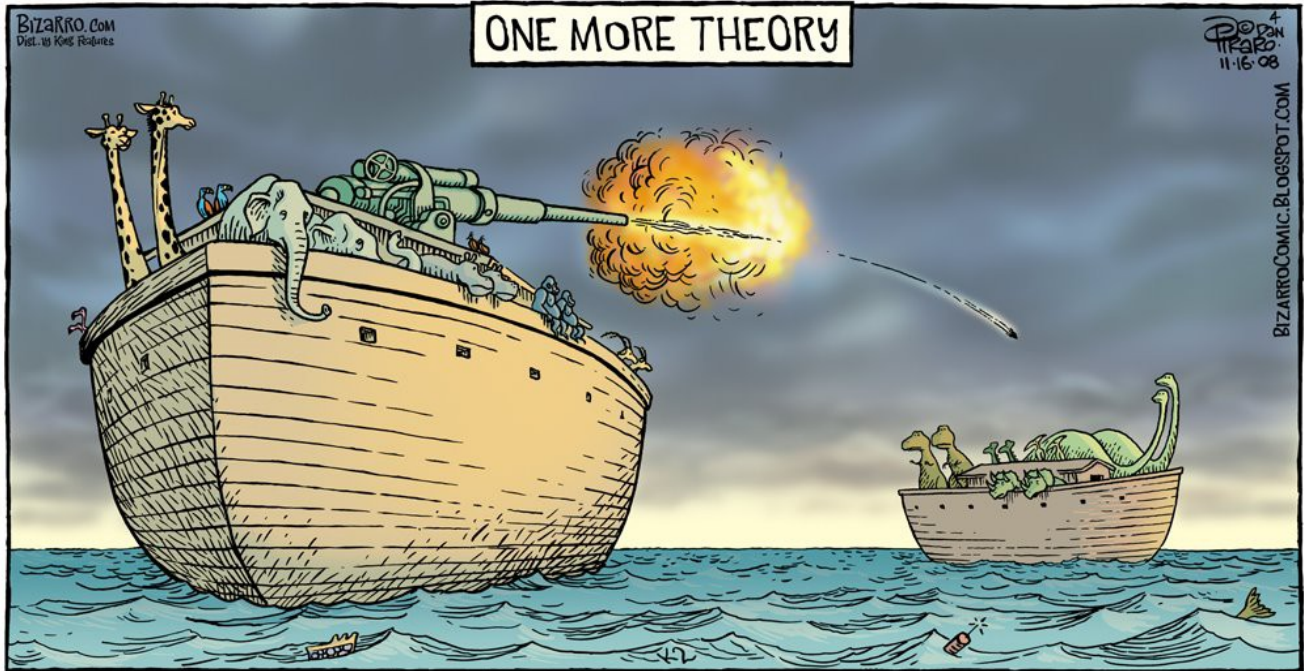


# Contesting the Anthropocene

Fundamentalism, Science and the Environment



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## ABSTRACT

*This paper documents attempts by conservative Christian fundamentalist to redefine science as a dual process involving “operational science” and “historical science.” This argument emerges from a coordinated political strategy to destabilize scientific claims in fields like biology, geology and astronomy, fields often in conflict with literal Biblical worldviews. It argues these concerted attacks on science have political repercussions on the Anthropocene, since these attacks are destabilizing the science underlying the Anthropocene. It also argues these fundamentalist politics are increasingly joining with free-market advocates, and together these two are at the forefront of climate denial politics and the growing attacks on environmentalism. It concludes by arguing that negotiating these religious discourses on Anthropocene environmentalism will be an important focus for future environmental theorizing, especially given the growing power of global Christian fundamentalism and its increasing attacks on the foundations of the natural sciences.*

With the rise of modern fundamentalist movements in the US in the 20<sup>th</sup> century, especially those closely aligned with conservative political movement and the resurgent New Right, there has been a growing conflict between scientific truth claims and fundamentalist worldviews. Although these conflicts have generally focused on the fields of biology, geology and astronomy, the religious objections are actually rooted in a deeper ontological disagreement about how to understand the world. This difference at its core is a philosophical debate about the theoretical or empirical causes and effects used to explain the observations and phenomenon in our daily lives.

But what does this have to do with the Anthropocene or environmental politics? At first glance, the answer might seem to be not much. After all, why should a geologist working on geological time scales or a climatologist exploring the causes of anthropogenic climate change concern themselves with fundamentalists arguments about literal interpretations of Genesis or Revelations? Sure, geologists may encounter occasional arguments about the Grand Canyon being created by a Biblical flood, and all climate scientist have heard the arguments about catastrophic climate change being over-hyped in the media. But does it matter is these arguments originate from a particular religious worldview?

I want to suggest that it does matter, and that we should all care—and by “we” I mean those engaged in environmental politics and the earth sciences, which covers both the formal and informal audiences most engaged with the theory of the Anthropocene. Both groups—activist and scientists—rely on a shared vocabulary and set of political assumptions which allow us to talk about and debate contemporary environmental issues that are not shared by many conservative Christian fundamentalists. This worldview conflict is at the heart of the matter I explore in this paper.

I argue that by better understanding conservative Christian fundamentalist worldviews, scientist and environmentalists who do not identify as a part of this community of believers will be better able to engage in dialogue with such communities. And when dialogue is not possible, as too often seem the case with the militant wing of these religious movements, scientists and environmentalists may be better able to contest conservative religious arguments hostile to environmentalism and/or science.

## **The Anthropocene**

In official scientific debates, the Anthropocene was first proposed in 2000 by Paul Crutzen and Eugene Stoermer as a new geologic time period to replace the current Holocene epoch we are in.<sup>1</sup> The Anthropocene has been proposed to start sometime around 1750 or 1800, which coincides with the clear jump in CO<sup>2</sup> levels from the coal-powered Industrial Revolution. The core claim which informs

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<sup>1</sup> Crutzen, Paul and Eugene Stoermer. "The 'Anthropocene'." *Global Change Newsletter*, 41. 2000. pgs 17–18.

the Anthropocene is that human actions over the past 250 years have finally reached a critical threshold, and these cumulative impacts to various planetary systems are forcing historically unprecedented global-scale changes to the Earth.<sup>2</sup> Put more simply, humans are changing the planet at geologic scales unimaginable a century ago. For some commentators, the Anthropocene is the final proof that humanity has achieved god-like powers to shape and bend the world in conformity its will.

As the issue of climate change, which today often functions as an umbrella term for a wide range of environmental issues (deforestation, overpopulation, species extinction, desertification, etc) gains more attention, the push back against environmental politics has grown more vocal and powerful. This is especially true in the US, where anti-environmental political interests are heavily entrenched. This hostility to environmentalism comes from various sources, key among them free market neoliberals, individual liberty advocates, and conservative religious fundamentalists. When these various political tendencies merge, as has increasingly been happening in the US in recent decades, they are a dynamic political force. They have the grassroots networks and the political and economic clout to oppose any changes that are perceived as anti-capitalist, anti-growth, an infringements on individual rights and liberties, or counter to certain Biblical worldviews.

Although the broader intersection of these forces is a major focus of my research, here I focus on two specific political strategies by this hybrid network of conservative political and religious groups in relation to environmental science. I argue this anti-environmental response included a gradual but calculated effort to overcome challenges to free market logics and fundamentalist worldviews. The often overlapping interests of these two movements allowed conservative religious and economic actors to forge a strategic alliance for mutual benefit against a common enemy—environmentalism.

The two strategies considered here involve the creation an alternative category of scientific practice known as “historical” or “origin” science, and the use of this new category of science to call into question other established scientific practices. By claiming that science could be divided into two distinct categories, “historical/origin science” and “operational/experimental science,” those making such an argument could challenge certain scientific practices they opposed by substituting their own “science” in their place. I explore how this dual-science claim emerged, why it matters, some of the ways in which it is being deployed, and who is behind its use. I conclude by arguing we need to pay more attention to these processes because they have direct repercussions on environmental politics and science within the context of the Anthropocene.

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<sup>2</sup> For the purposes of this paper, I accept the usage of the Anthropocene in its more popular meaning as an emerging environmental discourse, rather than in its strict scientific sense as a tentative proposal for a new geologic epoch.

## “Historical/Origin Science” vs “Operational/Experimental Science”

Before proceeding, two remarks are important here. First, many scientists study the past, such as archaeologists and geologists, and this scientific work is sometimes referred to as “historical science.” That definition of historical science is not the one meant here, although they both share a connection with the past. Second, this distinction between “historical” and “operational” as distinct categories of scientific research has been rejected by the scientific community, especially as used by religious fundamentalists. As Carol Cleland noted in an article in *Geology* magazine titled “Historical science, experimental science, and the scientific method”:

When it comes to testing hypotheses, historical science is not inferior to classical experimental science. Traditional accounts of the scientific method cannot be used to support the superiority of experimental work. Furthermore, the differences in methodology that actually do exist between historical and experimental science are keyed to an objective and pervasive feature of nature, the asymmetry of overdetermination. Insofar as each practice selectively exploits the differing information that nature puts at its disposal, there are no grounds for claiming that the hypotheses of one are more securely established by evidence than are those of the other.<sup>3</sup>

The invention of a religiously distinct sense of “historical” science that is a subordinated category of science was and continued to be an intentional political intervention on the part of fundamentalists—especially creationists—and is of relatively recent origin. Although I am still working on a genealogy of this distinction, the term appears to have originated from at least two separate fundamentalist sources at around the same time. The first was from a 1984 book by Charles Thaxton, Walter Bradley and Roger Orsen called *The Mystery of Life's Origin*, which was written to challenge neo-Darwinian scientific theory of prebiotic or chemical evolution.

In the familiar Popperian sense of what science is, a theory is deemed scientific if it can be checked or tested by experiment against observable, repeatable phenomena. On this basis, relativity theory, atomic theory, quantum theory, germ theory—all have been judged scientific. Since all these theories of science deal with various facets of the operation of the universe, let us call them operation theories of science. Our point of clarification notes the difference between operation theories and origin theories, such as theories about the origin of life. Although the various speculative origin scenarios may be tested against data collected in laboratory experiments, these models cannot be tested against the actual event in question, i.e., the origin. Such scenarios, then, must ever remain speculation, not knowledge.<sup>4</sup>

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3 Cleland, Carol. “Historical science, experimental science, and the scientific method.” *Geology*. November 2001; 29:11. pgs. 987–990.

4 Thaxton, Charles et al. *The Mysteries of Life's Origin*. Dallas: Lewis and Stanley. 1984. pg. 8.

The second was from a 1987 book by Norman Geisler and Kerby Anderson called *Origin Science*, which was written to create common scientific ground for discussion between creationists and evolutionists, who they claimed were unable to find mutual ground up to that point in time. Co-author Kerby Anderson wrote a revealing reflection piece for Probe Ministries in 2007 in which he describes the approach that he and Geisler's took towards developing this idea of “origin” or “historical” science.

The foundational concept in the book was that there is a fundamental difference between operation science and origin science. Operation science is what most of us think of when we talk about science. It deals with regularities. In other words, there are regular recurring patterns that we can observe, and we can do experiments on those patterns. Observation and repeatability are two foundational tools of operation science. Origin science differs from operation science because it does not deal with present regularities. Instead it focuses on a singular action in the past. As we say in the book, "The great events of origin were singularities. The origin of the universe is not recurring. Nor is the origin of life, or the origin of major new forms of life."

We argued that "a science which deals with origin events does not fall within the category of empirical science, which deals with observed regularities in the present. Rather, it is more like forensic science." In many ways, origin science is more like the scientific investigations done by crime scene investigators. The crime was a singular event and often there was no observer. But CSI investigators can use the available evidence to reconstruct the crime.<sup>5</sup>

While these may have been novel concepts at the time *The Mystery of Life's Origin* and *Origin Science* were published (mid-late 1980's), over the past twenty five years this idea has gone from a creationist political intervention aimed at discrediting various scientific fields that rejected Biblical literalism to a taken-for-granted scientific fact. For fundamentalist Christians, some of whom are being trained as scientists to follow these ideas, this distinction is especially problematic. Rather than being presented as a fundamentalist religious claim about science, it is simply presented as a scientific fact.

To better understand how this consolidation process is occurring, we need to examine some of the fundamentalist books where this distinction between “historical” and “observational” science is used. Here are a few varied examples I have come across in my research—some popular and others academic—that highlight this idea of two categories of science from a fundamentalist worldview.

### **Evolution Exposed: Biology (2006)**

To help us understand that science has practical limits, it is useful to divide science into two different areas: operational science and historical (origins) science. Operational science deals with testing and verifying ideas in the present and leads to the production

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5 Anderson, Kerby. “Origin Science.” Plano:Probe Ministries. 2007. <<http://www.probe.org/site/pp.aspx?c=fdKEIMNsEoG&b=4218237&printmode=1>>.

of useful products like computers, cars, and satellites. Historical (origins) science involves interpreting evidence from the past and includes the models of evolution and special creation. Recognizing that everyone has presuppositions that shape the way they interpret the evidence is an important step in realizing that historical science is not equal to operational science. Because no one was there to witness the past (except God), we must interpret it based on a set of starting assumptions. Creationists and evolutionists have the same evidence; they just interpret it within a different framework. Evolution denies the role of God in the universe, and creation accepts His eyewitness account—the Bible—as the foundation for arriving at a correct understanding of the universe.<sup>6</sup>

### **Explore Evolution: The Arguments For and Against Neo-Darwinism (2007)**

Today we continue to have important unresolved scientific controversies in many branches of science. In climatology, for example, scientists disagree over what global warming is, whether it is a natural phenomenon or a man-made problem, how big a problem it presents, and what (if anything) should be done about it. In theoretical physics, scientists disagree over the meaning and importance of string theory...

**Historical science:** an enterprise that observes and studies clues left by past events and uses what is known about present cause-and-effect relationships to reconstruct the history of those events; examples include geology, paleontology, archaeology and forensics.<sup>7</sup>

### **Global Warming and the Creator's Plan (2009)**

Any text that attempts to combine history, science, and the biblical record should properly begin with the historical and scientific arguments for the veracity of the biblical record. Therefore, from a scientific and historical base we will begin there. Dr. Curtis's previous book, *The Last Days of the Longest War*, gives both exegetical and scientific argument for a literal historical six-day creation. This book is centered on plans for you and the earth, especially as it relates to the so-called global warming crisis. Thus, we will argue for a biblical understanding of God's revelation regarding the earth — past, present, and future.<sup>8</sup>

### **Alien Intrusion: UFO's and the Evolution Connection (2010)**

We can divide scientific procedure into two types commonly in usage today. The first is operational or process science. This is the science that everyone is familiar with. We enjoy the benefits of operational science every day. Advances in technology have given us modern medicine, electronics, aviation, and engineering; they have even put man on the moon. These discoveries are built upon principles that we can test and use in experiments — in the present. For example, you can go to the kitchen and boil water at 100° Celsius (at sea level). Tomorrow you can repeat the same experiment and will get the same results. With operational science, there is little room for speculation or guesswork.

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6 Patterson, Roger. *Evolution Exposed: Biology*. Petersburg: Answers in Genesis. 2009. (Kindle Locations 354-361).

7 Meyer, Stephen C. et al. *Explore Evolution: The Arguments For and Against Neo-Darwinism*. London: Hill House Publishers. 2007. Introduction and Glossary. [emphasis in original]

8 Auxt, Jay and William Curtis III. *Global Warming*. Green Forest: Master Books. Kindle Edition. 2009. (Kindle Locations 137-143).

The other type of science is historical or origins science. This involves working out what happened in the past. Unlike operational science, historical science is severely limited because we cannot experiment on, or test directly, past events. We do not have a time machine, so we cannot repeat or observe events in history. As we have previously mentioned, this problem is at the very core of the whole hypothesis of extraterrestrial life, which assumes that life emerged spontaneously on Earth; therefore it must have emerged spontaneously elsewhere as well. There is no testable, repeatable experiment to show, for instance, whether reptiles changed into birds, or apes into humans, as claimed by evolutionists. Even if one could arrange an experiment to turn a reptile into a bird, this experiment would not prove that the same thing happened “once upon a time.”<sup>9</sup>

### Earth Science, 4<sup>th</sup> Ed. (2012)

The majority of scientists...are trying to find explanations for scientific questions that apply to present-day problems. This kind of science is called **operational science** because the subjects of research and the results of research operate in the present...The results of operational science extend and make theories more accurate. This work also helps determine the limits of scientific models. So, operational science creates more accurate models of the atmosphere. It plots the orbits of newly discovered asteroids. It monitors the changes to Antarctic ice shelves. Most scientists spend their entire lives working within operational science.

But how do you scientifically study something people can't observe today? How can you apply the scientific process to confirm hypothesis you can't test? Scientists rely on two key ideas in their work: the **principle of uniformity**, and the **principle of cause and effect**. The first assumes that the world operates in a reliable and unvarying way. This means that the same processes will always produce the same results. This second principle tells us that for anything that is an observable result of a process—an *effect*—there must be an adequate *cause*. Both of these principles are presuppositions of science—they are beliefs that allow science to work.

So scientists observe mountains, rivers, oceans, living things, and the sun, moon, and stars today. Figuring out how they got here is **historical science**. As you probably guessed, historical science relies almost entirely on a scientist's worldview. Did all those things come from natural causes? Have all processes we can see *always* operated in the past as they do today? Or was God the cause of all things? And were there times in Earth's history when God made things work very differently from the way they do today, as the Bible tells us? Earth science has become a major battleground between these two worldviews. You will learn more about historical earth science and the conflict of worldviews in later chapters.<sup>10</sup>

As we can see from the above examples, this idea can be deployed or phrased in a variety of ways, depending on the topic under discussion. What each of these examples suggests is that, for the

9 Bates, Gary. *Alien Intrusion: UFO's and the Evolution Connection*. Powder Springs: Creation Ministries International. (Kindle Locations 1797-1803).

10 Egolf, Terrance and Rachel Santopietro. *Earth Science*, 4<sup>th</sup> Ed. Greenville: BJU Press. 2012. pgs. 14-15. [emphasis in original]

aspiring fundamentalist—layperson and scientist alike—the world can be understood through this artificial division of science. In this way, belief in and advocacy of a bifurcated “historical” and “operational” science becomes a litmus test of sorts for ones' fundamentalist credentials, an insider language which demonstrates a proper Biblical worldview. This is the case whether we are looking at popular fundamentalist books about science or science textbooks with a fundamentalist slant. So if we were to step back for a moment and try to map out the two supposed categories of science, what we find might look something like the following breakdown (**Table 1**).

<b>Historical/Origin Science (Natural)</b>	<b>Historical/Origin/Creation Science (Supernatural)</b>	<b>Operational/Experimental Science</b>
Deals with the past	Deals with the past	Deals with the present
Speculative (model/theory based)	Prophetic (Bible based)	Empirical (observation/test based)
Singular Events	Singular Events	Regular Events
Secular/Atheistic oriented	Supernatural oriented	Method oriented
Macro-evolutionary/ Uniformitarian assumptions	Catastrophic/Special Creation assumptions	Natural processes/law assumptions
Materialistic/Naturalistic driven	Divine/Supernatural driven	Cause-Effect driven
Biased by worldviews	Confirmed by scriptural worldview	No bias/ “objective” worldview
Unreliable/Untestable claims	Verified (Bible-confirmed) claims	Reliable/Testable/Falsifiable claims
Bad	Good	Good
<b>Table 1:</b> <i>Comparison of Historical vs Observational Science Categories</i>		

In addition to the distinctions outlined here, some fundamentalist texts use an earlier set of scientific categories which are described as “materialistic/naturalistic” and “biblical/supernatural” science.

In modern science, there are two prominent paradigms that underlie the formation of theories and interpretations of data—the materialistic worldview and the biblical worldview...the materialist begins with the presupposition that everything now in existence arose from inert matter through naturalistic evolutionary processes. He completely rejects the idea of intelligent design and denies that a supernatural creator was involved with the formation of the physical universe. If he sees design in nature, then he says that the naturalistic evolutionary process has the inherent ability to create order out of disorder. The naturalist-materialist sees evolutionary processes at work everywhere, but he is incapable of demonstrating the natural mechanisms that produce more complex systems from simpler arrangements or parts.

A redeemed person with a biblical scientific worldview affirms that there is a Creator-God and that the Bible is His inerrant and providentially preserved message to His fallen creatures. The biblical Creationist believes that the universe was spoken into existence by God relatively recently during six literal days as described in Genesis chapters 1 and 2. He understands that the whole universe gives evidence of intelligent design. He also



knows that the Bible does not speak on every scientific subject, but anything that is mentioned on natural phenomena is scientifically correct.

You can see that a scientist's worldview, and thus his science, are strongly affected by his religious presuppositions. A regenerated Christian scientist has great advantages over an unsaved scientist when conducting scientific investigations. The Holy Spirit can direct him in the wisdom of God as he does his research.<sup>11</sup>

Whether the debate is framed as an issue of historical vs observational science, or materialistic vs biblical science, the implication is the same: the only science really acceptable to a conservative fundamentalist worldview is one where science starts from a Biblical premise and assumes everything in the natural world operates according to God's laws as outlined in scripture. As stated on the Answers in Genesis website in response to a critique that this is an arbitrary distinction:

Historical science (creationist or secular) by its very nature is based on a worldview i.e., religion.

- Either the universe started out as a singularity, which billions of years ago exploded and has caused an expanding universe ever since, or God created it *ex nihilo*.
- Either life evolved out of non-living chemicals, or aliens seeded the universe (but this only raises the question of how the aliens became alive), or God created life as described in Genesis 1–2.

Neither theory is provable (testable, repeatable, etc.). That's why you'll often see our articles state something like, "We trust the Word of God who was there" or "We accept God's Word as a true testimony."<sup>12</sup>

This presuppositionalist worldview is precisely why Biblical arguments can never be scientific. By definition science precludes supernatural causation as a plausible explanation for natural processes. This is a critical points that distinguishes contemporary fundamentalist from earlier Christian scientists, who are often held up as proof that real science was always already a Christian endeavor, and the real problem is the several hundred year deviation of real science caused by the influences of secular humanism, Darwinian evolution, uniformitarian geology, postmodern philosophy and socialism.

As many scholars of the history of science have pointed out, early Christian scientists, with a few exceptions, did not hold fundamentalist perspectives that required science to be validated by the Bible.<sup>13</sup> Even Francis Bacon, often heralded as a defender of Biblical science, reject such a view:

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11 Egolf, R. Terrance and Linda Shumate. *Physics for Christian Schools, Teacher's Edition, Book 1*. Greenville:BJU Press. 2004. pgs. 4-5.

12 Lacey, Troy. "Deceitful or Distinguishable Terms—Historical and Observational Science." Answers in Genesis Feedback. Accessed 2/16/2013. <<http://www.answersingenesis.org/articles/2011/06/10/feedback-historical-observational-science>>. 2011.

13 cf. Harrison, Peter. *The Cambridge Companion to Science and Religion*. Cambridge:Cambridge University Press. 2010;

Yet in this vanity some of the moderns have with extreme levity indulged so far as to attempt to found a system of natural philosophy on the first chapter of Genesis, on the book of Job, and other parts of the sacred writings, seeking for the dead among the living; which also makes the inhibition and repression of it the more important, because from this unwholesome mixture of things human and divine there arises not only a fantastic philosophy but also a heretical religion.<sup>14</sup>

Contrary to many fundamentalist claims today, most earlier scientists were trying to understand God's creations through an open exploration of the natural world, not to make science conform literally to the Bible. If early Christian who were also scientists like Bacon, Galileo or Newton had held such rigid fundamentalist politics, it is questionable whether they would have ever made the discoveries they did.

### **Fundamentalist Science in the Anthropocene**

It's no coincidence that science today operates largely within a secular framework that embraces an open, peer-reviewed and skeptical scientific worldview. Without a base of naturalistic processes and mechanisms, science would have no empirical foundation for making truth claims. In effect, anything can be called scientific "evidence" when causality is linked to the operation of supernatural forces. This is precisely what we find when we look at the supposedly peer-reviewed fundamentalist journals, such as *Answers Research Journal* or the *Journal of Creation*. Much, although not all, of what passes for science in these journals are simply presuppositionalist attempts at legitimating creationist arguments in the language of science, but without providing actual empirical evidence. Evidence is first interpreted through a Biblical framework, which supposedly shows how the findings conform to God's word. Biblical arguments are given a patina of scientific legitimacy, which often includes the use of detailed tables, charts, statistical calculations and numerous citations to other sympathetic fundamentalist writers. This type of practice is especially common for technical scientific issues like radiocarbon dating, geochronology and climate science, where the non-specialist can easily be fooled into thinking that the evidence presented actually conforms to the basic standards of independent peer-review.

A perfect example of this process is the geologic research undertaken by a group of young earth creationists working under the guise of the Institute for Creation Research (ICR). RATE, which stands for Radioisotopes and the Age of the Earth, is a highly technical and seemingly scientifically rigorous attempt to present a detailed empirical basis for a geologically young earth (6,000-10,000 years old). The ICR website describes this eight-year project as follows: "For over a hundred years, evolutionists

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Brooke, John Hedley. *Science and Religion: Some Historical Perspectives*. Cambridge: Cambridge University Press. 1991.

<sup>14</sup> Bacon, Francis. *Francis Bacon: The New Organon (Cambridge Texts in the History of Philosophy)*. Cambridge: Cambridge University Press. 2000. pg. 53.

have insisted that the earth is billions of years old, and have arrogantly dismissed any views contrary to this belief. However, the team of seven creation scientists have discovered incredible physical evidence that supports what the Bible says about the young age of the earth.”<sup>15</sup>

Although a detailed discussion of the many articles in this multi-volume study is beyond the scope of this paper, consider the following excerpt from John Baumgardner in the *Journal of Creation*, which discusses some of the supposedly “incredible physical evidence” discovered by this group.

During a brief span of time—the Genesis text allows only tens of hours—God not only brought the continental crust into being, but also caused several Ga [billion years] worth of nuclear transmutation to unfold within its rocks... Somehow God also disposed of the heat released, such that later on Day 3 all sorts of lush grass and herbs and fruit trees were flourishing over much, if not most, of the land surface... an additional 550 Ma [thousand years] worth of nuclear transmutation also unfolded during the Flood cataclysm... Somehow God removed the heat and protected the living things that survived the cataclysm from the associated radiation.<sup>16</sup>

As we can see from just this small excerpt from one of their many research papers, the claim is that life on the planet should have been destroyed (twice!) from the massive nuclear energy released when thousands or billions of years of geologic change was compressed into a matter of hours or days, but it wasn't. So how do RATE scientists address this paradox? They invoke supernatural intervention as a causal mechanism—“Somehow God” did X or Y. This type of argument is common in the *Journal of Creation*, which considers itself the premier peer-reviewed, international journal of creation science. Yet what should be clearly evident, even to a layperson, is that geologic (or any other) science cannot operate within a framework that allows a “somehow God did it” argument to stand as an acceptable explanation for dating the age of the earth. When it does, the basic standards of the scientific method become meaningless, as do debates over Anthropocene stratigraphy, golden spikes and the like.

Another example from the *Journal of Creation* touches more directly on our focus on climate change and its relationship to the Anthropocene. In a review of climate skeptic Nigel Lawson latest book, *An Appeal to Reason*, author Andrew Kulikovsky presents a common example of fundamentalist distortions of climate science when he writes: “Many people—least of all the general public unfamiliar with how the scientific enterprise operates—do not realise [sic] or understand that the 'science' behind global-warming is not truly empirical, based on hard evidence and testable propositions. Rather, the majority of the 'evidence' is based on computer models designed to simulate complex real world

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15 Institute for Creation Research. “*RATE Introduction*.” web. Accessed 2/23/2013. <<http://www.icr.org/rate/>>.

16 Baumgardner, John. “Do radioisotope methods yield trustworthy relative ages for the earth’s rocks?” *Journal of Creation*. 26:3. December, 2012. pg. 73.

systems.”<sup>17</sup> In other words, climate science is speculative, and like historical science, not real science.

It's hard not to feel that Kulikovsky himself is one of those people “unfamiliar with how the scientific enterprise operates,” for how else could he suggest that the 'science' 'evidence' for climate change is neither empirical nor testable? What about the 1000's of pages of IPCC reports, Millennium Ecosystem Assessments and voluminous international science studies that are nothing but empirical evidence documenting climate change and its impacts on “complex real world systems,” and which use little to no computer modeling? Kulikovsky would have his fellow creation science journal enthusiasts believe that all this evidence is bogus. It's also worth noting his deliberate skepticism around both 'science' and 'evidence' here. While it is true that computer modeling is an important tool used by many scientists, including climate scientists, to suggest that there is no scientific evidence for climate change because some computer models are used is not only dishonest, it is a calculated political lie meant to advance a particular climate denialist political agenda. A recent paper on environmental reporting and public attitudes by Michael Nisbet captures both the dynamics and the intent as seen here. He writes:

Engaging the public and decision makers on climate change is made all the more difficult by the advertising, public relations, and lobbying strategies of powerful fossil-fuel companies that benefit from maintaining the status quo, and by aligned conservative political leaders and groups. Over the past two decades, this network has manufactured doubt in the news media about the reality of man-made climate change, exaggerated the economic costs of action, ridiculed environmentalists, intimidated scientists, and manipulated the use of scientific expertise in policy-making.<sup>18</sup>

Just to be clear, there are many legitimate scientists who hold fundamentalist and conservative political views and who also publish peer-reviewed research in fields that have nothing to do with geology, biology, climate science and other contested fields. The problem arises when these same scientists use their “peer-reviewed” status to advance a scientific case for climate denial beyond their area of expertise. There is an important difference between being a climate scientists raising questions about details of climate models and being a mechanical engineering who denies climate change *en toto*, especially when ones scientific skepticism is not grounded in a relevant field of climate science. I don't want to say that we must all be climate scientists to raise any criticisms, but this is an important distinction often glossed over in climate denial circles. It is quite common for someone who has published peer reviewed work in one field of science—say nuclear physics—to then attempt to use this veneer of scientific credibility to legitimize climate denial pseudoscience. These are precisely the sort

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17 Kulikovsky, Andrew S. “A lesson in rational thinking.” *Journal of Creation*. 26:3. December, 2012. pg. 34.

18 Nisbet, Matthew. "Nature's Prophet: Bill McKibben as Journalist, Public Intellectual, and Activist." Joan Shorenstein Center for Press, Politics, and Public Policy. Discussion Paper Series, D-78. Cambridge:Harvard University. 2013. pg 5.

of attempts we need to be on guard against, as they are becoming increasingly common as a political tactic to undermine the science behind the Anthropocene.

### **Resisting the Green Dragon**

In this regard it is worth noting that the intersection of religious and environmental politics is not new. Jimmy Carter, considered by many to be the first “born again” Evangelical president, noted in a speech on energy policy that if Americas did not act, they “will feel mounting pressure to plunder the environment,” and such a lack of action would lead to “an economic, social and political crisis that will threaten our free institutions.”<sup>19</sup> Andrew Hogue, a Baylor University professor of political science, also noted that “a lot of evangelicals are interested in things like the environment and human rights and social justice that Democrats have been championing, even on religious grounds, for a long time.”<sup>20</sup>

Examples of green theological trends can be seen today in the Evangelical Environmental Network (EEN), the Creation Care movement and the Evangelical Climate Initiative (ECI). In their 2006 “Climate Change: An Evangelical Call to Action” statement, the ECI argued that: “Love of God, love of neighbor, and the demands of stewardship are more than enough reason for evangelical Christians to respond to the climate change problem with moral passion and concrete action.”<sup>21</sup>

On the opposite side, one need only recall the Sagebrush Rebellion and Moral Majority under Ronald Reagan, the Wise-Use Movement and Christian Coalition under George H.W. Bush, or the Healthy Forest and Clean Skies Initiatives under George W. Bush Jr. to see how religious fundamentalism, free market advocates and anti-environmental politics continued to intersect today. Nowhere are these overlaps more clear than in the all-out war to deny the reality of climate change. As former Chairman of the Senate Committee on Environment and Public Works James Inhofe famously claimed: “With all of the hysteria, all of the fear, all of the phony science, could it be that man-made global warming is the greatest hoax ever perpetrated on the American people? It sure sounds like it.”<sup>22</sup>

It is in this political context and climate that I want to situate my argument. I believe the Anthropocene is provoking new and innovative responses from conservative religious networks, free market advocates and anti-environmental groups precisely because the stakes are growing as public

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19 Carter, Jimmy. "The President's Proposed Energy Policy." 18 April 1977. *Vital Speeches of the Day*, Vol. XXXXIII, No. 14, May 1, 1977, pp. 418-420.

20 Hogue, Andy. “*Stumping God: Reagan, Carter, and the Invention of a Political Faith.*” Web. Accessed 3/12/2013. <<http://www.baylor.edu/mediacommunications/index.php?id=91452>>. 2012.

21 Evangelical Climate Initiative (ECI). “Climate Change: An Evangelical Call to Action.” web. Accessed 3/1/2013. <<http://christiansandclimate.org/statement/>>. 2006.

22 Inhofe, James. *The Greatest Hoax: How the Global Warming Conspiracy Threatens Your Future*. New York:Midpoint Trade Books. Kindle Edition. 2012. (Kindle Locations 4783-4786).

awareness about the risks of climate change becomes more pronounced. To respond to these changing social norms and views, conservatives across the religious, political and economic spheres have begun to join forces against a common enemy—environmentalism. This emerging anti-green coalition has been instrumental in fostering what I believe is as a new, hybrid counterculture aimed at responding to and challenging many of the environmental claims put forward by proponents of the Anthropocene.

Thanks to the numerous US environmental laws passed in the wake of the first Earth Day in 1970, peer-reviewed scientific research now forms the foundation for nearly all environmental policy and laws. Because of this, frontal attacks on science are not seen as effective political tactics, especially given the high levels of public trust in the authority of scientists. Although it took more than a decade to fully manifest, since the 1990's there has been an explosion of conservative political front groups, think tanks and policy centers which act as clearing houses for supporting, funding and publishing anti-environmental and pro-industry science and policy studies.

This trend can be traced back to the 1980's "Whitecoat Project" days of tobacco lobbying against public health research, when phrases like "sound science" and "junk science" began to appear. We have seen a significant increase in such activities over the past decade.<sup>23</sup> These faux science and industry-funded junk science activities have only grown more sophisticated and prolific since 2000, and such efforts now constitute a central vehicle for attacking climate science.

Some examples of these institutes include the American Enterprise Institute (AEI), the Heartland Institute, Acton Institute for the Study of Religion and Liberty, the American Legislative Exchange Council (ALEC), the American Council on Science and Health (ACSH), the Center for the Study of Carbon Dioxide and Global Change, the Environmental Literacy Council (ELC), the Foundation for Research on Economics and the Environment (FREE), the Institute for Energy Research (IER), the Pacific Research Institute for Public Policy (PRIPP), the Property and Environment Research Center (PERC), the Cornwall Alliance for the Stewardship of Creation, the Discovery Institute, the Committee for a Constructive Tomorrow (CFACT), and many, many more.<sup>24</sup>

Because the Anthropocene represents a political as well as scientific challenge to business as usual politics, especially for those in the fossil fuel and related heavy industries, this response should

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23 c.f. Thacker, Paul. "Smoked Out: Pundits for Hire." The New Republic. Web. Accessed 3/12/2013.

<<http://www.newrepublic.com/article/pundit-hire>>. 2006; Agin, D. P. *Junk Science: How Politicians, Corporations, and other Hucksters Betray Us*. New York: Thomas Dunne Books. 2006; and Rampton, Sheldon and John Stauber. "How Big Tobacco Helped Create "the Junkman"." PR Watch, Center for Media and Democracy. Web. Accessed 3/4/2013. <<http://www.prwatch.org/prwissues/2000Q3/junkman.html>>. 2000.

24 cf. Greenpeace. "Koch Industries: Secretly Funding the Climate Denial Machine" and "Koch Industries: Still Fueling Climate Denial, 2011 Update." web. Accessed 3/2/2013. <<http://www.greenpeace.org/usa/en/campaigns/global-warming-and-energy/polluterwatch/koch-industries/>>. 2010.

not come as a surprise.<sup>25</sup> Although this emerging anti-green coalition has yet to pick up the language of the Anthropocene, it has done an effective job of creating significant public doubt and skepticism about the science underlying climate change. So how is this public skepticism being sustained?

Because it is impossible to produce credible and peer-reviewed science research that requires supernatural truth claims grounded in the Bible as valid evidence, religious fundamentalists have been searching for alternative methods with which to attack the science of environmental politics. Over the years two major innovations have emerged to address this challenge. One is the articulation of a new philosophy of science that supports the argument about their being two categories of science. This is the previously discussed distinction between “historical/origin” and “operational/experimental” science. This effort is itself only one piece of a larger project within the conservative fundamentalist community which seeks to develop a comprehensive and alternative set of creation science theories to explain everything from geology and biology to genetics and astronomy.

Another major innovation is the development of a robust network of fundamentalist writers and institutes that produces a significant body of “creation science” that fundamentalist now regularly draw upon when engaging with outsiders. It is this second innovation that has been the most effective as an anti-environmental political tool, largely because this is where the most powerful overlaps occur between conservative religious politics and industry funded science, as previously noted.

In the early days of modern US environmental history (post 1960's), the major environmental contestations were often focused around issues like land use or water rights in the Southwest, the fate of old growth logging in the Pacific Northwest or degraded waterways in Appalachia from abandoned coal mines. Although there was occasionally a religious component to anti-environmental arguments at this time, by and large conservative fundamentalists were focused on other issues—the teaching of evolution in schools, anti-abortion protests and right-to-life laws, anti-gay rights and the defense of heterosexual marriage—issues that readily come to mind when one thinks of the political battles waged by the Christian Right over the last 40 years. During most of this time environmental issues were left to the free-market and wise-use wings of the conservative right.

The recent emergence of a concept such as the Anthropocene was made possible because there has been a basic shift in beliefs amongst the public that environmental issues matter, a view that has been gaining support since the 1970's. As various scholars have argued, there is likely greater public acceptance today for environment protection than at any other point in the past.<sup>26</sup> This growing

25 Jacques, Peter J., Riley E. Dunlap and Mark Freeman. “The organisation of denial: Conservative think tanks and environmental scepticism.” *Environmental Politics*, 17:3. 2008. pgs. 349-385.

26 Brand, K. W. “Environmental Consciousness and Behaviour: The Greening of Lifestyles.” In M. R. G. Woodgate (Ed.),

awareness has made arguments which attack environmental protection harder to defend, although such claims still have resonance when the debate is reduced to a simplistic jobs vs environment choice. As a March 2012 Gallup poll headline declared, “Americans Still Prioritize Economic Growth Over Environment,” with a 49% to 41% split.<sup>27</sup> And while most Gallup polls on the environment show an overall growth in public support for environmental issues compared to the mid 1980's or early 1990's, virtually every poll has lower public support for the environment today than 5 or 10 years ago. A 2012 Gallup poll highlighted this fact in relation to public views on the science behind global warming:

When asked to weigh in broadly on this [global warming science] debate, the majority of Americans [58%] say most scientists believe global warming is occurring. By contrast, 7% say most scientists reject the existence of climate change, while 32% say most scientists are unsure. At the same time, fewer Americans today believe there is a scientific consensus than did so during the 2000s, when at least 6 in 10 held this view.<sup>28</sup>

For our purposes the important point here is that opponents of increased environmentalism have responded to growing concerns about the environment by attaching conservative theological arguments to anti-environment claims, most of which were primarily economic in nature. By forging this new alliance, environmentalism can now be framed as not only bad for free markets and individual rights, but also a threat to Christian fundamentalism. The opportunity to frame environmentalism as anti-Christian also opens up the door to a rhetoric of spiritual warfare. Equally important, this alliance gave conservative fundamentalists a new reserve in which it could expand evangelizing missionary work. By framing environmentalism as a neo-pagan threat to the faithful, the Gospel of Jesus is cleverly overlaid on the earlier gospel of capitalism (i.e. “gospel of wealth”).

Suddenly the old fundamentalist battle against Satan was now being framed to include environmentalism as part of the threat, a project that is being spearheaded by groups like the Cornwall Alliance. Meet the Green Dragon, the new face of free market, fundamentalist anti-environmentalism. The following is an excerpt from the Cornwall Alliance press release on April 20, 2010 announcing the launch of their “Resisting the Green Dragon” Initiative, which was picked to coinciding with worldwide celebrations of the 40<sup>th</sup> anniversary of Earth Day:

The Cornwall Alliance asserts that one of the greatest threats to society and the church today is the multifaceted environmentalist movement. There isn't an aspect of life that it doesn't seek to force into its own mold.

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*The International Handbook of Environmental Sociology*. Cheltenham:Edward Elgar. 1997.

27 Jacobo, Dennis. “*Americans Still Prioritize Economic Growth Over Environment*.” Gallup Poll. web. Accessed 3/14/2013. <<http://www.gallup.com/poll/153515/Americans-Prioritize-Economic-Growth-Environment.aspx>>. 2012.

28 Saad, Lydia. “*In U.S., Global Warming Views Steady Despite Warm Winter*.” Gallup Poll. web. Accessed 3/14/2013. <<http://www.gallup.com/poll/153608/Global-Warming-Views-Steady-Despite-Warm-Winter.aspx>>. 2012.



“Environmentalism has become a new religion,” says Cornwall Alliance National Spokesman Dr. E. Calvin Beisner. “Its policies are devastating to the world’s poor. It threatens the sanctity of human life. It targets our youth. And its vision is global.”

“Today’s environmentalism isn’t just the conservationist belief that every generation should use the Earth wisely so that it benefits not only itself but also future generations,” Dr. Beisner said. “Environmentalism isn’t a neutral set of ideas that can be tacked onto the Christian faith without theological compromise. Instead, environmentalism promotes its own world view and its own doctrines of God, creation, humanity, sin, and salvation. And those doctrines aren’t Biblical.”<sup>29</sup>

To give you a sense of how the Cornwall Alliance was framing its Resisting the Green Dragon initiative, consider the opening voice-over from the DVD series promo as read by fundamentalist radio host and author Janet Parshal, a figure we will return to again later in our story:

In what has become one of the greatest deceptions of our day, radical environmentalism is striving to put America and the world under its destructive control. This so-called ‘Green Dragon’ is seducing your children in our classrooms and popular culture. Its lust for political power now extends to the highest global levels. And its twisted view of the world elevates nature above the needs of people of even the poorest and the most helpless. With millions falling prey to its spiritual deception, the time is now to stand and resist. Around the world, **environmentalism has become a radical movement, something we call the Green Dragon, and it is deadly.** Deadly to human prosperity, deadly to human life, deadly to human freedom and deadly to the gospel of Jesus Christ. Make no mistake about it, **environmentalism is no longer your friend, it is your enemy. And the battle is not primarily political or material, it is spiritual.**<sup>30</sup>

The Cornwall Alliance is a key actor in this unfolding story. It is a great example of this new hybrid free market and Biblical fundamentalist entity. Its spokesman, E. Calvin Beisner, has extensive connections with the religious and political right, and is a leading voice in anti-green politics. They have also taken a lead role in anti-green educational propaganda, which includes not only the “Resisting the Green Dragon” dvd, book and lecture series, but also regular engagement with the media through public statements and official testimony, ranging from the Vatican to halls of Congress. By looking at Cornwall Alliance and Beisner, we can gain a better picture of the way that these religious and free market logics are being deployed simultaneously within the context of the Anthropocene.

In 2007 the Senate Committee on Environment and Public Works, chaired at the time by Senator James Inhofe, held a public hearing under the theme “An Examination of the Views of Religious Organizations Regarding Global Warming.” The event included testimonials from members

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29 Cornwall Alliance press release. April 20, 2010. <http://www.cornwallalliance.org/docs/americas-leading-voice-of-faith-on-stewardship-issues-announces-new-initiative-to-expose-serious-dangers-of-green-dragon-environmentalism.pdf>.

30 Cornwall Alliance. “Resisting the Green Dragon.” DVD 1. 2012.

representing various faith perspectives, although all but two were Christians (the two were Jewish). The official record of that hearing, which was later published by the GPO, included nearly a dozen climate change denial documents comprising nearly 200 pages of testimony in a 300 page document. Of these, half were personally written by Beisner or his affiliated organizations, the Cornwall Alliance and the Interfaith Stewardship Alliance, which was the former name of the Cornwall Alliance.<sup>31</sup>

One of the included excerpt by Beisner came from a talk he gave at the “Climate Change and Development” conference hosted by the Pontifical Council for Justice and Peace in Vatican City in April of 2007, just a few months before the Senate hearing. In that talk, titled “Climate Change and the Responsibility of Civil Society: Some Biblico-Theological Aspects of the Global Warming Debate,” he presents the following “Biblico-Theological Foundations” argument regarding climate science.

Many in today’s modernist and postmodernist world think it is illegitimate for theological principles to guide interpretation of scientific data. Yet that belief is itself theological and is therefore self-refuting. Ironically, those who rule out Biblico-theological matters from scientific discussion are acting in the very unscientific manner of turning a blind eye to some data. In contrast, Christians, recognizing the Bible as the Word of God written, must take its statements as part of the data they consider. That is, the consistent Christian must take more data into account than does the non-Christian. There is no neutrality. Everyone undertakes his studies presupposing either the relevance or the irrelevance of Biblico-theological data, and the Christian need not be embarrassed to think them relevant.<sup>32</sup>

This is precisely the logic we saw in relation to arguments about Biblical science, except in this case they are explicitly addressed to climate change. Another document submitted as part of this same Senate hearing, this time from the Southern Baptist Convention (SBC), shows the shared ideological project amongst this network. Their 2006 Resolution #8 “On Environmentalism and Evangelicals,” a portion of which is included here, states:

WHEREAS, Some in our culture have completely rejected God the Father in favor of deifying “Mother Earth,” made environmentalism into a neo-pagan religion, and elevated animal and plant life to the place of equal—or greater—value with human life; and

WHEREAS, The scientific community is divided on the effects of mankind’s impact on the environment; and

WHEREAS, Some environmental activists are seeking to advance a political agenda based on

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31 Government Printing Office. “An Examination of the Views of Religious Organizations Regarding Global Warming.” 110<sup>th</sup> Congress. Washington:US Government Printing Office. 2007.

32 Beisner, E. Calvin. "Climate Change and the Responsibility of Civil Society: Some Biblico-Theological Aspects of the Global Warming Debate." Climate Change and Development Conference, Pontifical Council for Justice and Peace Vatican City, April 27-28, 2007. web. Accessed 2/5/2013.<<http://www.cornwallalliance.org/docs/climate-change-and-the-responsibility-of-civil-society.pdf>>. 2007. pg. 2.

disputed claims, which not only impacts public policy and in turn our economic well-being, but also seeks to indoctrinate the public, particularly students in public institutions; and

WHEREAS, Environmentalism is threatening to become a wedge issue to divide the evangelical community and further distract its members from the priority of the Great Commission; now, therefore, be it...

RESOLVED, That we encourage public policy and private enterprise efforts that seek to improve the environment based on sound scientific and technological research; and be it further

RESOLVED, That we resist alliances with extreme environmental groups whose positions contradict biblical principles (2 Chronicles 19:2) and that we oppose solutions based on questionable science, which bar access to natural resources and unnecessarily restrict economic development, resulting in less economic opportunity for our poorest citizens...<sup>33</sup>

We see all of the elements together that were mentioned before—green politics as neo-paganism, skepticism over climate science, a strong defense of private property, free market values over stewardship, and a call for “sound science” over “questionable science,” which is used here as anything that limits “access to natural resources and unnecessarily restrict economic development.”

Less than a year later after the Senate hearings on religion and global warming, another coalition of conservative groups was launched. Calling themselves “We Get It,” the coalition sought a million signature for Biblical stewardship and described their efforts as “Christian leaders [who] have joined with pastors and legislators to put forth a new initiative on caring for the environment.”<sup>34</sup> Some of the featured speakers associated with the project included Janet Parshall (radio host and narrator for “Green Dragon” series), Senator James Inhofe, E. Calvin Beisner (Cornwall Alliance), Barrett Duke and Richard Land (SBC's Ethics and Religious Liberty Commission), James Tonkowich (The Institute on Religion and Democracy), and Tony Perkins (Family Research Council).<sup>35</sup>

Their founding “Declaration” states: “Our stewardship of creation must be based on Biblical principles and factual evidence. We face important environmental challenges, but must be cautious of claims that our planet is in peril from speculative dangers like man-made global warming.”<sup>36</sup> And as further evidence of the religious-economic-political entanglements, their press release featured a quote from Senator Inhofe, who said: “I believe it speaks for the vast majority of evangelicals, who are as tired as I am of being misrepresented by people who don't bother to get their theology, their science, or their economics right. Consequently, they put millions of the world's poor at risk by promoting policies

33 Southern Baptist Convention. “Resolution No. 8, On Environmentalism And Evangelicals.” web. Accessed 2/20/2013. <<http://www.sbcannualmeeting.net/sbc06/resolutions/sbcresolution-06.asp?ID=8>>. 2006.

34 Institute on Religion and Democracy. “We Get It' Campaign Kicks Off Campaign for a Million Signatures.” web. Accessed 2/24/2013. <[http://www.we-get-it.org/press/Press\\_Release\\_-\\_IRD.pdf](http://www.we-get-it.org/press/Press_Release_-_IRD.pdf)>. 2007.

35 We Get It. “WeGetIt.org Speakers.” web. Accessed 3/1/2013. <<http://www.we-get-it.org/press/Speakers.pdf>>. 2008.

36 We Get It. “WeGetIt.org Declaration.” web. Accessed 3/1/2013. <<http://www.we-get-it.org/declaration/>>. 2008.

to fight the alleged problem of global warming that will slow economic development, and condemn the poor to more generations of grinding poverty and high rates of disease and early death.”<sup>37</sup>

This theme of environmentalism hurting the poor is a central narrative in their messaging, and is consistently used as a defense against environmental legislation and interventions into the free market. This is an ironic paradox, given that some of the loudest voices for stronger environmental enforcement and regulation come from the global south and less industrialized nations, both areas where the poor are seen as in need of “saving” by the twin forces of neoliberal capitalism and fundamentalism.

Yet as proponents of the Anthropocene have argued, the global south and newly industrialized nations are especially vulnerable to climate change risk. As Kurt Campbell and his co-authors noted in a Center for Strategic and International Studies paper on the potential international security risks posed by a severe global warming scenario (defined as 2.6°C warming by 2040):

The internal cohesion of nations will be under great stress, including in the United States, both as a result of a dramatic rise in migration and changes in agricultural patterns and water availability. The flooding of coastal communities around the world, especially in the Netherlands, the United States, South Asia, and China, has the potential to challenge regional and even national identities. Armed conflict between nations over resources, such as the Nile and its tributaries, is likely and nuclear war is possible. The social consequences range from increased religious fervor to outright chaos.<sup>38</sup>

And as Simon Dalby points out in the context of Anthropocene environmental security, “weak and fragile states are poorly equipped to deal with the impacts of climate change...if geopolitical rivalries emerge as China and India's power increases in coming years then deadlock on dealing with either poverty or climate change is a dangerous possibility.”<sup>39</sup> Surely such risks warrants equal attention with any fundamentalist claims about environmental regulations supposedly harming the poor.

A note of caution is necessary here, however, as we think about the Anthropocene beyond a US context. Since the turn of the millennium we have seen the growth of increasingly powerful and transnational corporations and global financial forces which are overlapping with this expanding global Christian fundamentalism. These forces are pushing a political worldview defined by hyper-capitalist consumption embedded in a neoliberal economic development framework viewed, as we have seen, in terms of a divinely sanctioned “prosperity theology.” This political movement preaches unlimited

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37 Ibid.

38 Campbell, Kurt M., Jay Gullede, J.R. McNeill, John Podesta, Peter Ogden, Leon Fuerth, R. James Woolsey, Alexander T.J. Lennon, Julianne Smith, Richard Weitz, and Derek Mix. “The Age of Consequences: The Foreign Policy and National Security Implications of Global Climate Change.” Washington:Center for Strategic and International Studies. 2007. pg. 7.

39 Dalby, Simon. “Anthropocene Security.” International Studies Annual Convention. New York. web. Accessed 2/3/2013. <[http://www.academia.edu/211668/Anthropocene\\_Security](http://www.academia.edu/211668/Anthropocene_Security)>. 2009. pg. 6.

growth while rallying behind what Steve Brouwer calls “global Christian fundamentalism.” In their study of this emerging global phenomenon, they make the following important observation: “rapid religious change is occurring simultaneously with the industrialization of many parts of the developing world and the concomitant commodification of everyday life. Is there, in a way analogous to the connection between evangelical Protestantism and industrial development on a national scale in the nineteenth century, now a fledgling connection between worldwide capitalist expansion and a new form of internationalized Christianity?”<sup>40</sup>

In this global fundamentalist narrative, the US is viewed as the last defender of Christianity, the mythic shining city upon a hill in a world fallen from God's grace. The growth of these ideas are born out in the increasing support these fundamentalist, charismatic and neo-Pentacostal movements have gained over the last decade, not only in the US but all over the world, as Brouwer and his co-authors document. And according to a host of surveys over the past decade, close to a quarter or more of the US public, some 80 million people, currently identify with some variation of this globalized, conservative Protestant evangelicalism.<sup>41</sup> Among these adherents are a common belief in creationism, a young earth, a literal interpretation of the Bible and the final return of Jesus, which will usher in the End Times.

How advocates of the Anthropocene deal with not only the growing attacks on science within the US but also the possibility of an increasingly powerful and global Christian fundamentalist movement remains to be seen. I believe it will be one of the major challenges faced by the environmental community in the coming years. Should we reposition our arguments within a more explicitly religious framework by arguing there is a clear moral and ethical imperative which can be found in the Anthropocene? Do we redouble our efforts to fend off the growing attacks against science from the hybrid network of religious and political and market fundamentalists? Do we attempt to bolster scientific literacy within the religious community by actively working to isolate the more militant wings of the fundamentalist movements?

There are numerous possible strategies to consider. Whatever we choose, it is clear that the emerging discourse of the Anthropocene requires both strong and credible science to back it up, and a language for public policy and international action that can speak to multiple audiences across a diverse range of interests. How we should go about constructing this new Anthropocene environmental discourse remains an open question, but it is clear we have our work cut out for us. ###

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40 Brouwer, Steve, Paul Gifford and Susan D. Rose. *Exporting the American Gospel: Global Christian Fundamentalism*. New York:Routledge. 1996. pg 7.

41 Pew Center for Religion and Public Life. “US Religious Landscape Survey.” web. Accessed 2/4/2013. 2008. <<http://www.pewforum.org/US-Religious-Landscape-Survey-Resources.aspx>>.

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