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Climate Change Related Health Hazards and the Academic Responsibility of Evangelical Bioethicists

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Abstract

This article will explore the academic responsibility of Evangelical bioethicists to address climate change related health hazards. First, it will provide evidence-based data on climate change related health hazards, which disproportionately affect the poor and vulnerable worldwide, and as such are a form of environmental racism. Second, it will look at responses to climate change. So-called "climate change deniers" in the United States—the majority of which are Evangelical—will be addressed and the argument will be put forth that, regardless of the causes of climate change, climate change bioethics is part of the Christian tradition of healing and justice. Focusing on climate health hazards builds consensus across partisan and denominational lines by addressing the result—not the cause—of climate change. Third, the article will confront the academic responsibility of Evangelical bioethicists in addressing climate change related health hazards using the paradigm of H. Richard Niebuhr's *homo dialectus*. It will, fourth, offer public theology and biblical scholarship as ways to engage this matter of moral significance. The conclusion will urge Evangelical bioethicists to develop a framework, such as Evangelical environmental bioethics, to effectively address climate change health hazards.

Keywords:

Climate change; human health; Evangelical theology; H. Richard Niebuhr; responsibility; sustainability; practical theology; theological bioethics

Introduction

Climate change is caused, in part, by greenhouse gas emissions such as carbon dioxide. Although some Evangelicals debate whether climate change is natural or anthropogenic, it is well documented that climate change causes health problems. Complications from climate change related health hazards cause an immense amount of human suffering and add to the burdens of the medical industry. This article will explore the academic responsibility of Evangelical bioethicists in light of this global issue.

"Evangelical" refers to a large number of Protestant denominations, which are often characterized by ecumenism, social justice, promotion of education, and involvement in "the World." Evangelical bioethicists are trained scholars who teach and research in a university, college, seminary, or healthcare facility. They may also be independent scholars or work for a non-profit organization responsible

for policymaking. Unlike other Evangelical academics who work in systematic theology, Old Testament, or New Testament studies, theological ethicists—under which theological bioethics falls—are oriented towards applied theology. Thus, they have the necessary position to write, speak, and teach others to live in a way that is impactful.

First, it will provide evidence-based data on climate change related health hazards, which disproportionately affect the poor and vulnerable worldwide, and as such are a form of environmental racism. Second, it will look at responses to climate change. So-called "climate change deniers" in the United States—the majority of which are Evangelical— will be addressed and the argument will be put forth that, regardless of the causes of climate change, climate change bioethics is part of the Christian tradition of healing and justice. Third, the article will confront the academic responsibility of Evangelical bioethicists in addressing climate change related health hazards using the paradigm of H. Richard Niebuhr's *homo dialectus*. It will, fourth, offer public theology and biblical scholarship as ways to engage this matter of moral significance. The conclusion will urge Evangelical bioethicists to develop a framework, such as Evangelical environmental bioethics, to effectively address climate change health hazards.

I. Social Effects of Climate Change

In 1859, Irish physicist John Tyndall demonstrated that greenhouse gases such as methane, nitrous oxide, fluorinated gases, and carbon dioxide can become trapped in the Earth's atmosphere in a process later termed the "greenhouse effect." Since Tyndall's discovery, scientists have determined that human activities—specifically human population growth and resource consumption—have increased the amount of greenhouse gases in the atmosphere beyond any level in human history. Average global temperatures have increased by nearly one degree Celsius since tracking began. This climate change has produced geophysical consequences like glacial melt, drought, and altered disease vector habitats. It is well documented that climate change causes health problems.

Climate Change Related Health Hazards

According to the World Health Organization, "climatic change is estimated to cause over 150,000 deaths annually" and between 2030 and 2050 climate change related health hazards are "expected to cause approximately 250,000 additional deaths per year" due to thermal extremes and weather disasters, vector-borne diseases, a higher incidence of food-related and waterborne infections, photochemical air pollutants and conflict over depleted natural resources." Temperature extremes cause higher morbidity and mortality as heat waves become more frequent, intense, and longer, while urbanization creates a "heat island" effect. Rising sea levels contribute to an increase in flooding and coastal erosion, storm surges, and damage to infrastructure. Some islands, and thus human habitats, will completely disappear. While people are fleeing tsunamis and flooding, injuries occur.

Both flooding and drought impact food production through reduced crop yields, increased crop losses, and decreased nutritional content in food that is salvageable. Air quality is compromised through pollution and changes in the levels of pollutants.

Altered pollutant dispersal translates to previously immune communities now facing respiratory problems like asthma and lung cancer. The World Health Organization states "air pollution, which is linked to 7 million premature deaths annually, is "the world's largest single environmental health risk."

Climate change related health hazards also include wildfires, tornadoes, and hurricanes. Survivors of these, and other, natural disasters show symptoms of post-traumatic stress disorders, anxiety, and depression. Loss of access to basic elements of life, like clean water and food, cause war and conflict, forced migration, and population displacement. Climate change related health hazards are an international issue, with unique domestic contours.

Within the United States, six specific climate change related events caused more than 760,000 encounters with the healthcare system and over $740 million in health costs. These six events were national ozone air pollution from 2000–2002, the West Nile virus outbreak in Louisiana in 2002, the Southern California wildfires in 2003, the Florida Hurricane Season in 2004, the California Heat Wave in 2006, and the Red River flooding in North Dakota in 2009.

In North Carolina, for example, residents—particularly the poor in rural areas—are subjected to Pfiesteria outbreaks and harmful algae blooms, injury from severe storms, hurricanes, tornadoes, lightning, and floods, contaminated drinking water supplies, upper respiratory problems, and gastrointestinal ailments linked to the flooding and overflow of hog waste facilities. All can be traced to erratic weather.

The Poor and Climate Change

As with much ecological degradation, the poor are absorbing the brunt of the problem. For instance, "socioeconomic factors associated with heat related mortality. . . . include inadequate housing conditions, lack of access to air conditioning, social isolation, chronic illness, as well as psychological and behavioral factors . . . . Many of these factors are found disproportionately in urban areas, particularly among elderly, poor, and non-white individuals." Climate change health hazards exacerbate health disparities.

After a climate event, those without financial means face additional health complications and life disruption because they may lack the economic resources to move and are confined to dilapidated, moldy, or uninhabitable homes. The United States Catholic Bishops note in their statement *Climate Change: A Plea for Dialogue Prudence and the Common Good*, "Projected sea level rises could impact low-lying coastal areas in densely populated nations of the developing world. Storms are most likely to strain the fragile housing infrastructure of the poorest nations" as well as the poorest people within countries. Climate change health hazards can be considered a form of environmental racism because of the effects on the poor within nations—who are mostly ethnic minorities—and on developing countries.

Environmental Racism

Environmental racism is present whenever people are forced to subsist in poverty; when the poor feel the effects—but infrequently the benefits—of an economic system that emits massive amounts of carbon. Environmental racism is just one among numerous, interlocking factors of structural racism. While "the economically well-

off can choose to live amid acres of green…poor people are housed near factories, refineries, or waste-processing plants that heavily pollute the environment." This leads to poor health outcomes, increased disease, and health burdens.

Environmental racism has been a theological concern since the mid 1980s, when "North American churches began turning their attention to environmental racism." At that time, the United Church of Christ undertook a commission on Racial Justice, which led to the publication of the 1987, report *Toxic Wastes and Race in the United States: A National Report on the Racial and Socio-Economic Characteristics of Communities with Hazardous Waste Sites*. The document found that environmental threats such as toxic waste sites, municipal dumping grounds, and hazardous waste facilities were clustered in low-income areas where racial and ethnic minorities dwell. Impoverished locations were deliberately chosen for environmental hazards since the poor generally lack the political resources to mobilize a constituency to lobby against policies that negatively affect their health. As former World Bank economist Lawrence Summer stated, toxic waste was put in places where poor people live because they "don't live long enough to feel the effects." This disgraceful sentiment highlights the double burden of lack of access to healthcare for treatment and shorter lifespans, due in part to barriers to accessing healthcare like finances, geographical proximity, underemployment, and healthcare bias.

A follow-up report to the UCC *Toxic Waste Report* made twenty years later found that little had changed. Linked with a history of colonialism and slavery, environmental racism in the United States is no less than, as Womanist theologian Emilie Townes describes, a "contemporary version of lynching a whole people." Victims of environmental racism are subjected to an insidious and obfuscated form of prejudice, which denigrates human dignity. Instead of complacency, Christians are called to address environmental racism—and indeed, all forms of racism. Thus, a necessary, but not sufficient area for Evangelical bioethicists to address are the climate change health hazards.

II. Responses to Climate Change

In previous decades the term "global warming" was used to describe the increase in average global temperatures, when compared to previous centuries. Climate change is now the preferred term to describe the fluctuations in temperature—both hot and cold—in the globe. That is, there is both global warming and global cooling, with each being more severe. Not all people accept this data as true or relevant to social life. These people are known colloquially as "climate change deniers," but the implications of their beliefs are more nuanced than the label suggests. Understanding the basis for these positions opens dialogue, which can lead to places of consensus.

Climate Change Denial

Climate change denial usually hinges on two separate issues. The first is *if* the climate is changing. Fluctuations in temperature, from the ice age through the medieval warming period, to our current era, are scientifically established. Even so, a fair number of self-identified Evangelicals in the United States are climate change deniers. When surveyed by the Pew Research Center, 31% of white Evangelicals answered "no" when asked, "Is there solid evidence the earth is warming?" This type

of climate change denial is due to scientific skepticism. Skepticism cannot always be addressed; however, it need not be. For theological bioethicists, denial in climate change can be circumvented to arrive at the more pressing issue of climate change health hazards.

The other issue of climate change denial—which is often conflated with, or confused with, the first issue—is the *cause* of these temperature changes. The same Pew survey found that 34% of white Evangelicals said that the earth was warming because of human activity, while 17% said it was warming because of natural patterns. 7% said it was warming, but that the cause was unknown. Evangelicals, who do not believe that humans contribute to climate change, will be reluctant to change personal consumptive habits that contribute to carbon emissions. However, this epistemological barrier can be set aside to focus on consensus about wellbeing, health, and safety from health hazards related to climate and other forms of natural disasters.

Climate Change Bioethics

Evangelical bioethicists cannot be expected to allay the objections to climate data, as that is not usually within their expertise. However, a strategic focus on medicine and health is within the domain of bioethics. Rising sea levels, drought, hurricanes, heat waves, and pollution cause health harms. Moreover, alleviating the suffering of individuals affected by these health issues and preventing further medical problems are within the Christian tradition of healing (Luke 8:50; Jas 5:14-15) and justice (Prov 29:7; Isa 1:17). Discussion and action on healthcare can occur irrespective of what causes the changes in nature. Unlike other debates in theological bioethics, which may have a component of personal responsibility, such as HIV transmission from IV drug use, or health problems related to gluttony, health problems from natural disasters are generally seen as non-moral.

In some cases, natural disasters are seen as directly from God in order to lead to repentance or as punishment for sin. Certainly, the Bible records such instances (e.g., the book of Jonah). Likewise, personal health issues may be seen as divinely caused (e.g., Zechariah's muteness, Paul's "thorn" in the side). Even so, theological bioethicists will still acknowledge the obligation to alleviate suffering and treat health conditions without reference to personal sin, while simultaneously refusing to endorse in activities that might increase personal harms or facilitate sin. For instance, a theological bioethicist would support cardiac care for obese patients while also taking a critical approach to overeating and sloth.

The role of responsibility and personal sin are important factors in climate change health hazards. Greed leads to overconsumption, which accelerates resource use and production of unnecessary goods. These conversations should take place within theological ethics and practical theology, but they are less relevant for theological bioethics. With the current situation of climate change health hazards, the debates about the reality and causes of climate change can be set aside to confront the effects. It is the responsibility of Christians, and specifically theological bioethicists who reflect on the theological aspects of disease and wellbeing, to facilitate global health. This does not need to be argued, only re-stated. In addition to Scripture, the classic work of H. Richard Niebuhr on responsibility is an appropriate reminder that

Evangelical bioethicists have an obligation to address broad medical issues, such as climate change health hazards.

III. H. Richard Niebuhr's *The Responsible Self* and Evangelical Bioethicists

Responsibility is a major moral principle in both the scriptures and in theology. H. Richard Niebuhr identifies three archetypes of responsibility. His ideas presented in *The Responsible Self* are a compelling impetus for theological responsibility in addressing climate change health hazards. To appreciate how Niebuhr comes to the fullness of Christian responsibility, one must begin with the individual. One must begin with man-as-maker. The male pronoun will be retained when referencing Niebuhr's paradigms for translational integrity, however, the generic "man"-as-humankind, is the meaning that should be observed.

Homo faber

Homo faber is described in existential terms, where the human "constructs things according to an idea and for the sake of an end." Niebuhr writes that man-as-maker is "the most common symbol" in moral theory and is teleological in nature. Here the individual asks, "what is my good, ideal or *telos*?" Under this paradigm, actions are deemed to be ethical when they are oriented towards the goal.

Teleological action as morality has been a feature of ethics throughout time. An example of teleological ethics is the Aristotelian view of the good. For Aristotle, all actions are oriented towards the good, which is *arête*. In Christian theology, a Thomistic view of morality is often teleological. Humans aim at the end they are created for—namely, fulfilling the natural law through relationship with God. The agent's reference to the end, "the good," shapes human actions and determines morality. Likewise, in Niebuhr's *homo faber*, individuals are working towards a goal.

Although the teleological articulation of ethics is prevalent in philosophy and theology, ultimately the view is individualistic. The person moves towards a final outcome, but not evaluating her path—or how it will affect others. Since the end goal is the only motivation that matters—not the road on which the person gets there—the moral agent will "reject material which does not fit his purposes."

With respect to climate change related health hazards, the *homo faber* paradigm might advocate for sustainable policies like widespread dissemination of contraception. As an individual, they might support recycling without recognizing the resource use required in production. Because the larger social context is not taken into account, *homo faber* is not a viable option for personal responsibility and is insufficient as a basis for Evangelical bioethicists to address change related health hazards. Niebuhr's next model of responsibility considers relationships within a community; the individual in a society.

Homo politicus

A person aware of her embeddedness within a society will have a different conception of responsibility than one only interested in his or her own moral path. In Niebuhr's description of *homo politicus*, or "man as citizen," the moral agent is recognized as existing in a milieu that both affects—and is affected by—individual actions. Here, the agent behaves and acts according to prescriptive and prohibitive laws. The individual's morality is primarily in relation to the legal or punitive system. In this juridical paradigm, the agent must primarily ask the questions, "to what law shall I consent, against what rebel?" This paradigm is fundamentally deontological and morality is determined simply by following rules.

Deontological morality is reflected in Kantian philosophy where maxims, such as "never treat anyone only as a means, but as an end in themselves," dictate moral actions. The *Decalogue* is an example of Judeo-Christian deontological morality. In both Kantianism and the Ten Commandments, the person accepts that she is part of society, which has rules and boundaries for the good of all people. Morality is primarily in reference to the command: the right.

Deontological morality can hinder responsibility because, for instance, it does not allow for circumstances that may arise which necessitate a breaking of the law, such as stealing food to feed oneself. Niebuhr assumes, "Those who view man this way seek to subordinate the good to the right; only right life is good and right life is no future ideal, but always a present demand." Moreover, *homo politicus* offers little personal freedom by insisting on rote morality. Here, a person relies on institutions, such as the healthcare industry, to take care of all health harms, even those that are a result of human negligence. Consenting to the status quo—in this case the consumer approach to the medical industry—will not investigate the structure itself. For the reasons provided above, H. R. Niebuhr dismisses *homo politicus* as a paradigm of true responsibility. Likewise, Evangelical bioethicists will find *homo politicus* underequipped to respond to climate health hazards.

Given the limitations of both *homo faber* and *homo politicus*, a third paradigm is proposed, which corrects deficiencies and integrates strengths of the two. Niebuhr proposes *homo dialectus*, the "man-in-dialogue," as constitutive of authentic responsibility because the agent is neither a slave to a fixed end or goal—as in *homo faber*—nor uncritically obescient to an authority—as in *homo politicus*. Instead, the moral agent is actively engaged in dialogue with the world around her, in order to enact personal responsibility. It is here, in *homo dialectus*, that Evangelical bioethicists can find the rationale to address climate change health hazards as a contemporary matter of moral significance.

Homo dialectus

The definitive standard of responsibility for H. Richard Niebuhr is a response to a situation, in line with social solidarity—*homo dialectus*. Because Niebuhr is writing as a theologian, response is "not merely to be accountable; it is to answer a vocation." That is, the vocation of being a disciple of Christ. This cosmological commitment distinguishes Niebuhr's articulation of responsibility from other secular models. This high calling, this vocation of the person-in-dialogue, is only possible through the grace of God, indeed the paradigmatic Responsible one—Jesus Christ. "For Niebuhr,

the dominant structure of moral experience is the structure of responsibility." The term "responsibility" is a synecdoche for four dialogical phases which comprise *homo dialectus*. For simplicity, James W. Fowler describes these as "response, interpretation, accountability, and community."

Niebuhr begins his description of *homo dialectus* by stating, "the first element in the theory of responsibility is the idea of response." The potential for response assumes that the person is morally free and unconstrained by a prior goal or law. A free response places the agent in a position to act instead of remaining passive. In academia, this requires free speech. For Christians, it requires liberty. Freedom should not be taken for granted, as many scholars are constrained by institutional norms and Christians may suffer reproach from their denomination for speaking on a topic. Climate change is often seen as a "liberal" concern, but it need not be polemical. Focusing on climate health hazards builds consensus across partisan and denominational lines by addressing the result—not the cause—of climate change. Hence, for Niebuhr, "freedom is prerequisite for responsibility."

Once the potential to respond in freedom is established, the second part of responsibility can occur. Niebuhr writes, "we respond as we interpret the meaning of actions upon us." In the second part of responsibility, interpretation plays a vital role since responsible action is not a spontaneous reaction, but rather a prudential judgment. Upon encountering a particular situation, action is forestalled as responsible agents seek "not only our responsive action but responsive in accordance with our interpretation of the question." For Evangelical bioethicists, the question of interpretation aligns with broader biomedical principles of justice, fairness, and stewardship. Millions of our global neighbors are suffering the complications of severe weather. The situation must be interpreted as a plea to act.

Following the interpretation of the situation, the third element of responsibility emerges as "the anticipation of reaction to our reaction." That is, the responsible agent does not merely decide what she will do, but also considers how others in society will react to her anticipated action, to gauge the collective implications of the decision. In theology, this may be called "reading the signs of the times." In a Rawlsian paradigm, the concept of "reflective equilibrium" is similar. The objective is not to succumb to the complacent ways of the world, but rather recognize oneself accountable within a community of other moral agents.

Major worldwide organizations such as the United Nations, the World Health Organization, and numerous academic research centers across the world have made statements and taken actions to reduce carbon emissions and attend to climate change health hazards. There is international support—and in some pockets of the United States domestic support—for being accountable for the effects of climate change on the wellbeing of citizens.

The fourth aspect of responsibility in *homo dialectus* is not necessarily a prescriptive action, since the agent in dialogue must act uniquely in each situation. In this final stage of responsibility, the agent responds within the community. Niebuhr argues, "the responsible self is driven by the moments of the social process to respond and be accountable in nothing less than a universal community." A non-anthropocentric universal community is, by some estimations, the fullest articulation of Christian theology. The Scriptures start with creation of the natural world and in

the New Testament declare, "For in him all things were created: things in heaven and on earth, visible and invisible, . . . all things were created through him and for him. He is before all things, and in him all things hold together" (Col 1:16-17, NIV). Not all Evangelical bioethicists will assent to this vision of community. Action on climate health is more important than agreement on theological matters tangential to that action.

In sum, *homo dialectus* is characterized both as an individual and as a person in a relationship with society, in ongoing dialogue. The moral objective of the person is neither to construct a morality of her own, nor to follow social commands, but rather to discern the correct action for a particular situation, which then results in an obligation to act with reference to "the fitting." Due to the ever-evolving nature of social conditions, "the 'fitting' thing to do is not determined in advance, but rather discovered in the process of deciding 'what is going on.'" This facilitates the highest form of morality, which includes an active involvement in decision-making.

Authentic morality entails responsible actions in response to, and with the approbation of, the entire community. With regards to ecology and human health, it is well known that people are impacted by climate change health hazards. The United States Conference of Catholic Bishops poignantly state, "In facing climate change, what we already know requires a response." Thus, the question put forth to Evangelical bioethicists is, "How will they respond?"

IV. Evangelical Bioethicists in Public Theology and Biblical Scholarship

Higher education, both through disciplines and within institutions, is responsible to society, students, and its historical profession. Christians are endowed with a supernatural calling imposed over an ordinary, social obligation. In theological education, instructors "must hold firmly to the trustworthy message as it has been taught, so that we can encourage others by sound doctrine and refute those who oppose it" (Titus 1.9, NIV). Christians are advised, "Not many of you should become teachers, . . . because you know that we who teach will be judged more strictly" (Jas 3:1, NIV). Teachers—as individuals—naturally work within a discipline. The academic discipline of theological bioethicists has a particular responsibility to address climate change related health hazards, since human health is the content of bioethics. There are many avenues for Evangelical bioethicists to discharge the responsibility of making others aware of climate change health hazards. Here two are offered: public theology and biblical scholarship. Both fall under the already existing competencies of theological bioethicists.

Public Theology

In public theology, personal religious commitments are not disregarded, but rather form a tapestry of dialogue in which true consensus occurs. Jacques Maritain believed to speak as a Christian and to speak in the name of Christianity are two very different things. Maritain identified two approaches to engaging the responsibility of being a Christian in a secular world. Public theology, at its core, is a translatable gospel. Christian bioethics particularly is adept at public theology, and is naturally suited to articulate a biblical position in the larger society. In this way, ethics as an area of

specialization is advantaged for conversation and transformation on an assortment of topics that are relevant to secular society.

Public theology can take a variety of shapes. Dissemination of ideas through writing and speech—aimed the general public—can be effective. Public theology includes engagement with secular and religious organizations to address the clinical side of climate change health hazards. At its core, public theology allows theological bioethicists to fully engage the world on issues of high importance and urgency.

Biblical Scholarship

Like public theology, biblical scholarship comes in a variety of forms. Academic theologians can draw on numerous resources to construct original curriculum, courses, and class sessions to educate Christians about climate change health hazards. From curriculum comes publications. Written engagement can take shape in policy papers for churches and religious organizations, peer-reviewed articles, monographs, books, and blogs. To complete the loop of responsibility, written work can form the basis for oral dissemination.

Conferences are one obvious place for engagement. On university campuses, invited lectures, grand rounds, student group meetings, and faculty workshops provide opportunities to articulate the health problems associated with climate change. However, the local community should not be overlooked in favor of academia. Speaking to secular interest groups, at bookstores, coffee shops, and pub events reach socially engaged audiences outside the ivory tower. Homiletics and guest preaching remains an undertapped avenue for prophetic speaking on the topic, as well.

The academic profession depends on students to teach in the classroom, peers to engage in the academy, and transmission of ideas. The Bible is not a laminated relic. It is "living and active" (Heb 4:12) and thus able to provide guidance on contemporary issues. It would be negligent to sit idly by while people suffer from climate change health hazards. For Niebuhr, and indeed all engaged in theological bioethics, "the capacity to respond is central to . . . the moral life." Climate change health hazards are a global issue. Even if not individually affected, Evangelical bioethicists are obligated to focus work on those who suffer.

V. Conclusion: Evangelical Environmental Bioethics

In 1976, James Gustafson connected ecology, the common good, theology, and medicine in healthcare, but his work has been largely overlooked by Evangelical bioethicists. Richard O. Randolph rightly linked human health and environmental health as ethical concerns for Christians, but did not make use of the Scripture, nor foundational concepts such as stewardship and creation care for his arguments. Those working within Catholic hospitals have been leading the way in religious environmental bioethics for decades, but Evangelicals do not have the same ties to healthcare administration. Other Protestants working towards sustainability in healthcare tend to separate their faith from clinical settings and may retain a denominational name of a hospital (e.g., Presbyterian Hospital; Baptist Hospital) out of tradition rather than live commitment to that dimension of their faith. These fragmented approaches are an opportunity for Evangelical bioethicists to develop a coherent Evangelical environmental bioethic.

In order to be effective, there ought to be an established framework with which to place the responsibility of Evangelical bioethicists to address climate change health hazards. Evangelical environmental bioethicists can align themselves with other forms of secular and Catholic environmental bioethics and Green Bioethics and could place an environmental ethic in many areas relevant to theological bioethics. Evangelical environmental bioethicists can address broad, societal issues of climate change, justice, and health as a part of public health. Evangelical bioethicists can engage clinical ethics by advocating for resource conservation within health care and hospitals. This would link public health and clinical ethics in a circle of virtue, whereby conservation decreases pollution, which mitigates climate change, and related climate change health hazards are reduced. Taking personal responsibility for health, disease prevention, and climate readiness could also be a form of critical engagement.

Evangelical environmental bioethics itself may be non-anthropocentric or anthropocentric. This article has presented the latter by focusing on climate change health hazards that affect humans. However, as the discipline of Evangelical environmental bioethics emerges, it may also address the impact of human healthcare on the planet, animals, and ecosystems. These two paths highlight the multiple, non-exclusive tactics to discharge the responsibility that Evangelical bioethicists have to respond to climate change health hazards and participate in the healing ministry of Christ.

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25. Edward A. Malloy, "Ethics of Responsibility: A Comparison of the Moral Methodology of H. Richard Niebuhr and Charles Curran," *The Illif Review* 34, no. 1 (1977): 24.
26. Niebuhr, *The Responsible Self*, 49.
27. Niebuhr, *The Responsible Self*, 60.
28. Niebuhr, *The Responsible Self*, 51.
29. Niebuhr, *The Responsible Self*, 53.
30. Niebuhr, *The Responsible Self*, 60.
31. Niebuhr, *The Responsible Self*, 55.
32. Note, there are many points of contact with Niebuhr's view of responsibility and Catholic theology. For instance, Charles Curran discusses responsibility in *The Catholic Moral Tradition Today.* See Charles Curran, *The Catholic Moral Tradition Today: A Synthesis* (Washington DC: Georgetown University Press, 1999) 70-80. James Keenan traces Curran's view of responsibility to Bernard Haring. Keenan writes that Curran was influenced by Haring's "own responsibility ethics, but makes more explicit the claims to relationality." James F. Keenan, *A History of Catholic Moral Theology in the Twentieth Century: From Confessing Sins to Liberating Consciences* (London: Continuum, 2010), 100. Furthermore, *homo dialectus* is similar to Klaus Demmer's concept of the agent conversant with the law. Demmer writes, "the law must foster the sense of public responsibility; yet particularly in our society, with all its complexity, the danger remains that the law will degenerate to a purely technocratic apparatus." Klaus Demmer, *Shaping the Moral Life: An Approach to Moral Theology* (Washington DC: Georgetown University Press, 2000), 82.

33. James Gustafson, "Foreword," in Albert Jonsen, *Responsibility in Modern Religious Ethics* (Washington, DC: Corpus Books, 1968), 3.
34. E. Clinton Gardner, "Character, Virtue, and Responsibility in Theological Ethics," *Encounter* 44, no. 4 (1983): 316.
35. James W. Fowler, *To See the Kingdom: The Theological Vision of H. Richard Niebuhr* (Eugene: Wipf and Stock, 1974), 153–154.
36. Niebuhr, *The Responsible Self*, 61.
37. Gardner, "Character, Virtue, and Responsibility," 323.
38. Niebuhr, *The Responsible Self*, 63.
39. Niebuhr, *The Responsible Self*, 63.
40. Niebuhr, *The Responsible Self*, 65.
41. John Rawls, *A Theory of Justice* (Cambridge, Mass.: Belknap Press, 1971).
42. Niebuhr, *The Responsible Self*, 88.
43. Niebuhr, *The Responsible Self*, 60.
44. Malloy, "Ethics of Responsibility," 26.
45. United States Conference of Catholic Bishops, *Climate Change.*
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