 25% reported moderate pro-environmental worldview, while 5% reported strong pro-environmental worldview. The NEP scores for the two religious groups (Christians and Muslims), according to these groupings indicate very little difference. First, the results of analysis suggest that 71% of Christians and 68% of Muslims hold anti-environmental attitudes, 27% of Christians and 26% of Muslims are moderately pro-environment, while 2% of Christians and 6% of Muslims are strongly pro-environment in their orientation. To determine whether there is a statistically significant difference in the levels of endorsement of NEP between the two religious groups, an independent t test was conducted. The result suggests that there is no significant difference between the mean NEP scores of Christians ($n = 63, m = 31.17, SD = 3.88$) and Muslims ($n = 173, m = 31.53, SD = 4.84$) $t(136.514) = -0.574, p = 0.567$. The effect size, $n2 = 0.001$, was very small. This can be interpreted to mean that religious identification does not account for difference in terms of environmental concern within this sample (Table 1).

Table 1: Religious affiliation.

Religion	Number	Percentage
Christianity	65	26.6
Islam	179	73.4
Total	244	100

Further analysis was carried out to determine the effects of gender, income and education on environmental attitude measured by endorsement of NEP. Tables 2-4 shows the percentage distribution of the sample in terms of gender, level of income and level of education respectively. These were among the key demographic variables that were frequently reported to influence environmental worldviews in a number of previous studies [10]. The results indicated that contrary to what was reported in previous studies, male respondents have reported a slightly higher pro-environmental orientation than females. 78%

of females and 66% of males held anti-environmental worldviews while 18% and 4% of females compared to 28% and 5% of males showed moderate and strong pro-environmental worldviews respectively. Further analysis, however, found no significant difference between the NEP scores of females ($n = 51, m = 30.57, SD = 4.70$) and males ($n = 185, m = 31.67, SD = 4.56$) $t(234) = -1.518, p = 0.13$. Further, respondents who identified themselves as earning lower incomes ($< \text{£}1000/\text{year}$) have reported lower pro environmental orientation than those with higher incomes ($> \text{£}1000/\text{year}$). 79% of lower income earners and 64% of higher income earners were found to be anti-environmental in their responses, while 21% of those earning lower incomes, compared with 27% of those earning higher incomes, were found to be moderately pro-environmental. None (0%) of the respondents in the lower income category and only 9% of those in the higher income category reported holding strong pro-environmental orientation.

Table 2: Gender.

Gender	Number	Percentage
Female	53	21.7
Male	191	78.3
Total	244	100

Table 3: Level of income.

Income	Number	Percentage
Less than £1000/year	73	29.9
More than £1000/year	62	25.4
No response	109	44.7
Total	244	100

Table 4: Self-reported level of education.

Education	Number	Percentage
No formal education	2	0.8
Primary education	8	3.3
Secondary education	41	16.8
Tertiary education	186	76.2
No response	7	2.9
Total	244	100

The results from a test of statistical significance have also revealed that respondents with higher incomes tended to score higher in NEP than those with lower incomes, with a statistically significant difference in the mean NEP scores of respondents with low income ($n = 70, m = 29.71, SD = 4.12$) and those with high income ($n = 59, m = 32.46, SD = 3.56$) $t(127) = -4.006, p = 0.00$. The effect size, $\eta^2 = 0.1$ was small. The 95% confidence interval was -4.1 to 1.39. A one-way analysis of variance was conducted to determine whether there was a difference in NEP scores of respondents based on the four levels of education in the sample. The independent variable included four groups: no formal education ($m = 38.00, SD = .00, n = 2$), primary education ($m = 31.29, SD = 5.31, n = 7$), secondary education ($m = 29.56, SD = 4.19, n = 39$) and tertiary education ($m = 31.70, SD = 4.56, n = 185$). The results showed that respondents with tertiary education tended to score higher in NEP than those with lower education. Post hoc comparisons to evaluate pairwise differences among group means were conducted using the Tukey HSD test. The test revealed statistically significant pairwise difference in NEP scores between respondents with secondary and tertiary education, $p < 0.05$. Respondents with no formal education or primary education only do not significantly differ from the secondary education grouping, $p > 0.05$. ANOVA test was significant enough to conclude that level of education, like income, is a more important predictor of environmental concern among this study's participants than religious identification.

Endorsement of dominion beliefs

Following Lynn White's [3] criticism of Judeo-Christian religious traditions of holding dominion-over-nature orientation, some researchers [2] have argued that when it comes to dominion-over-nature, the main distinction is between Abrahamic and non-Abrahamic religions. Based on this characterization of Abrahamic religions (Christianity, Judaism and Islam) as anthropocentric, the analysis here compares opinions of the Christian and Muslim respondents in relation to endorsement of dominion attitudes toward nature. As shown in Table 5, almost all respondents reported strong endorsement of beliefs in human dominion-over-nature. However, a slightly higher number of Christians (94%) compared to Muslims (81%) reported agreement with the notion that humans were created to rule over the rest of nature. A one-way analysis of variance indicates that there is no statistically significant difference between Christian and Muslim respondents in terms of endorsement of dominion-over-nature beliefs. Although a large majority of respondents have reported agreement with the anthropocentric idea that humans have the right to exploit nature to suit their needs, there is also a slightly higher percentage of Muslims (19%) who disagree than Christians (11%). Here too, analysis of variance results suggests no significant relationship between religion and commitment to the belief that humans have a license to exploit nature to suit their material needs.

Table 5: Frequency and mean distribution of the NEP scale items.

NEP items	%SD	%MD	%U	%MA	%SA	(N)
Humans have the right to exploit the resource in the land to suit their needs	10.7	6.1	2.5	23	57.8	244
When humans over-exploit the land it often produces disastrous consequences	2.9	5.8	1.2	12.3	77.8	243
God will always take care of the environment regardless of what humans do on it	19.8	8.7	5.8	15.7	50	242
Plants, animals are supposed to be treated kindly because they are also created by God	2.5	2.1	0.8	8.2	86.4	244
Humans were created to rule over the rest of nature	7	3.3	5	14.5	70.2	244
Humans are severely abusing the natural environment	5	5	7.4	33.5	49.2	244
Desertification, drought, water and land pollution have been highly exaggerated	15.4	7.9	15.4	31.1	29.9	244
The balance of nature is very delicate and easily upset	5.4	7.4	19	32.2	36	244
The earth has plenty/unlimited natural resource such as water, trees and land to support human's consumption	3.7	4.1	2.9	12.8	76.4	244
If we continue to exploit land resources as we have been doing, we will experience a major ecological crisis	6.6	6.2	3.3	20.2	64	244

Another pattern observable from the results of the analysis is that nearly all respondents (including those who hold pro-environmental worldviews) believed that the earth has an unlimited number of resources to support human needs. Here, the level of agreement is slightly higher among Christian respondents (96%) than Muslims (90%). However, a significant majority of respondents (more than 80%) still agreed with NEP assertions that humans are severely abusing nature and that if this abuse continues there is a possibility of an ecological crisis. Also, a large majority of the respondents (86%), including those who reported dominion-over-nature orientation, agreed with the NEP assertion that plants and animals, like humans, are supposed to be treated kindly. This confirms Dunlap and Van Liere's conclusion that "the public may hold 'inconsistent' attitude, endorsing contradictory ideas without perceiving the conflict between them" [12]. The implications of these 'inconsistencies' in environmental worldviews will be discussed later.

Self-reported environmental behavior

The next question addressed in the analysis was whether there are differences in self-reported environmental behaviors of respondents and whether these differences may be attributed to religious identification or other demographic and socio-economic variables, as in the case of environmental attitude. To answer these questions, first, respondents' self-reported environmental behavior was computed for each of the 9 items that constituted the scale. Based on their individual scores, which were awarded out of the total score of 49, respondents were grouped into three clusters, namely low, moderate and high pro-environmental behavior, as follows:

- i. A total score of less than 22.5 (50%) is classified as low pro-environmental behavior.
- ii. A total behavior score higher than 22.5 (50%) but less

than 33.75 (75%) is considered moderately pro-environmental.

- iii. A total behavior score higher than 33.4 is considered highly pro-environmental.

Scores for environmental behavior indicate that the majority of respondents (64%) reported moderate pro-environmental behavior, while 4% and 33% have reported high and low pro-environmental behavior respectively. The frequency distribution for the 9-item scale shows that only about 10% of respondents indicated that they had planted trees to conserve the environment very often, while 7% reported that they often planted trees to conserve the environment. About 14% reported discouraging others from cutting down trees very often, while another 14% indicated discouraging such behavior often. Similarly, only about 6% and 12% of the respondents indicated that they very often and often stopped buying products that cause harm to the environment, respectively. Also, 24% and 21% of respondents said they encouraged their families and friends to use water moderately, very often and often. Further, only 11% reported picking up litter that was not their own very often and 8% percent said they often picked up litter that was not their own. These responses indicate low level of participation in both private and public sphere pro-environmental behavior.

For the negatively worded items, the results show that the majority of respondents (72%) mentioned that they used firewood: very often (29%), often (15%) or sometimes (28%). About 65% reported that they used plastic bags, out of which 27% said they used plastic very often, 17% said they used it often, while 20% said they only used plastic bags sometimes. Similarly, fully 61% of the respondents indicated that they disposed of plastic bags on the surface instead of in bins, with 15% reporting participating in such behavior very often, 14% often and about 34% sometimes. When respondents were asked to indicate how often they dumped garbage on refuse heaps and gullies, 18% answered very often,

22% often, while 21% said sometimes.

To ascertain whether there is a statistically significant difference in the self-reported environmental behavior of Christian and Muslim respondents, an independent t test was conducted. The test found no significant difference in the reported environmental behavior of Christians ($n = 63$, $m = 25.00$, $SD = 3.70$) and Muslims ($n = 168$, $m = 24.39$, $SD = 5.24$) $t(157.263) = 0.993$, $p = 0.322$. Since self-reported environmental behavior was found to be the same among the two religious groupings, the analysis examined differences in terms of demographic and socio-economic variables. First, no significant difference in the mean environmental behavior scores of males ($n = 180$, $m = 24.70$, $SD = 4.98$) and females ($n = 51$, $m = 24.04$, $SD = 4.46$), $t(229) = -0.855$, $p = 0.394$ was found. Second, there is also no significant difference in the levels of pro-environmental behavior among respondents with higher incomes and those with lower incomes, as independent t test results indicate no statistically significant difference between the mean environmental behavior scores of respondents with an annual income of $< \text{£}1000$ ($n = 66$, $m = 24.03$, $SD = 5.51$) and $> \text{£}1000$ ($n = 59$, $m = 25.15$, $SD = 4.28$), $t(120.67)$, $p = 0.204$. However, as observed with the NEP scores of the respondents in this sample, a one-way ANOVA test revealed a statistically significant difference in the levels of environmental behavior of respondents with no formal education and those with tertiary education $p = 0.008$. Those with secondary education do not differ significantly from the other two groups. In this case also, the analysis found little support for White's hypothesis that religion has negative influence on environmental action.

Finally, I examined whether commitment to dominion-over-nature orientation correlated with lower levels of environmental behavior. Here, the Pearson's r correlation test suggests that there is no empirical evidence in this data to support White's thesis that commitment to dominion beliefs ($M = 13.60$, $SD = 2.52$) correlates negatively with pro-environmental behavior ($M = 24.56$, $SD = 4.87$) $r = -.027$, $p = .682$ [>0.05]. If anything, this finding calls for better understanding of religious individuals' own interpretation of dominion, which as the interview data indicates, was not interpreted as license to exploit nature as White and other observers suggested.

Discussion and Conclusion

From the findings presented in this paper, religious influence on environmental attitudes and behavior appears rather complex. Findings from qualitative analysis of interviews clearly suggest that religious doctrines have a strong influence on how participants understand humans' position in relation to the rest of nature. This influence is evidenced by the prevalence of theologically rooted narratives that see humans as being created to exercise authority over nature, of nature as primarily created to provide for human needs and of humans as responsible custodians of nature. However, results from questionnaire data indicate that there is no statistically

significant relationship between religious identification and environmental attitude and behavior. There is, in the discourses that emerged from the interviews, a sense that religious influence on participants' worldviews about human relationship with nature is based on three interrelated but seemingly contradictory notions of a dominion-over-nature position. The widespread support of doctrines that emphasize humans' mastery over nature is consistent with White's hypothesis. However, the interpretation of dominion as stewardship by interviewees and the overwhelming support of ecocentric items in the questionnaire, as well as lack of statistical relationship between commitment to dominion beliefs and lower environmental concern, contradicts White's thesis. The findings on dominion beliefs and environmental concern suggest that contrary to what is speculated in the literature on religion and environment, dominion-over-nature in this data is a complex religious principle/belief that combines attitudes of mastery over nature and stewardship of nature. As a complex principle, dominion belief was found to provide justification for a mastery over nature worldview, a worldview that could lead religious individuals to devalue nature. However, this predisposition to devaluing of nature is limited by an interpretation of dominion as a responsibility to look after nature. Similarly, the finding that both religious identification and support of dominion-over-nature do not translate into difference in terms of levels of environmental concern and their behavior contradicts White's simplistic assumption that dominion belief predisposes individuals to be anti-environment in their attitudes and behavior.

The findings also indicate a strong endorsement of dominion-over-nature doctrine among both Christian and Muslim participants in both interview and questionnaire data, that is, at both congregational and individual levels. In other words, support for dominion-over-nature is the same between Christians and Muslims in this sample. This finding also contradicts White's assumption that Christians were more likely than non-Christians to believe in human dominion over the rest of nature. In this sample, there is no significant difference between Christians and Muslims in terms of support for dominion doctrines. This finding indicates support for theorists such as Hayes and Marangudakis (2001), who hold that a distinction needs to be made between Abrahamic and non-Abrahamic religions instead of Judeo-Christian vs non-Judeo Christian traditions.

In the questionnaire data, there was an overwhelming endorsement of anti-environmental (DSP) statements in the NEP items among both Christian and Muslim respondents. Conversely, in the interview narratives of the clergy, anti-environmental worldviews were clearly dismissed by making reference to religious doctrines that command stewardship of nature. Using the theory of structure proposed by Sewell, Jr, [24] and Sherkat & Ellison [25], this discrepancy can be understood in terms of the interplay between religious and environmental schemas and resources. Based on that model, religious schemas and resources

could have contradictory influences on environmental attitudes and actions. Accordingly, the interpretation of this discrepancy is that the understanding of religious and environmental schemas varied between the two groups, and this variation has translated into different interpretations of environmental issues. As a result, while the narratives of the clergy tended to indicate higher commitment to NEP, the laity had reported an overwhelming endorsement of DSP. Availability of religious resources - in this case knowledge of religious and environmental schemas - might have empowered the clergy to reinterpret and transpose religious and environmental principles to the current debate about environmental problems in ways that emphasize stewardship instead of mastery over nature. As Sewell, Jr. [24] noted, since structural resources can be interpreted in alternative ways, they can empower different actors in different ways, thereby teaching different schemas.

Individual actor's agency is determined by the number of resources available to them at a given period. Thus, difference in resources could explain the discrepancy in environmental worldview between the religious leaders and laity in this sample. An additional interpretation of this finding is that, as Djupe & Hunt [26] concluded, environmental worldviews of members of congregations can only be influenced by the clergy if there is an effective means of channeling environmental information. Perhaps, the lack of such avenues for environmental education within the congregations who participated in this study is responsible for the discrepancy in religious and environmental schemas reported by the two groups.

An important implication of these findings lies in their partial support for theories that stress values, especially religious values, as being important determinants of environmental attitudes. Support for such theories [8,10,25] has been found in this interviews with both Christian and Muslim clerics and is evident in the salience of religious theologies on human-environment relation throughout the data. However, when it comes to the issue of causal powers of religion to influence environmental behavior, the findings from the quantitative data suggest little support for theories that see religious values as principal determinants of environmental behavior. Rather, these findings tend to support the value-belief-norm (VBN) theory proposed by Paul Stern [27]. This theory brought together ideas from the norm activation theory, values theory and New Ecological Paradigm (NEP) to propose that environmentally significant behavior is determined by a combination of causal factors such as environmental worldview (NEP), awareness of consequences of environmental action (AC), perceived ability to reduce threats (AR), and individuals personal norms. In this sample, findings are in agreement with the VBN's theoretical postulation that for beliefs about human-environment interaction to influence environmental behavior, they have to be activated by awareness about the consequences of environmental action, individual's responsibility for taking corrective actions and

individual's personal predisposition to act in environmentally responsible ways. Thus, the lack of support for the hypothesis that levels of pro-environmental environmental behavior are associated with religious identification and support for dominion beliefs could be understood in terms of lack of activation of individuals' personal norms, ACs, and ARs.

Another support for the VBN theory of environmental behavior is found in the relationship between income, level of education and environmental attitudes and behavior. These socio-economic variables were seen to have more impact on environmental behavior than religious identification. Other researchers [25] have contended that religious beliefs and values are not the only factors that influence environmental attitudes and behavior. This conclusion has been supported by this data suggesting that, more than religious affiliation and commitment to dominion beliefs, education and income levels are the most significant factors affecting variation in environmental attitudes and behavior.

Finally, even though both Christian and Muslim groups I studied have demonstrated strong commitments to dominance-over-nature orientation, there is no evidence to suggest that this orientation necessarily predisposes religious individuals to devalue nature and engage in a negative relationship with it. On the contrary, religious individuals themselves perceive this dominion as a divine command to preserve nature. While dominion and stewardship were treated in the wider literature as opposing religious environmental schemas, religious individuals in this sample interpreted stewardship as a component of the dominion command. On this note, even though the White's criticism of Judeo-Christian traditions has been associated with renewed efforts to promote environmental stewardship among religious conservatives [7], his hypothesis has proven inadequate to understanding religion's role in influencing environmental attitudes and behavior. As I suggested elsewhere (Shehu 2015), actors' own interpretation of their beliefs and actions is critical to theorizing religion-environment connection. However, due to over-reliance on statistical measures of environmental worldviews and behavior, much of the existing literature has failed to sufficiently explore religious individuals' interpretation of the dominion command.

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