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Nuclear Alarmism and Climate Change Fatalism as a Secular Apocalyptic Religion

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"We were spared a bomb tonight, but I wonder.
I wonder if we weren't destroyed even without it."

The Twilight Zone, "The Shelter"[1]

Introduction

The iconic fallout shelter episode of *The Twilight Zone* aired on October 6th, 1961,

revealing a simple but profound truth about the development of nuclear weaponry that still

resonates within American culture today: although the United States has thus far been spared a

mushroom cloud, the fear of nuclear war has caused other less obvious, but pervasive, damage to

American society. The development and use of nuclear weapons in WWII thrust the United

States into a secular apocalyptic age, replacing utopia with dystopia, encapsulating what Charles

Taylor dubbed "the malaise of modernity."[2] Intellectualism, rationality, and scientific progress

brought Western society farther than ever imaginable—until it backfired. Now many Americans

and others living in countries with nuclear technology live in a world dominated by fear of

humanity's own creation and other dystopian, sci-fi horrors. Nuclear wastelands, sentient

technology, catastrophic weather, and hordes of science fiction creations continue to proliferate

in media and culture, and the consequences of nuclear alarmism impacts other aspects of society,

including attitudes towards mitigating anthropogenic global climate change.

Although modernity has been developing for decades, arguably starting with the initial

industrialization of war in WWI, the development of nuclear weapons accelerated the secular

apocalyptic mindset from 1945 onwards. Initially in the United States, the apocalypse was a

strictly religious concept stemming from John's Revelation in the Bible. However, with the

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[1] "The Twilight Zone S03E03 'The Shelter.'"
https://www.youtube.com/watch?v=ManzhqUrSP4.
[2] Taylor, Charles. *The Malaise of Modernity.* House of Anansi: 1991.

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development of weapons of mass destruction, the apocalypse assumed a second form, a secular one. Now due to nuclear weapons, a very real catastrophic apocalypse can occur at any time without the helping hand of God. Thus, the "secular" apocalypse in this case means anthropogenic. With the development of nuclear weapons, humanity created something capable of destroying human civilization. As Taylor argues, "our dystopias are different from the apocalypses we saw in the past--in the history of the Christians, Jews, Hindus, and others-- because they take a secular form."[3] What changed is that in the religious apocalyptic, God is in ultimate control of humanity's fate. In the secular apocalyptic, humanity becomes its own demise: "Ironically, although we live in a universe where we are in charge, all we see on the horizon is our end. This is dystopia."[4] Secular apocalyptic beliefs are widespread in pop culture, including shows like *Mad Men* and *Breaking Bad,* which (Joustra, R & Wilkerson, A, 2016) analyze in depth in their book *How to Survive the Apocalypse.* The rise of the secular apocalyptic in mass media suggests how pervasive nuclear fear became after WWII, fears that are still keenly felt today.

Although the Nuclear Age began 60 years ago, the psychological and behavioral effects of nuclear alarmism are just as relevant for study today. Colin S. Gray has already argued that the end of the Cold War did not bring a post-nuclear era, but a second nuclear age.[5] By a second nuclear age, Gray is indicating that although nuclear fear is not the same as it was during the height of the Cold War, the potential for nuclear war still influences many aspects of American culture in new and evolving ways.[6] The reality of nuclear weapons is not merely a phenomenon

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[3] Joustra, Robert. Wilkerson, Alissa. *How to Survive the Apocalypse: Zombies, Cylons, Faith, and Politics at the End of the World.* William B. Eerdmans Publishing: Grand Rapids, 2016, 4.
[4] Ibid, 5.
[5] Colin S. Gray. *The Second Nuclear Age.* Lynne Rienner Publishers, UK: 1999, 1.
[6] Ibid, 1.

but a condition[7], a way of existing in American society. One of the consequences of living in a nuclear age is a widespread fatalist mindset towards nuclear disarmament, and even the fate of the planet itself. The journal *Social Problems* identifies the "widespread sense of futility on the part of most Americans who feel that nuclear war is not something they can help avert...[thus] they tend to retreat into fatalistic lethargy."[8] Starting with the creation of nuclear weapons during and after WWII, a paralyzing fatalistic attitude towards the planet's fate has developed in American society. As the current secular apocalyptic culture develops, fatalism has only increased and spread to other phenomena besides nuclear war. Specifically, the secular apocalyptic has given rise to climate change fatalism that discourages mitigation by subtly reminding Americans that the world could end any minute from nuclear war anyway.

If nuclear war is perceived as apocalyptic and inevitable, this would significantly impact how average citizens vote for policies that effect generations ahead of our time. This extends past policies on war and nuclear disarmament, but also attitudes towards mitigating anthropogenic climate change. Per Espen Stoknes in his book, *What We Think About When We Try Not To Think About Global Warming,* raises the question, "Are we humans inescapably locked into short-termism?"[9] The persistent failure of policies that are meant to benefit generations ahead, and the failure of conventional forms of communicating the dangers of global climate change leads me to believe that the more pressing question to ask is: *Why* are we inescapably locked into short-termism? Why haven't we seen significant progress towards mitigating climate change in the last twenty years? My answer to this question comes from a Religious Studies perspective:

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[7] Ibid, 155.
[8] Kenneth D. Rose, *One Nation Underground,* New York University Press, New York and London: 2001, 188.
[9] Stoknes, Per Espen. *What We Think About When We Try Not To Think About Global Warming.* Chelsea Green Publishing: Vermont, 2015. Print, xvii.

the apocalyptic fears surrounding nuclear winter influenced emerging discourse about anthropogenic climate change, causing climate change to be seen as apocalyptic as well; climate change fatalism, born out of the secular apocalyptic, continues to function in American society today as a secular apocalyptic religion. The functionalist theory of religion will help shed light on how a religious concept like apocalypticism can adopt a secular form and subtly influence the actions of people who do not profess a religion at all. These secular apocalyptic beliefs impact climate change alarmists, encouraging fatalist attitudes towards mitigating climate change.

This argument uses the concept of "apocalyptic" in a few distinct ways. The first is defining the secular apocalyptic, a cultural mindset and genre in mass culture. This paper argues that nuclear weapons accelerated the secular apocalyptic since nuclear war could cause a catastrophic ending to civilization at any moment, an apocalypse of its own. Then, climate change fatalism is argued to function itself as a secular apocalyptic religion in American society. Thus, the idea of apocalypse is being used to describe two separate phenomena: the rise of secular apocalyptic culture, and how a phenomenon functions as an apocalyptic religion itself. This paper's thesis has been divided into several sections to help explain how the argument progresses:

1. The rise of the secular apocalyptic in American culture

2. Exploring fatalism and self-fulfilling prophecies

3. The emergence of nuclear winter alarmism and how it influenced climate change discourse

4. Defining and applying the functionalist theory of religion

5. How climate change fatalism fits into the definition of secular apocalyptic religion

6. How climate change discourse could use the apocalyptic to encourage mitigation

7. Conclusion: the ultimately redemptive message of the apocalypse

This paper is split into various sections to help organize and further the thesis outlined above. First, I will discuss the difference between the secular apocalyptic and the religious tradition it evolved from. Then I will discuss the functionalist theory of religion, and then the concept of fatalism as a philosophical idea and how fatalism causes a self-fulfilling prophecy. Then I will discuss the apocalyptic fears inherent in nuclear power, the coining of the term "nuclear winter," and how emerging discussions about anthropogenic climate change were influenced by the concept of nuclear winter, so much so that the ecological apocalyptic emerged. Then I will describe how climate change fatalism fits into the definition of a secular apocalyptic religion using the functionalist perspective of religion, and conclude by examining how climate change discourse could be changed to discourage fatalism and encourage mitigation. Knowing that climate change fatalism functions as an apocalyptic religion could be used to an advantage, since apocalyptic doctrine is inherently hopeful and redemptive.

The first step to discussing how nuclear war and climate change fatalism are connected is to identify and examine the emergence of a non-religious apocalyptic worldview that is unique to the modern age.

Religious v. Secular Apocalypses

The secular apocalyptic emerged from a long-standing tradition of biblical prophetic belief in America. But why are these apocalyptic beliefs so popular in American culture specifically? This section will briefly explain the biblical origin of apocalyptic beliefs, and articulate how nuclear war fits two scholars' definitions of an apocalyptic religion, Frederick Buell and Barry Brummett. While American secular culture was busy forming their own

opinions about the atomic bomb, the Christian religious community faced their own dilemmas. Was the bomb a gift from God or Satan? Would God praise or punish America for using the atomic bomb? Dozens of prophetic works came out in the years following 1945, outlining where the Bible predicted the atomic bomb and where it fits into America's eschatology.[10] Since the spiritual and secular realms overlap, previous scholars have found it difficult to tease apart the many contradictions nuclear prophecy purports. Some premillennialists keep their religious beliefs separate from politics, some use their eschatology to encourage nuclear disarmament, and some go so far to encourage nuclear destruction to usher in the Second Coming.[11] Historian Paul Boyer has done extensive research already on the history of prophetic apocalyptic belief in America and the cultural significance of nuclear war in his works *When Time Shall Be No More, Fallout,* and *From the Bomb's Early Light.*

The majority of apocalyptic beliefs persisting in American culture today originate with the Revelation of John, the last book of the Christian Bible. In its most simple form, "apocalypse" or *apokalypsis* in Greek, means "unveiling" or "revealing".[12] Verses like the following have been re-interpreted and re-imagined by every reader of the Bible, being developed into different ideas of how the end times will manifest. Revelation 12:8-9 states, "*The great dragon was hurled down—that ancient serpent called the devil, or Satan, who leads the whole world astray. He was hurled to the earth and all his angels with him.*"[13] Sometimes this is interpreted this to mean a literal war between angels and demons in heaven, other times authors

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[10] Paul Boyer, *When Time Shall Be No More,* 133.
[11] Ibid, 303.
[12] Alex Heard, *Apocalypse Pretty Soon: Travels in End Time America,* W.W. Norton & Company, New York, 1999, 16.
[13] Revelation 12:7-9, NIV.
https://www.biblegateway.com/passage/?search=Revelation+12&version=NIV

have predicted devastating meteor showers. After WWII, prophetic literature began to interpret apocalyptic scenes as nuclear war, arguing that the biblical writers described nuclear bombs in visions in terms they could understand, such as fire and brimstone.[14] Within an apocalyptic framework, history is defined as linear and determined.[15] A linear timeline for humanity is ingrained in American ideas of progress, and implies that major events in time are pre-ordained by God. Essentially, "apocalyptic" means that humanity is barreling towards its end, bringing both mass destruction and infinite joy from a higher power. John's Revelation continues to be a cornerstone in prophetic belief in religious America, now being incorporated in secular apocalyptic culture.

      Charles Lippy argues in his essay "Waiting for the End" that millenarianism, the belief that a revelation and thousand-year reign of peace is imminent, made America the most fertile ground for apocalyptic beliefs. Lippy argues that the process of Americanization among British colonies "made millenarianism the common vital possession of American Christians."[16] Thus, "The Americanization of the apocalyptic tradition" is central to building an American identity before and during the Revolution.[17] Religious movements that have adopted and continue to adopt an imminent eschaton in their doctrine includes Mormons, Seventh Day Adventists, and Jehovah's Witnesses.[18] Although these groups are more likely to incorporate eschatology into weekly doctrine and are more likely to make predictions about when the Second Coming will

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[14] Boyer, *When Time Shall Be No More,* 142.
[15] Ibid, 34.
[16] Lois Zamora. *The Apocalyptic Vision in America: Interdisciplinary Essays on Myth and Culture.* Bowling Green University Press, 1982, 42.
[17] Boyer, *When Time Shall Be No More,* 69.
[18] Zamora, 43.

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happen, general belief in the Second Coming extends well beyond these niche denominations.[19] This confirms Boyer's argument that "even when downplayed by church doctrine, eschatological belief remain[s] vigorously alive, influencing events in complex and unexpected ways."[20] Apocalyptic beliefs are ingrained in American culture both inside and outside of conservative Christian communities and affect the nation as a whole.

The entrance of nuclear war into American culture can be considered an apocalypse in itself, one that caused apocalyptic beliefs to spill from religious communities into secular culture. Relevant definitions of apocalypse have already been formed by previous scholars. Buell believes that the following four factors of Judeo-Christian apocalyptic tradition parallel the entrance of nuclear war into the American mindset: "sudden rupture with the past, presentation of a revelation, narration of a world-end, and dramatization of judgment."[21] Nuclear war completely changed the meaning of existing in American society. Although already heavily influenced by exceptionalism, having a weapon of mass destruction raised exceptionalism to its height. Americans grappled with simultaneous pride for having and using the atom bomb on Hiroshima and Nagasaki, and fear that retaliation would be swift and brutal.[22] Although the fear of retaliation waned with different political environments, it merely shifted from WWII to Vietnam to Cold War to Iran to North Korea fears about atomic annihilation. It's essential to realize that although the Nuclear Age ended, society did not revert back to what it was before WWII. Nuclear fears continued to evolve, as Gray details thoroughly in *A Second Nuclear Age.*

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[19] Barker DC and Bearce DH (2013) End-times theology, the shadow of the future, and public resistance to addressing global climate change. *Political Research Quarterly* 66(2): 267-279.
[20] Boyer, *When Time Shall Be No More, 46.*
[21] Skrimshire. *Future Ethics,* 13.
[22] Paul Boyer. *Fallout: A historian reflects on America's half-century encounter with nuclear weapons.* Columbus: Ohio State University Press, 1998, 14.

The first two of Buell's four factors of apocalypse, "sudden rupture with the past" and "presentation of a revelation" occurred simultaneously with the development of nuclear weapons. Nuclear power brought both a sudden rupture with the past and new revelations. Atomic weapons were either viewed as a new height of scientific progress and American power, or as the science-fiction horror story "progress turned against us," fearing that humanity had mistakenly created its own demise. According to Boyer, "The atomic bomb announcement was, indeed, a psychic events of unprecedented proportions."[23] Many hopes were inspired by atomic power, everything from dreams of creating a world state to new developments in farming technology.[24] However, the negative effects of nuclear war persisted far longer than its potential benefits. Nuclear power plants boiled and leaked, the optimistic hope of unlimited energy never came to fruition. The atomic bomb's "fundamental message 'civilization can perish' stalled confidence in the meaning of progress" outbalanced its power as a potential benefactor of society.[25] President Truman articulated these realizations in one of his last statements on the atomic bomb: "War's new meaning may not yet be grasped by all the people who would be its victims...The war of the future would be one in which man could extinguish millions of lives at one blow, demolish great cities of the world, wipe out the cultural achievements of the past."[26] The use of atomic weapons changed war after 1945, changed the meaning of living in American society, and introduced terrifying revelations about the dangers of human progress, all of which would be later expressed in pop culture.

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[23] Paul Boyer. *From the Bomb's Early Light: American Thought and Culture at the Dawn of the Atomic Age*. The University of North Carolina Press: Chapel Hill and London, 1985, 21.
[24] Ibid, 34.
[25] Boyer, *From the Bomb's*, 1985, 125, 278.
[26] Boyer, *Fallout,* 1998, 39.

The third of Buell's four factors of an apocalypse is "narration of an end-time scenario." Pop culture became heavily influenced by the secular apocalyptic after 1945, creating world-ending scenarios both influenced by America's history of biblical prophetic belief, yet also wholly separate and unique. According to Boyer, "the idea of nuclear weapons—and the terror they spawned—remained embedded in U.S. mass culture for the next forty years and beyond."[27] These apocalyptic narratives played out in other books like the bestseller *A Canticle for Leibowitz,* shows like *The Twilight Zone,* and now in video games like *Bioshock* and *Fallout.* The continued use of apocalyptic narratives in Western media will be discussed in depth later in this essay, and is one of the strongest indications that although WWII and Cold War fears have diminished, nuclear fears continue to function as a secular apocalyptic religion.

That last of Buell's defining factors for apocalypse is the dramatization of a last judgment, and Buell does not believe that the atomic age fulfilled that last quality. He states, "The bomb brought devastation but not judgment or salvation."[28] However, I disagree, and argue that the Nuclear Age was rich with notions of divine judgment. This can be seen in President Truman's first public statement after Hiroshima and Nagasaki: "We thank God that it has come to us instead of to our enemies; and we pray that He may guide us to use it in His ways and for His purposes."[29] This statement invokes both the ideas of judgment and salvation, and perpetuates notions of American exceptionalism. The atom bomb was argued to have been used for the salvation of Western civilization, redemption for victims of the Holocaust, and judgment on the Japanese. This salvation theme was used in later years, as an argument for using nuclear warfare against Communist enemies. Salvation has even been used to describe the potential

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[27] Boyer, *Fallout,* 1998, 200.
[28] Skrimshire. *Future Ethics*, 16.
[29] Boyer, *From the Bomb's*, 1985, 6.

nuclear war with North Korea, calling a potential strike on North Korea "preventative."[30] The notion of "preventative" nuclear war implies that striking a country with nuclear weapons would save America from later destruction. Thus, the entrance of nuclear war into American fits into all four aspects of Buell's apocalypse.

Barry Brummett has his own definitions of an apocalypse that coincide with Buell's. Brummett argues that an apocalypse must be unexpected, inexplicable, and change what we call "the true society."[31] Although apocalyptic denotes that time is determined, when the actual "end" will happen is unknown. Except for those few who worked on the Manhattan project, the majority of Americans woke up to newspaper headlines that they never dreamed possible. Brummett specifies that not all change creates an apocalyptic mindset.[32] The kind of shift in culture that America experience after the creation of nuclear technology is not one that can be easily repeated by different events, making nuclear alarmism unique. For example, ecological apocalypticists share a similar idea: a secular but uncontrollable force (climate change) is bringing an imminent end to the world as we know it, and with it simultaneous terrible death and destruction and renewal, a return to Eden.[33] Brummett also argues that "The antinuclear movements is based on an apocalyptic premise. It exhibits a fascination with the precise details of the Final Days that can only be called religious."[34] The imminent end associated with apocalyptic narratives fits Brummett's definition of apocalypse as "unexpected."

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[30] David Sanger, 2017. "Talk of 'Preventive' War Rises in White House Over North Korea." *New York Times.*
[31] Brummett, *Contemporary Apocalyptic,* 25.
[32] Ibid, 24.
[33] Skrimshire, *Future Ethics,* 40.
[34] Brummett, 6.

The entrance of nuclear war into American culture also fundamentally changed what we call "the true society." Although previous wars had their share of casualties and weapons of destruction and torture, atomic weapons ushered in an entirely new era of war. Nuclear war introduced "death of a new kind, death without warning, death *en masse.*"[35] Boyer argues that nuclear war also created the "techno-crat," an individual skilled with science and technology yet oblivious to the larger consequences of actions.[36] This is exemplified in everything from burning villages in Vietnam to drone strikes today; nuclear weapons encourage cognitive dissonance from war. Boyer also uses this term to describe scientists behind the creation of the atom bomb, politicians and leaders deliberating about the bomb's potential uses, and arguably for many citizens who have lived under the nuclear threat. It's clear that nuclear war fits into existing definitions of apocalypse. After 1945, American culture suddenly found itself in, and continues to find itself in, a time where death en masse is theoretically possible at any moment. As I discuss in the next section, this collective fear has caused nuclear alarmism to function as an apocalyptic religion in secular society. Nuclear alarmism provides almost a sense of comfort and shared community under the proverbial mushroom cloud that Americans found themselves under, reassuring fatalists that the apocalypse is fated and out of humanity's control.

Fates and Prophecies

Before delving into climate change fatalism, the nature of fatalism and human agency deserves more exploration. "Fatalism" in its most simple form is "the idea that what happens (or has happened) in some sense has to or had to happen"[37]. Thus, climate change fatalism would be the idea that climate change, particularly the feared imminent catastrophic end caused by climate

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[35] Boyer, *From the Bomb's,* 1985, 278.
[36] Ibid, 232.
[37] Solomon, Robert. (2003). "On Fate and Fatalism." *Philosophy East and West,* 53(4):435.

change, *has* to happen, and is therefore out of human control. And if climate change truly is barreling humanity towards an inescapable end, this fatalistic attitude would have a significant impact on perceived human agency in mitigating the negative effects of climate change, and cause fewer practical steps to be taken towards curbing global climate change.

One of the most common misconceptions about fatalism is that fatalism requires belief that a deity is in ultimate control of humanity's fate. Fatalism does not require belief in either a specific theological system or any kind of mysterious agency.[38] For example, ideas about fate exist in cultures that without bringing up the concept of God. Thus, fatalism does not require a religious reading of climate change, and is compatible with a scientific outlook.[39] Fatalism is different from determinism, which argues that if climate change fatalists were to look at events that have happened, they would search for a scientific or causal reason for that event.[40] Those influenced by determinism would find the most logical conclusion for a catastrophic climate change-related event (whether that be God or rising greenhouse gas levels). Using determinism could therefore be a practical alternative to climate change fatalism, which will be discussed further in the final section of the paper. Fatalism is only concerned with the outcome, not with why that outcome happened. This results in feelings of resignation. However, fatalism is often tied up with a sense of destiny, in that events are understood to happen within a larger framework of meaning.[41] This is different than a religious reading of climate change or belief in God because destiny can be understood in a completely secular framework. Therefore, fatalism takes

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[38] Ibid, 435, 439.
[39] Ibid, 437.
[40] Ibid, 435.
[41] Ibid, 439.

away perceived human agency in mitigating climate change by reassuring believers in the ecological apocalypse that climate change is fated and out of human control.

Previous research has thoroughly studied the evolution of American pre-millennialism[42] and how this form of Christian apocalypticism causes decreased concern for the negative effects of climate change. Although Christian apocalypticism certainly causes climate change fatalism among its adherents,[43] the type of fatalism referred to in this paper is secular in nature and does not require belief in a theological apocalypse or theological system altogether. However, fatalism in this paper is also independent of scientific reasons for global climate change. As the following study suggests, "climate change fatalism has nothing to do with whether or not an individual accepts the facts of climate change."[44] This is because fatalism is not concerned with how or why events happen, simply that the outcome is necessary. Again, the "outcome" discussed in this paper is the feared catastrophic ending to society caused by global climate change. Although many studies concerning Christian apocalypticism and climate change fatalism focus on climate change *denial*, this argument focuses on how climate change *alarmism* can also lead to inaction through the use of secular apocalyptic framing.

In their study titled "End times theology, the shadow of the future, and public resistance to addressing global climate change," (Barker, D.C & Bearce, D. H) argue that the Christian apocalyptic mindset has been transformed into a secular concept that affects attitudes towards climate change in those are not biblical literalists. The "American paradox" is the simultaneous

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[42] Sutton, Mathew A. *American Apocalypse: A History of Modern Evangelicalism.* Cambridge: Harvard University Press, 2014.
[43] Jones RP, Cox D and Navarro-Rivera J (2014).
[44] Ibid, 444.

acceptance that global warming is true and disinterest in addressing it.[45] In 2008, three-fourths of

Americans believed that there is substantial evidence for global warming, but in the past decade

little action has been taken on a cultural level.[46] Like myself, these researchers predicted that

Christian apocalyptic beliefs have somehow filtered through secular thought, causing climate

change fatalism even within a secular mindset. They asked the question, "Does Christian

eschatology affect public opinion in an appreciable way?" and found that it does affect public

perceptions of the future.

The "shadow of the future" is the perceived horizon that players in game theory use to

make decisions.[47] If the player's shadow of the future is long, individuals will favor long-term

payoffs and make the appropriate decisions. If the player's shadow is very short, they will favor

short term payoffs and make decisions that benefit most the short-term. Belief in the biblical end-

times shortens an individual's shadow of the future, making individuals more inclined to favor

short-term payoffs. In their study, although only 16% of respondents believed that the Bible is

the literal Word of God, 56% believe in the Second Coming of Jesus, showing that end-times

beliefs influence a wider population than conservative biblical literalists.[48] Therefore the

researchers concluded that yes, Christian eschatology does impact public opinion in a significant

way. The researchers also argue that perceived time horizons will continue to shorten as time

goes on, and the spread of these beliefs makes it a non-partisan issue. These results help explain

why even individuals who acknowledge the reality and severity of climate change are unable to

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[45] Barker, David C., Bearce, David H. (2012). End-Times "Theology, the Shadow of the Future, and Public Resistance to Addressing Global Climate Change." *Political Research Quarterly,* 66(2): 267.
[46] Ibid, 267.
[47] Ibid, 268.
[48] Ibid, 270.

favor long-term payoffs that will benefit four of five generations down the road, which in turn helps explain how climate change fatalism functions as a secular apocalyptic religion. This study also reveals that climate change fatalism is not dependent on also believing in the biblical apocalypse. Since many steps to help mitigate the negative effects of climate change require long-term foresight, mitigating climate change is often seen as hopeless and futile. This study exemplifies how the secular apocalyptic framing used in climate change discourse may initially originate from Christian eschatology, yet now influences secular public opinion in a meaningful way. However, the "shadow of the future" concept, if applied correctly, may actually be a part of the solution to climate change fatalism, as I will discuss in the final part of this paper.

The phrase was initially coined by Axelrod in 1984 to describe the tendency for humans to cooperate in situations where they expect future interactions with the same people.[49] Since there are social punishments for not cooperating, individuals develop a longer-term perspective, and cooperating is encouraged. (Van Lange, P., Klapwijk, A & Van Munster, L. 2011) found that people who are self-interested "are more likely to cooperate when they realize it's in their long-term interest to do so."[50] In this way, shadow of the future may actually be part of the solution to discouraging climate change fatalism. By lengthening an individual's perceived shadow of time and lengthening the perceived social contract one has with his or her community, cooperation in mitigating climate change may be encouraged. One dissenting opinion comes from (McBride, M. & Skaperdas, S., 2014), who argue that a longer shadow of the future encourages conflict, which would be problematic in the possible case of resource shortages due to climate change.[51] This is

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[49] Axelrod, Robert M. *The Evolution of Cooperation.* New York: Basic Books: 1984.
[50] Van Lange, P. Klapwijk, A. Van Munster, L. (2011). "How shadow of the future might promote cooperation." *Group Processes & Intergroup Relations,* 14(6): 857-870, 860.
[51] McBride, M. Skaperdas, S. (2014). "Conflict, settlement, and the shadow of the future." *Journal of Economic Behavior & Organization,* 105: 75-89, 87.

due to the unfortunate truth that conflict becomes more likely if one's adversary has a greater long-term payoff than oneself.[52] Thus, in a potential future where resources become scarce enough to cause interstate conflict, having a longer shadow of the future may in turn make a country more desperate to go to war to gather resources for a longer time frame. However, the shadow of the future is a complex theory used both in game theory and sociology, and its' potential for encouraging cooperation in mitigating the negative effects of climate change should be investigated further.

Climate change fatalism puts society in a much different situation than if determinism predominated. As I will expand upon in the final section of this paper, determinism would reach for reasons and causes of climate change catastrophes, whereas fatalism is simply concerned with the fact that they *must* happen. Therefore, the answer to climate change fatalism is not more education about the facts of climate change. Individual attitudes towards climate change are often unaffected by increased awareness about its scientific validity because fatalism is independent of reasons. Although fatalism is not religious and can co-exist in a scientific worldview, science very well may not be the answer to curbing fatalistic attitudes towards climate change. Unlike determinism, which is "very dependent on scientific reasons of why and how," fatalism is its own how and why; it's seeing climate change catastrophes and saying they happened "because I told you so."[53]

Why does climate change trigger fatalism? Fatalism is inherent in both nuclear alarmism and climate change alarmism since it stems from apocalyptic framing of these global risks. Per Espen Stoknes identifies 5 psychological barriers in his book *What We Think About When We*

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[52] Ibid, 77.
[53] Solomon, Robert. (2003). "On Fate and Fatalism." *Philosophy East and West,* 53(4), 447.

Try Not to Think About Climate Change that help explain why fatalism is such a knee-jerk

reaction to climate change. The 5 "D's" of climate change are: Distance, doom, dissonance,

denial, and identity.[54] First, the negative effects of climate change are all relatively distant from

most individuals. The negative effects of pumping gasoline into a car today won't be seen until

someone's grandchildren are alive. Secondly, the scare tactics used when addressing climate

change do little more than frighten and discourage action. The emotional dissonance associated

with climate change, as exemplified in a shortened shadow of the future in the previous study,

makes it difficult to assign blame or control, causing denial. Finally, the now unavoidable reality

of climate change affects most parts of our identity as an individual living in Western society:

religion, politics, economics, the fate of humanity as a species. All of these factor into fatalistic

attitudes towards climate change. Climate change is "utterly intangible, unreal and real at the

same time."[55] Most relevant to fatalism, climate change presents an uncertain future. Stoknes

argues that as a species we are obsessed with control and certainty, and we often reach to assign

whatever meaning we can to an uncertain situation. This includes connecting climate change

alarmism to a cataclysmic environmental apocalypse.

Even if fatalism does not require belief in a deity or religious system, or demands reasons

for events, it does insinuate that events like environmental catastrophes happen for a larger

purpose. Thus, "The fatalist is interested in the significance of what happens, and that means

fitting it into a narrative that makes sense of our lives."[56] This means regardless of the

anthropocentric nature of climate change, an impending environmental apocalypse is seen to

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[54] Stoknes, Per Espen. *What We Think About When We Try Not To Think About Global Warming.* Chelsea Green Publishing: Vermont, 2015, 82.
[55] Ibid, 40.
[56] Solomon, Robert. (2003). "On Fate and Fatalism." *Philosophy East and West,* 53(4), 452.

have greater meaning in the fate of humanity. Another paradox that persists in climate change denial is that although it is widely known that human activity contributes to increased greenhouse gases, increased catastrophic weather is still perceived as divine in origin.[57] This seems almost backwards: that natural disasters are more likely attributed to notions of God or fate instead of scientifically proven rising temperatures in a sophisticated society does not sit well. However, this is part of the nature of fatalism. Even in sophisticated societies, fatalism is able to flourish because it rebels against intellectualism.[58] This is especially true in cases where intellectualism seems to have failed to solve societal problems, or even make society worse. The development of nuclear weapons is one cited example of how intellectualism may have created our own demise, which will be discussed at length in this paper. In the same way, the predicted environmental apocalypse was created by the very technology that helped Western society advance: industrialization, fossil fuel engineering, etc. Because technology and rationality created the doomsday in the first place, individuals who acknowledge anthropogenic climate change gravitate towards fatalism; not because it provides any solutions or even any reasons for why the doomsday is coming, but perhaps for the simple comfort of knowing that fate is out of humanity's control. Fatalism ironically gives catastrophic events a greater meaning, and absolves people of guilt or responsibility for climate change.

Fatalism discourages human agency in mitigating climate change on two fronts: first by arguing that a catastrophic ecological apocalypse would be inevitable and is imbued with a

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[57] Jones RP, Cox D and Navarro-Rivera J (2014) Believers, sympathizers, & skeptics: Why Americans are conflicted about climate change, environmental policy, and science. Findings from the PRRI/ AAR Religion, Values, and Climate Change Survey. Washington, DC: Public Religion Research Institute, November 22, pg 23.
[58] Bhattacharji, Sukumari. (1982). "Fatalism--It's Roots and Effects." *Journal of Indian Philosophy,* 10(2): 135-154, 149.

higher meaning for humanity, and second by insinuating that humans are not guilty for climate change, and therefore not obligated to mitigate it. (Foust, C. & Murphy, W. 2009) agree with (Barker & Bearce 2013) that having a shorter perceived time frame for the world would discourage individuals from believing they have agency in mitigating climate change.[59] Apocalyptic framing of global climate change encourages fatalism because apocalyptic belief, like fatalism, is rooted in predictions and prophecies, and more often than not leaves humanity out of the decision-making process.[60] Apocalyptic framing also, "makes it difficult to hold humans accountable for pumping greenhouse gases into the atmosphere."[61] If a catastrophic environmental apocalypse is out of human control, then climate change itself is no longer anthropogenic. Furthermore, (Keller, 1999) argues that "Trying to stay responsible to the complex and often terrifying interdependencies constituting the planetary whole often backfires: panic renders us non-response-able."[62] Panic, fueled by uncertainty, causes fatalism by making it seem impossible for individuals to respond to the gravity of climate change, making us non-response-able, and non-responsible for climate change. Barry Brummett in his book *Contemporary Apocalyptic Rhetoric* explains that believers (in any apocalypse, religious or environmental) are "reassured, not by regaining control" and that "rather than encouraging material action or behavioral change, being a true believer resigns the community to inaction."[63] Fatalism encourages believers in the ecological apocalypse that catastrophic weather has higher

[59] Foust, C. Murphy, W. (2009) "Revealing and Reframing Apocalyptic Tragedy in Global Warming Discourse." *Environmental Communication,* 3(2): 151-167, 152.
[60] Ibid, 152.
[61] Ibid, 152.
[62] Keller, Catherine. (1999). "The Heat Is On: Apocalyptic Rhetoric and Climate Change." *Ecotheology,* 7:40-58, 41.
[63] Brummett, Barry. *Contemporary Apocalyptic Rhetoric.* Praeger Publishers: New York, 1991. Print, 37.

meaning, that the causes for it do not matter, and that the proper response is continued inaction. Climate change fatalism is articulated through apocalyptic narratives, which perpetuate a self-fulfilling prophecy.

Climate change fatalism ultimately leaves many in Western society in a self-fulfilling prophecy: believing a catastrophic environmental apocalypse is unavoidable, fated even, and therefore little to no action is taken to mitigate it. The idea of a self-fulfilling prophecy was first articulated by American sociologist W. I. Thomas who wrote "If men define situations as real, they are real in their consequences."[64] Thomas' theorem was then popularized by Robert Merton who in 1948 attempted to use the theorem to tackle racial tensions in the United States. He defined a self-fulfilling prophecy as, "a *false* definition of the situation evoking a new behavior which makes the originally false conception come *true.*"[65] In the case of climate change, the false definition would be something along the lines of, "the negative effects of climate change will cause an unavoidable ecological apocalypse and humanity is powerless to stop it." As a consequence, little to no action is taken on an individual level to help mitigate the negative effects of climate change. Self-fulfilling prophecies are similar to fatalism because they both argue that humanity responds to more than the objective facts of a situation, but the meaning of the situation; at times, only to the meaning of the situation. [66] Merton argues that breaking the cycle of self-fulfilling prophecies is incredibly difficult and not a simple act of will: "The will cannot be turned on and off like a faucet."[67] He argues that the way to break the cycle is to replace the initial false assumption about the situation with a new one. In the case of climate

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[64] Merton, Robert K. (1948). "The Self-Fulfilling Prophecy." *The Antioch Review,* 8(2): 193-210, 193.
[65] Ibid, 195.
[66] Ibid, 194.
[67] Ibid, 197.

change, that would mean replacing assumptions that climate change is tragically doomed to an apocalypse to optimistic attitudes that there is still time, and that individual actions do matter.

Merton agrees, however, that education campaigns are not the cure-all for social problems in America.[68] He acknowledges that social intelligence itself is a "product of distinct social forces" and for the problem he was tackling, racism in 1948, education campaigns would end up being biased.[69] Similarly, it can be argued that education campaigns to encourage actions to mitigate climate change have been relatively unsuccessful. Stoknes argues that "conventional climate communications have triggered more distancing, not increased concern and priority."[70] Although mitigating climate change does require urgency and potential consequences of not addressing climate change could potentially be catastrophic, using apocalyptic narratives or scare tactics encourages the current fatalistic self-fulfilling prophecy. When climate change campaigns are overly frightening, this only encourages the original false assumption that mitigating climate change is beyond humanity's control. This tendency to relate to ecological apocalypse using fate and prophecies is one way that climate change fatalism functions as an apocalyptic religion in secular society. Although fatalism does not require belief in a God or theological system, climate change fatalism does insinuate that an ecological apocalypse is imminent, and that it carries meaning for humanity as a whole. One influencer of climate change fatalism is the constant threat of nuclear war, which is also itself imbued with fatalism and apocalyptic narrative. Discourse on nuclear winter influenced emerging discussions of global climate change to also be framed as an imminent apocalypse. However, the two threats are very different and the

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[68] Ibid, 197.
[69] Ibid, 197.
[70] Stoknes, Per Espen. *What We Think About When We Try Not To Think About Global Warming.* Chelsea Green Publishing: Vermont, 2015. Print, 3.

potentially catastrophic consequences of climate change will not be felt until generations down the road, whereas nuclear winter could theoretically occur at any moment. Next I will discuss how nuclear war became connected with the environment, and how this encouraged climate change to be framed as an imminent apocalypse.

Enter the Wasteland

The threat of nuclear war is permanently connected to the threat of ecological catastrophe. Although there are many other factors that influence global climate change like vehicle emissions, factory emissions, and methane emissions from mass meat farming, nuclear war and anthropogenic climate change share a unique relationship in that they both emerged in public discourse around the same time, and both use apocalyptic framing. The term "nuclear winter" was coined in 1983 by Richard Turco, one of a team of scientists that spent the decade studying the potential effects of nuclear fallout on the environment.[71] Nuclear "winter" was used in their articles instead of nuclear "war" or "weapons" to avoid political friction. Nevertheless, the term solidified for the first time the relationship between climate change and nuclear weapons, "linking pressing Cold War issues to worries about the planet's environmental future."[72] "Nuclear winter" is defined as "worldwide climatic cooling from stratospheric smoke" caused by the use of nuclear weapons, but the term is often used to describe any and all aspects of the "wasteland" that would be left after a global nuclear war.[73] This apocalyptic framing of nuclear winter influenced emerging discourse on global climate change to also be framed as catastrophic.

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[71] Dorries, Matthias. (2011). "The Politics of Atmospheric Sciences: 'Nuclear Winter' and Global Climate Change." *Osiris,* 26(1), 198.
[72] Ibid, 199.
[73] Toon, 37.

One reason why nuclear fears influence anthropogenic climate change to be framed as an apocalypse is because the potential environmental consequences of a nuclear war are themselves catastrophic, and these consequences could theoretically happen at any moment. The potential consequences of nuclear war were studied as early as the observation of black rain after the bombing of Hiroshima.[74] However, these early studies were conducted in secrecy. For example, Harry Wexler, director of research at the U.S. Weather Bureau at the time, studied the effects of nuclear dust under the guise of studying volcanic ash in Project Gabriel.[75] The political atmosphere during the Cold War made studying the negative effects of nuclear weapons taboo, although the fear of a potential nuclear wasteland was being articulated in mass media at the time. Another covert project, Starfish Prime, exemplifies the catastrophic fears associated with nuclear war in the decades following their first use in WWII. In 1962, a thermonuclear bomb dubbed "Starfish Prime" was detonated 250 miles above the Pacific Ocean, one of five nuclear tests done in space. The bomb created an electromagnetic pulse (EMP) much larger than expected, making it impossible to gather data from the explosion. The EMP also knocked out over 300 streetlights in Hawaii, which was over 900 miles away.[76] During this period of nuclear testing, it was not uncommon for nuclear bombs to have unexpected consequences after detonation, further deepening the fear of "human self-destruction" that emerged after 1945.[77] The potential impact of just one nuclear weapon is devastating, and the combination of tens or hundreds would be nothing short of apocalyptic.

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[74] Ibid, 201.
[75] Ibid, 202.
[76] Ibid, 208.
[77] Ibid, 222.

Although scientists started examining the environmental consequences of nuclear war almost immediately after the 1945 bombings (in all fairness, the devastation in Hiroshima and Nagasaki could not be easily ignored), no studies were done on the psychological impact of nuclear war until 17 years afterward.[78] Although other major catastrophic events like severe weather, earthquakes, and warfare before the development of nuclear weapons cause their own kind of trauma, nuclear weaponry creates a collective psychosis that is unique to the modern age. Compared to other global catastrophic risks, nuclear winter could occur quicker, at any time, and would devastate a larger portion of the planet.[79] These factors combined cause lethargy and apathy in people who are aware of the potential for nuclear winter, which is arguably most people living in the United States and in other countries that hold nuclear weapons. Although it would be nearly impossible to study the psychological effects of nuclear war as it effects entire nations and cultures, it has been studied in contained instances, such as case studies of Hirohima and Nagasaki victims and the Three Mile Island nuclear accident.

Although victims of Hiroshima and Nagasaki were not studied until almost two decades after 1945, researchers were able to identify clear signs of sustained psychological trauma that persisted after the event. Even long after the bombings, disaster victims are "apathetic, docile, indecisive, unemotional, and they behave mechanically."[80] Thompson also describes how apathy provides comfort to disaster victims as a form of "wishful fantasy."[81] Apathy prevents victims from confronting personal tragedy, avoiding further psychological stress. Although it is impossible to compare actual victims in Hiroshima and Nagasaki to everyday Americans who

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[78] Thompson, James. *Psychological Aspects of Nuclear War.* Chichester; New York: British Psychological Society and John Wiley & Sons Limited, 1985.
[79] Baum, 70.
[80] Thompson, 12.
[81] Ibid, 13.

only perceive nuclear war as a threat, these case studies provide an example of the kind of psychological stress it can cause.

The Three Mile Island accident provides an example of how quickly "victims," or those who lived near enough to the accident to be personally impacted by the event, resorted to apathy and fatalism even though there was no serious physical destruction. The 2 million people who lived in surrounding areas received 1 millirem of radiation, and the average chest X-ray exposes individuals to 6 millirem of radiation.[82] However, the event was perceived as catastrophic, and during the meltdown people who lived within 5 miles of the reactor felt demoralized, helpless, and depressed.[83] Furthermore, 25% of this study's respondents still felt seriously threatened by the reactor 4 months after the accident, and the surrounding community was still living in fear of "a danger they could not see, hear, or feel."[84] Although the Three Mile Island accident was not a threat of nuclear war, fear of the unknown still caused serious feelings of apathy and helplessness. Nuclear energy and nuclear weapons carry an inherent fear of the unknown and fear of self-destruction. The Three Mile Island accident in 1979 was the closest serious threat of nuclear destruction since the Cuban Missile Crisis in 1962, and the accident permanently damaged American ideals of nuclear technology as a safe, unlimited source of energy. One could say that the visceral fear felt by many living states away from Pennsylvania during the accident made everyone a victim of the psychological effects of nuclear power.

This fear of radiation, of a danger that can not be seen, heard, or felt, causes apathy and fatalism even in people who are not directly impacted by nuclear power themselves, because

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[82] "Background on the Three Mile Island Accident." United States Nuclear Regulatory Commission. https://www.nrc.gov/reading-rm/doc-collections/fact-sheets/3mile-isle.html.
[83] Thompson, 23.
[84] Ibid, 23.

nuclear war could theoretically happen at any time to anyone. Nuclear fears are easily triggered and not easily forgotten. Feelings of apathy and lethargy lead to fatalism by reinforcing the belief that individuals are incapable of preventing nuclear destruction, and are therefore at the mercy of an unseen and unheard danger. Fatalism takes agency away from individuals, which both causes further feelings of helplessness, yet absolves individuals of responsibility in dealing with major dilemmas like nuclear power. As with Hiroshima and Nagasaki victims, apathy reassures that "If I don't react, then nothing has happened."[85] Apathy, fatalism, and the consequential inaction then impacts citizen voting and policy decisions surrounding nuclear power.

The intense fear and consequential apathy caused by nuclear power impacts policy decisions, which Thompson explains using group think. Coined in 1972 by Irving Janis, group think occurs when "a group makes faulty decisions because group pressures lead to a deterioration of mental efficiency, reality testing, and moral judgment."[86] Nuclear fatalism causes symptoms similar to group think since nuclear fatalism is felt on a cultural level in the United States, and discourages nuclear disarmament policy. One symptom of group think is an illusion of invulnerability, and is prominent in nuclear fatalism. Since nuclear weaponry immediately made almost everyone in the United States feel vulnerable to destruction, fatalism fills in this gap by creating an illusion of invulnerability. Fatalism takes away individual agency and therefore individual responsibility, creating the illusion that nuclear war is "not my problem." This cognitive dissonance then gets transferred to the voting booth, helping explain why strong opposition to nuclear arms is historically sporadic and short-lived. The psychological effects of nuclear war are felt by victims in Hiroshima and Nagasaki, those affected by the Three

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[85] Thompson, 12.
[86] What is Groupthink? Psychologists for Social Responsibility. http://www.psysr.org/about/pubs_resources/groupthink%20overview.htm.

Mile Island accident, and by Americans nationwide who are forced to grapple with the destructive potential that nuclear power holds whenever nuclear tensions arise. However, since nuclear power carries an inherent fear of the unknown, it causes fatalism which functions similar to apocalyptic religion by filling in the gaps with a greater meaning and an ontology. When discussions of nuclear winter and anthropogenic climate change surfaced in the late 1970's and on, symptoms of fatalism and group think were already in play, and both global risks were framed apocalyptically.

It was not until 1975 that the environmental impact of nuclear weapons were studied in the open,[87] and many organizations in the 1980's agreed that nuclear winter is a real visceral threat to human civilization.[88] Turco admits in the 2008 article, "Environmental consequences of nuclear war," that many predictions made about nuclear winter in the 1980's were underestimates at best.[89] Advanced climate change models used in recent studies suggest that a very minimal number of nuclear weapons is needed to cause a nuclear winter. Unlike studies in the 1980's, which neglected to include the potential damage caused by firestorms after a nuclear strike, (Toon, Owen, Robock & Turco, 2008) found that the potential aftereffects of a nuclear war could be more devastating than the initial bombs: the indirect effects of nuclear winter (agricultural collapse, reduced precipitation, winter-like temperatures) could result in the loss of one to several billion humans, not including those who perish in the bomb explosion.[90] Their article simulates a potential nuclear war under the Strategic Offensive Reductions Treaty (SORT), also known as the Treaty of Moscow, which was ratified in 2002 to reduce the number

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[87] Toon, Owen B., Robock, Alan, & Turco, Richard P. (2008). "Environmental consequences of nuclear war." *Physics Today,* 61(12): 37-42.
[88] Dorries, 207.
[89] Toon, 37.
[90] Ibid, 40.

of active warheads in the United States and Russia to 1,700-2,200 each by 2012.[91] Although their study showed that this goal still allowed potential for a nuclear winter, having a total of 4,400 nuclear warheads between the two countries would be 6% of the active warheads that existed in 1986. This treaty was replaced with the New START treaty in 2010, with the goal to reduce warheads in both countries to 1,550. However, Turco's article shows that a mere few hundred nuclear warheads exploded in urban areas would be capable of producing a nuclear winter. Under SORT, 4,400 nuclear explosions with 100 kiloton weapons would cause 770 million casualties and 180 trillion grams (Tg) of soot in the atmosphere. For reference, a mere 5 Tg of soot could produce the lowest temperatures on Earth in over a thousand years, and 75 Tg of soot would cause temperatures not seen since the last Ice Age, and cause global precipitation to decrease by 25%.[92] A single United States submarine carrying 144 warheads could generate 23 Tg of soot if those explosions hit an urban area, effectively showing that a single U.S. submarine is capable of producing a nuclear winter.

These findings are significant because they show just how devastating even a small number of nuclear weapons would be for the environment. Thus, nuclear weapons are permanently tied to discussions about the environment and anthropogenic global climate change, and since 1982 "the global consequences of nuclear war became part of the Washington political scenery."[93] Furthermore, the potentially catastrophic consequences of a global nuclear war encourage fatalism. Seth Baum states in his article "Confronting the threat of nuclear winter" that, "As with other global catastrophic risks, nuclear winter might superficially seem like such a big issue that only a select few of the elite insider scientists and policy makers can make a

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[91] Ibid, 37.
[92] Ibid, 39.
[93] Dorries, 216.

difference on it."[94] The threat of nuclear winter offers perhaps even less hope for individual agency than mitigating climate change, causing feelings of hopelessness or even apathy when faced when the potential for nuclear winter. It is my argument that this fatalistic and apathetic attitude towards nuclear winter influenced many to adopt a similar attitude when faced with the threats associated with global climate change. Although other global catastrophic risks can cause fatalistic attitudes, nuclear winter is unique among them because it can occur quickly and at any time.[95] The imminent and catastrophic framing of nuclear winter then influenced the global climate change discourse that emerged soon after.

The connection between the threats of nuclear winter and climate change is unique because they emerged in public discourse around the same time: "Nuclear winter and anthropogenic climate change (through either nuclear weapons, cooling from dust, or heating from production of carbon dioxide) emerged together as exciting and contested focal points."[96] The very term itself, "nuclear winter" suggests that nuclear war has a deep impact on the environment. For this reason, nuclear winter discourse and climate change discourse are not easily separated. Nuclear winter could cause an ecological catastrophe, leading to climate change being framed with a similar potential catastrophic end to civilization. This is significant because nuclear war and anthropogenic global climate change *are not* the same, do not have the same consequences, and should not carry the same apocalyptic fears. Although both nuclear winter and the negative effects of climate change offer potentially catastrophic futures for human civilization, a global nuclear war could happen at any moment and relatively quickly, as Dorries suggests earlier. The negative effects of climate change are just now starting to manifest, and the

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[94] Baum, Seth D. (2015). "Confronting the threat of nuclear winter." *Futures,* 72: 69-79, 70.
[95] Ibid, 70.
[96] Dorries, 200.

consequences of our actions today will not be felt until generations later. Dorries argues that "nuclear winter and the debate around it foreshadowed and structured the subsequent focus on anthropogenic climate change."[97] The debates surrounding nuclear winter passed on apocalyptic framing to the subsequent discourse about global climate change. Although a sense of urgency is needed on a wide scale to mitigate the negative effects of climate change, the apocalyptic mindset many climate change alarmists have now only causes fatalistic attitudes and lethargy. Thus, climate change fatalism adopts apocalyptic framing, and like nuclear war, emerged from the secular apocalyptic and carries an imminent eschatology like an apocalyptic religion. Now, climate change alarmists warn of an impending ecological catastrophe, and this apocalyptic discourse in turn causes climate change fatalism. In this way, climate change fatalism has a complex relationship with the apocalyptic, since they interact in a cyclical way: first, climate change has historically adopted apocalyptic framing, and second, apocalyptic discourse causes climate change fatalism. Thus, climate change fatalism embodies a self-fulfilling—and self-defeating—prophecy that discourages individual mitigation.

Throughout the past several decades of climate change discourse, contemporary environmentalism has warned of an impending ecological apocalypse.[98] Even before the rise of global climate change discourse in the 1980's, "eco-dystopic" fiction emerged as a genre.[99] In the 1950's, eco-dystopias like Wyndham's *The Day of the Triffids* and Christopher's *Death of Grass* emerged. Note that these dystopian narratives started forming after the start of the Nuclear Age. (McNeish, 2017) argues that "dystopia has replaced utopia as the dominant mode of

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[97] Ibid, 223.
[98] McNeish, Wallace. (2017). "From revelation to revolution: Apocalypticism in green politics." *Environmental Politics,* 26(6): 1035-1054, 1035.
[99] Ibid, 1037.

speculative cultural imagination," confirming that the ecological apocalyptic emerged out of the secular apocalyptic.[100] Again, the secular apocalyptic argues that humanity has created its own downfall despite being technologically advanced, creating a paradox and a dystopian mindset, one that now influences climate change discourse still today. McNeish also confirms that the ecological apocalyptic is not dependent on religious apocalyptic beliefs: "The apocalyptic encompasses a broad range of beliefs, actions, and social processes centered on cultural disjunctures concerned with 'the end of the world' and thereafter."[101] The secular apocalyptic mindset that emerged after the creation and proliferation of nuclear weapons has significantly influenced climate change discourse since the 1950's, and particularly in the 1980's, causing it to be framed as an imminent catastrophe. Apocalyptic framing of climate change has been thoroughly studied and critiqued since then, and it has been concluded that it discourages mitigation by creating a fatalistic mindset.

Both McNeish and Hulme argue that Cold War fears were of nuclear winter were replaced by climate change fears.[102] Especially after the Berlin Wall fell, it became popular opinion in the scientific community that the negative effects of global climate change were now the "most important apocalyptic threat to Earth's life sustaining ecosystems."[103] Since the very visceral and catastrophic threat of nuclear winter was also based on a cultural relationship to the environment, climate change discourse also naturally gravitated towards the catastrophic. Mike Hulme seconds this argument that the current climate change discourse, "constructed around looming and apocalyptic changes in future climate, finds resonsance throughout the past," and

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[100] Ibid, 1044.
[101] Ibid, 1036.
[102] Hulme, 11.
[103] McNeish, 1044.

that, "humans have always been capable of constructing narratives of fear around their direct or vicarious experiences of 'strange', unknown, or portended climates."[104] Hulme identifies three distinct ways that human culture often relates to strange climates: climate as judgment, climate as pathology, and climate as catastrophe, the most latter being the center of discussion for this paper.[105] Although there are many other responses to global climate change besides apocalyptically-framed fatalism, Hulme argues that humans are naturally afraid of strange and changing environments, and the functionalist perspective of religion argues that one function of religion is assigning meaning to chaos. Therefore, it should not be unexpected that climate change is framed as an imminent apocalypse. Apocalyptic framing of climate change minimizes human agency, furthering a cycle of inaction and an incorrect attitude that climate change is fated and cannot be mitigated.

One example of the dangers of ecological apocalyptic framing is seen through the movie *The Day After Tomorrow*. The 2004 film has been thoroughly studied to see if it has had any significant impact on popular opinion concerning climate change, especially since the makers of the film publicly acknowledged their belief that the film could potentially address climate change.[106] The article "Does tomorrow ever come?" is one such study which gathered empirical evidence that any potential benefits of the eco-dystopic film were short-lived. (Lowe et. al., 2006) used surveys as participants left the theater after seeing the film to assess initial reactions, and followed-up with focus groups a month later to see if the film had any lasting effects.

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[104] Hulme, Mike. (2008). "The conquering of climate: Discourses of fear and their dissolution." *The Geographical Journal,* 174(1): 5-16, 6.
[105] Hulme, 7.
[106] Lowe, T. Brown, K. Dessai, S. de Franca Doria, M. Haynes, K. & Vincent, K. (2006). "Does tomorrow ever come? Disaster narrative and public perceptions of climate change." *Public Understanding of Science,* 15, 439.

Immediately after viewing the film, 44% of respondents said they would try to do more to mitigate the negative effects of climate change; however, focus groups one month later revealed that daily tasks quickly overtook that concern.[107] Furthermore, one respondent compared the experience to watching the zombie film *28 Days Later*: although one might start thinking about how they would prepare for a zombie apocalypse, those ideas are not taken seriously.[108] This confirms that the movie *The Day After Tomorrow* was still overall perceived as a fictional Hollywood film. The researchers also found that a significant number of respondents reported that they were confused about the realistic possibility of the events in the movie, and may have taken the message more seriously if the film had been produced or backed by legitimate scientific organizations.[109] The movie also caused some positive responses, such as the potential for humans to adapt to extreme situations, and that respondents were reassured that future generations will be more prepared to cope with the kind of negative effects of climate change depicted in the film.[110] This study reveals that although the film initially caused a sense of urgency, that sense was quickly lost in the tide of everyday life, coupled with the sense that the movie was little more than a dramatized Hollywood film. The apocalyptic framing used in *The Day After Tomorrow* was not successful in encouraging a sense of agency in mitigating global climate change, and may have even dramatized the dangers of climate change to a point where they are no longer taken seriously, thus confirming Moo's argument that, "Apocalypse can easily become merely another form of entertainment…hence even more deadened to the significance of present life."[111]

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[107] Ibid, 445.
[108] Ibid, 446.
[109] Ibid, 452.
[110] Ibid, 451.
[111] Moo, 941.

Apocalyptic narratives have also been critiqued for their unnecessary victimization of "climate refugees," or those who are forced to migrate due to the negative effects of climate change, such as flooding or loss of arable land. Although (Bettini, 2013) agrees that the potential effects of climate change induced migration could be catastrophic "with epochal impacts on human societies," an apocalyptic framing radically changes the meaning of climate change induced migration.[112] Apocalypticism paints climate refugees as unavoidable, and draws a line between the "normal" present and "post-apocalyptic" after.[113] This sense that mass amounts of climate change induced migration can cause a fatalistic mindset towards helping even current climate refugees. These apocalyptic narratives may even feed restrictive immigration policies and xenophobic attitudes towards refugees.[114] These two examples, one from popular culture and one concerning climate refugees, reveals that apocalyptic framing does not effectively encourage the public to mitigate the negative effects of global climate change.

These studies also confirm McNeish's argument that "Apocalypticism is viewed as counterproductive because it encourages fatalistic attitudes among publics with detract from political agency."[115] Climate change fatalism is heavily influenced by the secular apocalyptic. The, "subliminal, not quite conscious, collectively carried apocalyptic habits are pervasive; and they are not conducive to long-term and sustainable life on this planet."[116] Furthermore, Hulme argues that "The alarmist repertoire uses an inflated language, with terms such as catastrophe, chaos, and havoc, and its tone is often urgent. It employs a quasi-religious register of doom,

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[112] Bettini, Giovanni. (2013). "Climate barbarians at the gate? A critique of apocalyptic narratives on climate refugees." *Geoforum,* 45: 63.
[113] Ibid, 64.
[114] Ibid, 68.
[115] McNeish, 1037.
[116] Keller, Catherine. (1999). "The Heat Is On: Apocalyptic Rhetoric and Climate Change." *Ecotheology,* 7:40-58, 43.

death, judgments, heaven and hell," confirming that climate change fatalism functions as a secular apocalyptic religion.[117] The "alarmist repertoire" can be interpreted as a religious discourse, and fatalism itself as a form of practice.

Although nuclear war and global climate change both fit the definition of an apocalypse, they are secular phenomena and do not exactly fit into traditional ideas of religion like Christianity. However, certain perspectives in Religious Studies acknowledge that some phenomena that are not traditional religion can still function similarly. Capitalism/consumerism is one example often cited. The functionalist perspective of religion is important to study next because it will then be used throughout the argument to classify climate change fatalism as a religion.

The Functionalist Theory of Religion

The functionalist theory of religion was initially developed by sociologist Emile Durkheim, and defines five basic functions of religion: (a) giving meaning and purpose to life, (b) reinforcing social unity, (c) serving as an agent of social control, (d) promoting physical and psychological well-being, and (e) motivating people to work for change.[118] In summary, religion serves to provide meaning to apparently meaningless situations, and order to a chaotic and unpredictable existence. Both the development of nuclear war and the potential negative consequences of climate change threatens our sense of purpose, brings only more chaos, and jeopardizes life on the planet itself. Clinging to fatalistic attitudes provides at least some sense of stability to those grappling with the fear of atomic annihilation or ecological catastrophe, even if that stability is dependent on an imminent apocalypse. Believing in an impending atomic or

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[117] Hulme, 11.
[118] "17.3 Sociological Perspectives on Religion." http://open.lib.umn.edu/sociology/chapter/17-3-sociological-perspectives-on-religion/.

ecological apocalypse is almost more comforting than pure uncertainty about the future. David

Loy has already argued that other secular phenomena, specifically the market capitalist system,

can be considered a religion under the functionalist theory.

David R. Loy's article "The Religion of the Market" exemplifies how secular systems

functioning similar to religion have become incredibly influential in Western society today. The

functionalist view of religion is still applicable, if not perhaps more applicable, today because the

theory offers to "show us what the world *is,* and what our *role* in that world is."[119] Although for

the majority of the article, Loy is arguing that the capitalist economic system is a world religion,

he acknowledges the unique dilemma that "our time of ecological catastrophe" presents: "for

ecological catastrophe is awakening us not only to the fact that we need a deeper source of

values and meaning than market capitalism can provide, but to the realization that contemporary

religion is not meeting this need either."[120] One of the reasons the secular apocalyptic has

proliferated since WWII is because secular "religions" like the religion of the market have

slowly been replacing traditional religion. Loy exemplifies the shift towards the secular Taylor

describes in his *Malaise of Modernity:* the "religion of the market" is one way that humanity

replaces God in the secular apocalyptic. Accordingly, Loy argues that the answer to avoiding the

potentially catastrophic consequences of climate change is not a return to traditional religion.

However, as will be discussed in the final section of this paper, the redemptive and hopeful

aspects of apocalyptic religion could be used as motivation for mitigating climate change.

From the functionalist theory of religion, Loy draws the following argument for market

capitalism as a religion, which can also be applied to nuclear and climate change fatalism: "it is a

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[119] Loy, David R. "The Religion of the Market." *Worldviews, Religion, and the Environment: A Global Anthology.* Wadsworth: Cengage Learning, 2003, 66.
[120] Ibid, 67.

worldview, with an ontology and ethics, in competition with other understandings of what the world is and how we should live in it."[121] Apocalyptic religions regularly compete with other understandings of the world, even within the same religion. Nuclear fears feed into climate change fatalism, creating apocalyptic narratives and lethargy in mitigating climate change. This is similar to how Loy argues that the religion of the market relies on the justification that capitalism is the natural way of being, and the only right way of being. Loy's argues that capitalism does not bring its' adherents true joy; the same can be said for climate change fatalism as an apocalyptic religion. Weber's sociology of religion theory states that religious adherents, "do not enjoy inner repose because they are in the grip of inner tensions."[122] Living under constant threat of nuclear war, coupled with the crippling fear that resources will run dry, sea levels will rise, and severe weather will increase, the secular apocalyptic becomes appealing not because it offers any repose, but because it restores meaning and higher purpose to a situation in which many feels powerless. In this way, the secular apocalyptic mindset associated with climate change fatalism functions as a religion in American society.

One problematic aspect of Loy's argument is the very coining of the term "ecological catastrophe." Loy himself uses the apocalyptic framing that encourages climate change fatalism, again revealing how pervasive apocalyptic framing is when talking about the negative effects of climate change. Once again, this demonstrates the "malaise of modernity," the secular apocalyptic, and the dystopian mindset that underlies much of the current climate change discourse. If dystopia means "liv[ing] in a universe where we are in charge, [yet] all we can see on the horizon is our end," as Joustra describes, Loy exemplifies that paradox.[123] Although he

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[121] Ibid, 68.
[122] Ibid, 69.
[123] Joustra, 5.

points out the flaws of market capitalism and the secular religion it functions as in order to encourage a more mindful, eco-centric approach to the economy, describing climate change in the terms of ecological catastrophe further embodies the secular apocalyptic. Although using apocalyptic framing does not undo the argument Loy is making in any way, it does further encourage climate change fatalism.

Before discussing nuclear winter and climate change fatalism, it will be important to understand how fatalism works and why it discourages mitigating climate change. Fatalism is a vital factor in this argument, since it is responsible for stripping away human agency in the secular apocalyptic. Both fatalism and the apocalyptic rely on fear of the unknown, which is why the two concepts compliment each other so well. The next section of the paper will go into detail explaining how climate change fatalism fits the functionalist definition of a religion.

Fatalism and Functionalism

This paper approaches the concept of apocalypse in two distinct ways. The first, which has hopefully become clear, is how the secular apocalyptic rose and proliferated throughout American culture with the development of nuclear weapons. Then, since nuclear weapons could cause a very real apocalypse, budding discourse about global anthropogenic climate change also adopted an apocalyptic frame, one that has caused climate change fatalism and discourages mitigation. The second way this paper approaches the apocalyptic is by arguing that climate change fatalism itself functions as a religion, one that is secular in nature similar to Loy's "*Religion of the Market.*" Since the religion is secular, it impacts the majority of the population, not only those who believe in the biblical Apocalypse, causing an alarmism that is pervasive and paralyzing for many Americans who acknowledge that climate change is a serious threat to the planet.

In the beginning of his book *Holy Terrors,* Bruce Lincoln approaches the subject of defining religion before delving into the complicated relationship between religion and the September 11th World Trade Center attack, and it is his definition of religion that I draw on to define climate change fatalism as a secular apocalyptic religion. First and foremost, climate change fatalism operates similar to an apocalyptic religion because it presents an imminent eschatology. Much of the current climate change discourse uses scare tactics to inspire mitigation, including warnings of an impending catastrophic end to civilization caused by climate change. This ecological apocalypse is similar to the biblical Apocalypse because it fulfills a judgment of humanity's sin (using too many resources, polluting the earth and atmosphere) and results in a return to Eden. Humans will either no longer exist and nature will be allowed once again to grow freely, or will be forced to start civilization from scratch, hopefully learning to exist more in harmony with nature the next time around. The fact that climate change has been framed apocalyptically has been thoroughly studied already, but the argument that climate change fatalism functions itself as an entirely distinct secular apocalyptic religion will be harder to prove, and will rely on Lincoln's interpretation of the functionalist theory of religion.

Lincoln begins by critiquing Clifford Greetz's definition of religion, one that an entire generation of Religious Studies students was trained to know by heart: "a religion is (i) a system of symbols which acts to (ii) establish powerful, pervasive, and long-lasting moods and motivations in men by (iii) formulating conceptions of a general order of existence and (iv) clothing these conceptions with such an aura of factuality that (v) the moods and motivations seem uniquely realistic."[124] This definition of religion emphasizes ontology, or the system of

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[124]Lincoln, Bruce. *Holy Terrors: Thinking About Religion After 9/11.* Chicago and London: University of Chicago Press, 2006, pg. 1.

meaning that a religion gives human existence, as well as most interior aspects of religion, such as "moods and motivations." However, Lincoln points out that this traditional definition neglects other aspects of religion, namely practice, discipline, and community.[125] Religion is clearly not only an interior matter and not merely a metaphysical phenomenon. Religion affects nearly all aspects of a society and its various communities, so Lincoln appeals to Durkheim. Lincoln states that "religious subjects are bound in moral communities that enjoy their allegiance and serve as a base of their identity."[126] Lincoln leans more towards the communal and institutional sides of religion. Although it can be dangerous to cast a wide net for what can be called a "religion," the rise of modernity and the secular apocalyptic calls for a different set of values that constitute a religion, or else we would not be able to diagnose quasi-religious phenomena like capitalism as a religion like Loy successfully did.

Thus, Lincoln argues that a religion must minimally have the four following qualifiers: (1) A discourse whose concerns transcend the human, temporal, and contingent, and that claims for itself a similarly transcendent status, (2) A set of practices whose goal is to produce a proper world and/or proper human subjects, as defined by a religious discourse to which these practices are connected, (3) A community whose members construct their identity with reference to a religious discourse and its attendant practices, and (4) an institution that regulates religious discourse, practices, and community, reproducing them over time and modifying them as necessary.[127] One of the most unique aspects of this definition is that each qualifier builds off the previous one, ultimately resulting in an institution that continually reaffirms a system of doctrine, practices, and community. These qualifiers beg the question, "What does climate change fatalism

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[125] Ibid, 1.
[126] Ibid, 5.
[127] Ibid, 7.

offer as a religion?" and it can be argued that climate change fatalism has each of Lincoln's progressive qualifiers.

The first qualifier for a religion is discourse, but not just any discourse. Lincoln argues that for discourse to become religious, it must claim transcendental authority, and that religious discourse is distinguished by its "capacity to frame the way any content will be received and regarded."[128] Climate change discourse has been framed time and again as apocalyptic, instantly claiming a transcendental authority. Alarmist discourse on climate change that warns of an impending ecological catastrophe leaves room to be interpreted, "but never ignored or rejected," as Lincoln argues is necessary for discourse to become religious.[129] Furthermore, major environmental groups like Greenpeace using framing techniques to couple a sense of urgency and doom with images of starving polar bears, for example. Climate change fatalism has the capacity to frame how individuals will interpret information regarding climate change, whether it be statistics, facts, anecdotes, movies like *The Day After Tomorrow,* or advertisements for environmental groups. Unfortunately, framing climate change discourse as apocalyptic or catastrophic only causes fatalism and inaction as adherents buckle under the pressure of doomsday scenarios.

The second qualifier Lincoln identifies is a set of practices whose goal is to produce a proper world. As discussed earlier in the paper, the proper response for fatalism is continued inaction, creating a dangerous cycle and self-fulfilling prophecy. Fatalism discourages mitigation by confirming that inaction is the right response to the supposed imminent ecological apocalypse. The very reason climate change fatalism is important to study and important to fight

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[128] Ibid, 6.
[129] Ibid, 6.

is because as a religion, its set of practices is inaction. But since as religious studies scholars we know how practices are established in a religion, whether by communal forces or a single authoritative figure, we can hopefully change those practices to incorporate actions that will help mitigate the worst consequences of climate change.

A group with a set of practices based on a discourse that assumes a transcendent authority will naturally distinguish themselves from other groups, forming meaningful communities. Although it would be tempting to diagnose environmental groups like Greenpeace as an example of a quasi-religious community, it is not the same type of community as the ones involved in climate change fatalism. Groups like Greenpeace consciously separate themselves from other environmental groups and from other sections of the population, like climate change deniers, that they feel do not practice mitigation in the right way. However, people who are actively members of an organization like Greenpeace are likely not practicing climate change fatalism because they are actively participating in mitigating climate change. No, it would be unlikely to find a self-defined group of people who are aware they are believing in and practicing climate change fatalism. In fact, the "community" of climate change fatalists is so large and wide-spread across the United States and other Western countries that it almost operates on a cultural level instead of communal. Some self-proclaimed groups of secular fatalists do exist, such as "doomsday preppers," individuals who prepare for an imminent end to civilization. Although some "preppers" are religious, many do not justify their behavior with traditional religious apocalyptic rhetoric, showing how the secular apocalyptic causes fatalism. Much like traditional religions, climate change fatalism affects most other aspects of a community or culture, including politics and economics. However, the community of climate change fatalists does have a defined idea of "non-observant outsiders" as Lincoln asserts is necessary to consider a community a religious

one.[130] Climate change deniers, for example, are a defined outsider group from climate change fatalists, since the latter firmly acknowledge that climate change is a serious threat to the planet. Climate change fatalists have a much different doctrine and set of practices compared to both climate change deniers and members of groups like Greenpeace actively mitigating climate change. Although the community is loose and widespread, we can identify a community of climate change fatalists by identifying what they are not.

The final qualifier that helps define climate change fatalism as a religion is that all of these factors are combined to become an institution. "Institution" in this argument is taken in a looser sense, since there is no physical "church" of climate change fatalism. (Jordan, A. & O'Riordan, T 1999) helps define cultural institution in his article, "Institutions, climate change, and cultural theory," and defines an institution as "the multitude of means for holding society together, giving it a sense of purpose, and enabling it to adapt."[131] Climate change fatalism is instilled enough as a cultural phenomenon in society that it can be considered this type of institution, similar to how marriage is considered an institution. O'Riordan agrees with Lincoln in that institutions are "continually re-negotiated between conscious human agency and wide structures in society where individuals have little control, like laws, government, and economy."[132] Lincoln argues that an institution can be loosely formed, but must in some sense house the leaders that continually reaffirm the discourse, practices, and community that forms a religion.[133] In climate change fatalism, this would include the leaders in positions where other individuals have little control, such as positions in government where environmental policy is

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[130] Ibid, 7.
[131] O'Riordan, Jordan. (1999). "Institutions, climate change and cultural theory: Towards a common analytical framework." *Global Environmental Change,* 9, 81.
[132] Ibid, 82.
[133] Lincoln, 7.

made. Climate change fatalism functions as an institution because it exists within the balance of individual agency (voting) and seemingly unreachable aspects of society (government leaders who actually write policy). This balance forms what O'Riordan calls the "paradox of constraint" that keeps institutions in power, which begs the question: do institutions shape human behavior or does human behavior shape institutions?[134] The answer is a little bit of both, and the fatalist aspect of climate change fatalism helps keep this cycle going.

Thus, climate change fatalism fits Lincoln's definition of a religion that uses an interpretation of the functionalist perspective. Climate change fatalism has a distinct and transcendent discourse, a set of practices (or non-practices), and a loosely based community and institution that reinforces social norms that discourage mitigating climate change. Additionally, climate change fatalism adopts apocalyptic framing similar to the biblical Apocalypse, in turn functioning as a secular apocalyptic religion in the United States. Climate change functions chiefly as a self-fulfilling prophecy that discourages climate change mitigation by making the supposed impending ecological catastrophe appear apocalyptic and therefore fated and out of human control. However, there are ways to encourage mitigation by tapping into the potential for religions to reinforce practices and social norms. Since Lincoln's qualifiers for a religion build off each other, this must start at the first of Lincoln's qualifiers: discourse.

Reframing Climate Change Discourse

The final section of this paper will draw on several concepts discussed already in this paper to show how they could be used as potential solutions or alternative narratives to climate change fatalism. Although there are many potential strategies for mitigating climate change and various narratives that could be used, there is only room in this paper to discuss a handful, and I

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[134] O'Riordan, 82.

want to focus on inverting different factors that directly encourage climate change fatalism to encourage mitigation. First I will examine how substituting determinism for fatalism could help encourage climate change mitigation. Then I will go back to the discussion of "shadow of the future" and elaborate on how this could be used to encourage policies that will benefit future generations. Then I will examine how nuclear power, the very technology that continues to proliferate in science fiction and post-apocalyptic narratives, could actually be used to help mitigate climate change. Finally, I will discuss how apocalyptic narratives themselves could be used to combat climate change fatalism, since certain apocalyptic narratives incorporate a redemptive, hopeful ending.

Fatalism discourages climate change mitigation by making the supposed impending ecological catastrophe appear fated, pre-determined, and out of human control. Fatalism is not concerned about the reasons why certain major events are fated, but is interested only in their significance and how these events bring meaning to human existence. Climate change fatalism puts society in a much different situation than if determinism predominated. Determinism would reach for reasons and causes of climate change catastrophes, whereas fatalism is simply concerned with the fact that they must happen. Therefore, the answer to climate change fatalism is not more education about the facts of climate change. Individual attitudes towards climate change are often unaffected by increased awareness about its scientific validity because fatalism is independent of reasons. It's long been known that scare tactics only backfire, further encouraging a fatalistic attitude towards climate change.[135]

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[135] Becker, Rachel. "Why scare tactics won't stop climate change." *The Verge.* July 11, 2017, https://www.theverge.com/2017/7/11/15954106/doomsday-climate-science-apocalypse-new-york-magazine-response.

Climate change determinism, on the other hand, offers a more calculated and scientific approach to mitigating climate change by acknowledging the reasons behind catastrophic weather and other natural disasters. Although scare tactics are still widely used in discussions about climate change, optimist campaigns are spreading and encouraging positive thinking that will hopefully lead to positive action. Atmospheric scientist Andrew Dressler told The Verge that although individual actions have little effect on global climate change, collective individual actions do: "One raindrop doesn't carve a canyon, but enough raindrops will."[136] Acknowledging that climate change fatalism has become a cultural mindset and replacing that with determinism would be a first step towards positive collective action. Substituting determinism in for fatalism would hopefully encourage individuals to look at their own contribution to global climate change in a way that is not so paralyzing, and does not inspire feelings of helplessness.

The next potential alternative to climate change fatalism is to use the knowledge that many in American society suffer from a shortened shadow of the future. Again, the shadow of the future in this case is how long an individual thinks the planet will exist. Since, as Stoknes argues, most people are naturally short-termed, it is difficult to fully picture the Earth existing more than one or two generations after the present time. In this case, simple acknowledgment of the problem may be the best step towards overcoming it. Stoknes offers steps in his book *What We Think About When We Try Not to Think About Global Warming* to overcome this cognitive dissonance associated with climate change: (1) make the issue feel near, human, personal, and urgent, (2) use supportive framings that do not backfire by causing negative emotions, (3) provide opportunities for visible action, (4) avoid triggering denial through fear, guilt, and self-

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[136] Ibid.

protection, and (5) reduce cultural and political polarization.[137] These five steps all involve

focusing more on short-term mitigation than long-term. Since the shadow of the future is often

short in individuals, in some only lasting until their grandchildren's generation, it would be

beneficial to focus on mitigation projects that will reap benefits within that timeframe.

The third alternative to climate change fatalism involves using the very technology that

leads to fatalism, nuclear power. In the late 1940's, following the first use of nuclear weapons on

Hiroshima and Nagasaki, Americans were ecstatic about the potential benefits of nuclear energy.

Utopic imaginations painted pictures of a world with limitless energy, utilizing nuclear power for

everything from powering cars to creating radioactive crops that would produce twice their

normal yield. These hopes quickly turned to fears as black rain started pouring on Hiroshima and

nuclear tests had unexpected and disastrous consequences.[138] Despite these fears, nuclear power

can still be considered a "green" technology because it produces energy without creating carbon

emissions. Today, nuclear power plants provide about 20 percent of the United States'

electricity, and nuclear power is the third largest producer of electricity in the country.[139] If

framed as a solution to climate change, and if plants are given the proper funding and

maintenance to increase safety, nuclear power could provide emission-free electricity on a wider

scale.

Public opinion on nuclear power has historically been mixed and is largely dependent on

how politicians frame the issue. In the article, "Framing trade-offs: The politics of nuclear power

and wind energy in the age of global climate change," Sarah Pralle and Jessica Boscarino argue

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[137] Stoknes, 91.

[138] Ropeik, David. 2018. "How the unlucky Lucky Dragon birthed an era of nuclear fear."
https://thebulletin.org/how-unlucky-lucky-dragon-birthed-era-nuclear-fear11546.

[139] "Nuclear Power & Global Warming." Union of Concerned Scientists.
https://www.ucsusa.org/nuclear-power/nuclear-power-and-global-warming#.WrwmiZPwZAZ.

that before the Fukushima Daiichi nuclear disaster in 2011, a "Nuclear Renaissance" was on the horizon.[140] Immediately following the incident, American support for nuclear energy was even lower than after the Three Mile Island incident in 1979, at 43 percent in 2011. Since the Fukushima disaster has almost seven years of distance from public memory, a "Nuclear Renaissance" may be on the horizon again. Although nuclear power is arguably no safer today than it was in 1960, the perceived threat of global climate change is much higher, allowing for a trade-off. Yes, nuclear power has its risks, but the risks of climate change are worse. If politicians were to frame nuclear power as a trade-off in this way, public support may increase in the coming years, since polling data shows that support for nuclear energy increases if presented as a solution to climate change.[141]

The Union of Concerned Scientists (UCS) has published multiple articles with their official stance on using nuclear energy. The UCSUSA states that in order to prevent disastrous consequences from global warming, "The United States must achieve economy-wide net-zero emissions by or before mid-century."[142] Nuclear power offers one option for producing electricity without carbon emissions, despite carrying substantial health and environmental risks. However, nuclear plants are being shut down prematurely due to the high cost of safety maintenance and are being replaced with natural gas, which still produces an unacceptable level of carbon emissions. The UCS formally supports "policies and measures to strengthen the safety and security of nuclear power" so it can one day provide carbon-free electricity to the majority of the country.[143]

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[140] Pralle, S., & Boscarino, J. "Framing Trade-offs: The politics of nuclear power and wind energy in the age of global climate change." *Review of Policy Research,* (28)4:323-346.
[141] Ibid.
[142] "Nuclear Power and Global Warming." UCSUSA.
[143] Ibid.

Ontario is already making changes to their energy sector to make nuclear power more prevalent. On February 23, 2018, Glenn Thibeault, Canada's energy minister, made the statement, "Tomorrow's advanced nuclear technology…will play a key role in addressing climate change—our generation's greatest challenge."[144] Nuclear power provides 60 percent of Ontario's electricity and has successfully both eliminated coal-powered electricity in 2014 and made nuclear energy competitively priced compared to natural gas. Ontario has been a pioneer in nuclear research throughout the past decade, and provides an example of how nuclear energy could successfully power the United States.

Although there are clear health and environmental risks associated with nuclear power, the main obstacle facing the United States' nuclear infrastructure right now is funding. Cuts would need to be made elsewhere to make room for proper care and maintenance of nuclear power plants. With advancements in the safety protocols for nuclear power plants, the potential health and environmental risks would be reduced. Furthermore, as the risks of global climate change continue to mount, public support for nuclear energy will likely increase. Within the next 25 years, it's likely that many American households will be paying a nuclear plant for their electricity—a 1960's Utopian dream finally come true. Although nuclear power accelerated the secular apocalyptic after WWII, the technology used to create the most destructive weapons on the planet could be used for good as well.

The final and perhaps most important strategy to reduce climate change fatalism is by using apocalyptic narratives themselves to encourage mitigation. Some scholars argue that before the development of nuclear weapons, traditional apocalyptic narratives focused more on

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[144] "Ontario's nuclear advantage." World Nuclear News. 28 February 2018. http://www.world-nuclear-news.org/V-Ontarios-nuclear-advantage-28021801.html.

redemption and salvation than annihilation. As Daniel Wocjik articulates, "The prospect of nuclear annihilation threatens traditional religious visions of the apocalypse as a meaningful event…The possibility of a senseless and unredemptive nuclear apocalypse brought about by human ignorance, violence, or accident, is an affront to the religious belief of a morally ordered universe."[145] The secular apocalyptic fundamentally changed the meaning of apocalypse from an event that restores cosmic order and a return to Eden to an event that destroys the natural environment. However, returning to traditional concepts of the apocalypse could restore the redemptive and ordered features of apocalypses.

Moo argues in this article, "Climate change and apocalyptic imagination," that the apocalypse can actually be comforting by serving as a reminder that humans do not know all the answers, and do not need to know them. Moo states, "The emphasis on the necessity of divine revelation that is at the center of apocalyptic literature can function as a salutary reminder of the limitations of human knowing and stand as a warning against scientific reductionism."[146] Arguably, the relentless pursuit of godlike knowledge is what brought nuclear weaponry and the secular apocalyptic in the first place, which ultimately backfired. Moo argues that since the apocalyptic highlights the gap between human knowledge and divine knowledge, the traditional apocalyptic could discourage scientific reductionism of complex problems like climate change. Global anthropogenic climate change is not just a scientific problem, but a social, economic, and religious dilemma that operates in the gray area. Furthermore, the apocalyptic "holds a vision of hope that is not finally dependent on human action or perfect knowledge."[147] Although it may seem to be a paradox, reassuring individuals that mitigating climate change is not fully

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[145] Wocjik, 315.
[146] Moo, 943.
[147] Ibid, 944.

dependent on human action could help encourage positive action by reducing pressure. Finally, Moo reminds us that, "stories of potential catastrophe ask us to consider what we don't want to lose."[148] The apocalypse could be a helpful tool in mitigating climate change if framed in a way that emphasizes health, community, and family, and what could potentially be lost.

(Zamora, 1982) and (Foust, 2009) also discuss how reframing apocalyptic narratives of climate change could encourage mitigation. They both argue that the apocalypse is inherently a positive event, one that is supposed to bring salvation and a return to Eden. Zamora argues that "prophetic and apocalyptic traditions are fundamentally optimistic about the course of history: history is the time within which God's plan for humanity is fulfilled."[149] The apocalypse insists that the world has a higher meaning and cosmic order, and will not be allowed to fall into ruin without eventual restoration. When applied to climate change fatalism, this attitude could bring greater meaning to mitigation strategies by assuring individuals that even small actions are part of a larger cosmic order that is restoring the planet. Zamora also argues that the apocalypse is ethical because it does not assert that evil actions are the most significant over the course of history. She argues that apocalypses, "insist that the ultimate significance of the the evils of history is the triumph of God's righteousness and the redemption of humanity."[150] The fundamental story of the biblical apocalypse is the triumph of God over Satan, and of redemption over sin. Climate change fatalism would be discouraged if this narrative is emphasized in climate change discourse instead of the annihiliation aspect of apocalypse.

(Foust, 2012) focuses on the potential for apocalyptic framing to inspire human agency instead of minimize it, arguing that, "apocalyptic discourse is inherently ambivalent, offering the

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[148] Ibid, 946.
[149] Zamora, 21.
[150] Ibid, 28.

possibility to inspire human agency even within a ruinous scenario."[151] The biblical Apocalypse emphasizes the ability to people to turn to God and be saved up until the last moment, and this could be framed to inspire human agency and climate change mitigation. Often the secular apocalyptic framing of climate change discourse is discouraging, lamenting that it is already too late to mitigate the worst consequences of climate change. Apocalyptic framing could remind communities that there is always time to take action and be redeemed. Redeemed in this sense would mean stopping "sinful" actions such as using too many resources, and succumbing to fatalistic attitudes that lead to inaction. Since religions are built and maintained through collective social norms, reframing apocalyptic narratives of climate change may help change social norms to make climate change mitigation a dominant part of everyday life. As Hulme suggests, "Climate change is not a problem waiting for a solution . . . but a powerful idea that will transform the way we develop."[152] Global climate change offers American society a chance to further advance in scientific technology and transform everyday culture from anthropocentric to eco-centric.

The goal of all the strategies I've outlined is to nurture individual and collective efficacy, and to increase awareness about global climate change in a way that does not lead to crippling fear of the future. Since climate change is often not experienced by people directly, direct confrontation with facts and future estimates likely will not lead to action. Instead, (Van der Linden, S. Maibach, E. & Leiserowitz, A., 2015) suggest appealing to specific social contexts to encourage climate change within local communities. Since "the role of experience has been largely ignored in climate policy making," it may be more beneficial to focus on regional and

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[151] Foust, 158.
[152] Ibid, 152.

community risks that present more immediate risk to individuals.[153] Although the risks are more immediate, they are also less global and all-encompassing, which would make mitigating climate change seem more feasible for individuals. Furthermore, (Linden et. al, 2015) argues that focusing on how the negative effects of climate change are happening now could encourage climate change mitigation because, "The discounting of future risk events is a pervasive feature of the way in which human psychology evolved."[154] Climate change fatalism is partially caused by focusing on theoretical future events that are exaggerated by apocalyptic framing. Focusing on local issues that are currently impacting individual communities would prevent many individuals from discounting the risks of unimpeded global climate change. Furthermore, (Scannell L., & Grouzet, F., 2010) agree that "people are more confident that they know the causes of climate change than current environmental conditions or future consequences."[155] Many individuals do not know how climate change is impacting their local communities unless it is right in their backyard, and are even less confident about potential future consequences. Doomsday framing of future events does not increase knowledge or confidence about climate change, and is detrimental to perceived human agency. (Linden et. al, 2015) also acknowledges that most people "intrinsically care about the well-being of others and the environment."[156] This being the case, it would encourage climate change mitigation if local governments and grassroots organizations appeal to intrinsic motivations instead of use apocalyptic framing that does not address individuals on a relatable level.

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[153] Van der Linden, S. Maibach, E. & Leiserowitz, A. (2015). "Improving public engagement with climate change: Five 'best practice' insights from psychological science." *Perspectives on Psychological Science,* pg. 3
[154] Ibid, 3.
[155] Scannell, L. & Grouzet, F. (2010) "The metacognitions of climate change." *New Ideas in Psychology,* 28, 96.
[156] Ibid, 5.

Conclusion

This paper set out to explore the question, "Why do people who acknowledge that climate change is a serious threat to the planet still struggle with mitigating climate change?" There are many different answers to this question that stem from historic, socio-economic, and political roots, as well as many other factors. This paper chose to focus on the dilemma from the Religious Studies, Philosophical, and Psychological disciplines. As Stoknes points out, "climate change is the perfect moral storm, since it brings together three major ethical challenges…first, it is a truly global phenomenon."[157] Climate change presents the "perfect storm" because it does and will continue to impact nearly every aspect of human civilization, and exists within a framework of contradictions and paradoxes. Climate change fatalism is the paralyzing fear and subsequent inaction that results when climate change is predicted to result in a cataclysmic ecological apocalypse. This phenomenon is important to study because climate change fatalism discourages mitigation by minimizing human agency. Psychologists who have studied climate change alarmism revealed that often when people are put under too much pressure, the human psyche seeks to ignore those risks. This helps explain why even those who acknowledge that climate change is a real threat have a difficult time finding motivation to participate in even small mitigation practices like recycling, biking to work, and conserving resources like water and oil.

Climate change fatalism was born out of the secular apocalyptic, which has evolved with the modern age. Although the secular apocalyptic began with the initial industrialization of war in WWI, it was accelerated by the creation and use of nuclear weapons in WWII. Nuclear weapons are unique from other global catastrophic risks because nuclear war and consequential

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[157] Stoknes, 144.

nuclear winter could occur quickly and at any time. Nuclear power is unique in that is it both a product of the secular apocalyptic and a cause for its proliferation in American culture. Although the Cold War is long over, nuclear fears continue to cause fatalism today: "the creation and proliferation of nuclear weapons have fundamentally altered contemporary apocalyptic speculation, fueling fears of global annihilation and evoking widespread fatalism about the future of humanity."[158] The very existence of nuclear weapons thrust American culture into a dystopian mindset by using advanced technology that went too far and potentially created our own destruction. The very nature of dystopia is living in a world with technology that humans created, yet may soon become out of control. As Wocjik describes, "Fatalistic thoughts about nuclear war are associated not only with the tremendous destructive power of the bomb but with the perception that nuclear technology is unmanageable and beyond human control."[159] The secular apocalyptic, expressed in mass media and shows like *The Twilight Zone,* embodies these nuclear fears. These fears are part of a dangerous cycle, where fatalism is the main propellant.

The secular apocalyptic and climate change fatalism both operate in vicious cycles that create a self-fulfilling prophecy. First, nuclear weapons are both a product of the secular apocalyptic and help the current dystopian mindset persist in American culture. Nuclear disarmament policies are for the most part stagnant and depend on mutually assured destruction, and so nuclear weapons continue to exist and continue to serve as a daily reminder of our vulnerability to global annihilation. Fatalism helps turn this wheel because most people see nuclear war as completely out of their control, and are discouraged enough to avoid campaigning for or even voting for nuclear disarmament policies. Climate change fatalism operates in a

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[158] Wojcik, 297.
[159] Ibid, 315.

similar way. Since climate change is now often associated with a catastrophic ecological ending to human civilization, people feel helpless and powerless to stop it, and find it difficult to participate in climate change mitigation. Thus, global climate change continues for the most part unabated.

However, the fatalistic attitude towards climate change is based on incorrect assumptions about the supposed impending ecological apocalypse. The dangers that nuclear weapons pose is much different than even the worst potential negative consequences of global climate change. Whereas nuclear war could occur theoretically at any time, global warming for now is a gradual, nearly invisible process that will reap the worst consequences generations down the road. This paper also sought out to find why climate change has been framed as an impending apocalypse, and I argue that one of the main factors is the creation of nuclear weapons. When scientists began examining the environmental consequences of nuclear war, they dubbed the term "nuclear winter," which admitted that a strong relationship exists between the natural environment and nuclear weapons. If even a relatively small number of nuclear weapons, as few as 50, were detonated in the world's largest urban areas, the atmospheric smoke and ash would thrust the planet into a nuclear winter. This would drastically decrease global rainfall and agricultural output, and current models suggest that the loss of life from these environmental consequences would be even greater than loss of life from the initial bombs themselves. Perhaps scientists realized then just how dependent human life is on the natural environment, and how dangerous nuclear weapons are as a human creation.

Thus, emerging climate change discourse was influenced by these new insights about nuclear war and nuclear winter. Since nuclear winter is itself a catastrophic ecological event, and nuclear weapons had already created a fatalist mindset towards human existence, climate change

discourse also adopted an apocalyptic frame, creating climate change fatalism. Apocalyptic

framing and fatalism compliment each other because both feed off fear of the unknown. The

apocalypse provides in religion a concrete end point for humanity, and a goal to reach. It fills in

the gap between humanity and the divine by creating a narrative where the divine eventually

merges with humanity, bringing salvation, redemption and a return to Eden. With the secular

apocalyptic, "secular" means anthropomorphic; humanity brings about their own destruction.

This neglects the redemptive aspects of apocalypse, making the secular apocalypse a truly

terrifying prospect. Fatalism also relies on fear of the unknown, and asserts that humanity has no

agency in preventing this secular apocalypse. "Fatalism is distinguished from related concepts

such as determinism, fortune, and destiny by the belief that human will or effort is incapable of

altering the outcome of certain events," leading to lethargy and inaction, which applies to both

nuclear disarmament and mitigating climate change.[160] These cycles involving the secular

apocalypse, fatalism, and climate change is constantly in motion and effects a large portion of

American society.

Not only is climate change fatalism a widespread cultural mindset, but it also functions

similar to a religion. The functionalist perspective of religion examines religion from the

discourse, practices, communities, and institutions they form. Durkheim and Weber argue that

religions keep communities in order by forming social norms, changing them as needed. If

climate change fatalism is a religion, the social norm is inaction, and hopefully understanding

that it functions similar to a religion can help scholars change the social norm to include climate

change mitigation. Climate change fatalism fits Lincoln's functionalist definition of religion. In

terms of discourse, climate change fatalism professes a transcendent discourse by incorporating

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[160] Wocjik, 311.

the apocalypse in its doctrine, which is inherently transcendent and minimizes human agency. Climate change fatalism's practice is inaction, and claims that continued inaction is what will bring a proper world. Unfortunately, a "proper world" for climate change fatalists is one where a catastrophic ecological ending to civilization happens, which is why this topic is important to study. Although there is no "church" of climate change fatalism, a clear community of fatalists exists when one considers how social norms keep fatalism in place. Climate change fatalism is an institution similar to how marriage is considered an institution. Based on social norms and confirmed by many policymakers and government leaders, climate change fatalism is perpetually reinforced in Ameican society. In this way, climate change fatalism functions as a secular apocalyptic religion. This knowledge can then be used to encourage climate change mitigation.

Secular apocalyptic framing of climate change leads feelings of hopelessness, fatalism, and consequently inaction. Several alternative frames and narratives for climate change were suggested in this paper, including substituting determinism for fatalism, using shadow of the future to create short-term mitigation goals, using nuclear power as a green energy, and returning to traditional apocalyptic narratives that emphasize salvation and redemption. All of these strategies emphasize individual and communal agency, and focus on the causes and current impacts climate change has on local environments. Since fatalism is fueled by uncertainty, which leads to paralyzing fear and inaction. Stoknes suggests two framed for combating uncertainty: "preparedness and ethics."[161] By this, Stoknes argues that climate change mitigation should focus on preparing local communities for how climate change will impact their environment, and appealing to virtue and family ethics to encourage action. Global climate change gives us a

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[161] Stoknes, 117.

chance to evaluate what matters most to us (health, family, and community) and what we have to do to ensure a healthy environment for future generations.

The secular apocalyptic is a consequence of industrialized war and weapons of mass destruction, and continues to proliferate in science fiction media. Sir John Houghton wrote for the Guardian in 2003 that, "The impacts of global warming are such that I have no hesitation in describing it as a 'weapon of mass destruction'."[162] This apocalyptic framing of climate change has been thoroughly critiqued in climate change discourse, and alternative narratives for global climate change are still developing. Since climate change fatalism functions similar to an apocalyptic religion, the phenomenon holds sway over cultural and social norms. Pinpointing where these social norms could be altered and reinforced by this quasi-religion's authority will be an important step to maximizing human agency in mitigating anthropogenic global climate change.

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[162] Hulme, 11.

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