

Evolution, Naturalism, and Theism: An Inconsistent Triad?

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EVOLUTION, NATURALISM, AND THEISM:
AN INCONSISTENT TRIAD?

by

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ABSTRACT

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Marquette University, 2018

Philosophy in the 19th century experienced a ‘turn from idealism,’ when idealist philosophies were largely abandoned for materialist ones. Scientific naturalism is now considered by many analytic philosophers to be the new orthodoxy, largely in part due to the success of the scientific method. The New Atheists, such as Daniel Dennett and Richard Dawkins, claim it is Darwin in particular who deserves much of the credit for repudiating the traditional Mind-first world view. Some, like Alvin Plantinga and Michael Behe, maintain the opposite, that evolution casts doubt on naturalism and supports theism. This dissertation seeks to determine just what exactly the logical implications of evolutionary theory are. Is evolution incompatible with theism? Does the acceptance of evolution necessarily entail naturalism and preclude theism? Is it possible, as naturalism maintains, that everything can be reduced to physical processes, or are there too many recalcitrant phenomena that defy reduction?

Answering these involves a detailed analysis of the concepts, ‘evolution,’ ‘naturalism,’ and ‘theism.’ Just what exactly does accepting evolutionary theory entail? How is it different from Darwinism? Is evolution guided or unguided? What is naturalism? There are many different types of metaphysical naturalists: eliminative materialists, physicalists, and emergent property dualists. What is the relationship between metaphysical naturalism and methodological naturalism? Theism affirms a creator God who sustains all being, who is transcendent and yet immanent. So if theism posits a God who is active in the world, does this mean that scientific investigation may at times have to admit supernatural explanations when natural ones fail?

My general conclusion is a type of mitigated skepticism – that given evolution, neither naturalism nor theism logically follows. As to whether evolution is guided or unguided, the only correct position is ‘undetermined.’ In this instance metaphysical positions may fill in the gaps in knowledge by projection, but cannot fulfill the necessary and sufficient conditions required for knowledge. Metaphysical naturalism and theism are worldviews that an individual adopts as the most overall coherent explanation of the wide variety of experiences, intuitions, and reflections on their life. Whether evolution offers evidence for one and against the other is often based upon one’s prior metaphysical assumptions, since all facts are theory laden. The underdetermination of theory allows for multiple theories to cover the same phenomena, with each offering an epistemically adequate explanation. However, numerous recalcitrant anomalies which defy scientific explanation and reduction present problems for the strict naturalist. While neither naturalism nor theism can be determined to be objectively true, one can offer reasons for choosing one or the other on the basis of overall coherence.

ACKNOWLEDGEMENTS

David H. Gordon, B.A., M.A.

The seeds of this dissertation were sown when I was in sixth grade and our class watched a film describing the 1974 fossil find of the remains of Lucy, a 3 million year old hominin, in the Rift Valley in Ethiopia. As a result, I have probably believed in evolution longer than I have believed in God. However, I have never found the two mutually incompatible. When I started teaching Introductory Philosophy classes, which offered a chronological overview of the history of philosophy, I noticed that the latter half of the 19th century experiences a strong shift towards materialist philosophies. Yet nothing in the philosophies themselves really explained this shift. I came to believe that one of the primary reasons for this shift is Darwinism. As Darwin is a biologist, and not a philosopher, he is left out of most philosophy anthologies. So I began supplementing the textbook with readings on evolution and included lectures on Darwin. I also started reading some of the philosophy of biology literature, namely that of Dennett and Dawkins, who felt that Darwinism disproves the existence of God. This too, confirmed my belief that evolutionary theory was a primary influence fueling the shift towards materialism. However, while I share with these people the premise that Darwin helped fuel this shift, I did not accept their conclusion that Darwinism results in metaphysical naturalism. Like Plantinga, I see naturalism as an overlay onto evolutionary theory, rather than its logical outcome.

For this reason, I would like to thank all my teachers and students who have helped me research and refine my position on this topic. They would be too numerous to list here. I will just try to briefly mention some. I would like to thank especially Marquette University and its professors for allowing me to pursue my research interests and for providing me with an office as well as a study carrel in the library. I would particularly like to thank my dissertation director, Dr. Michael Wreen, for the many years he has helped guide this project. I would also like to thank my committee members, Dr. Noel Adams, Dr. Stan Harrison, Dr. Bill Starr, and Dr. Lee Rice, as well as the rest of the faculty and staff in the Philosophy department. I would also like to thank the Philosophy department faculty, staff, students, and librarians at the six colleges I have taught at while writing it: Loyola University Maryland, Aurora University, Concordia University Wisconsin, Lake Forest College, the University of Wisconsin Green Bay, and Marquette University. I would also like to thank my family, friends, the Young Pups, and fellow graduate students for all their support. Last, I would like to thank anyone who is willing to put the time and energy into reading this. It represents over three decades of work in philosophy, and hopefully it provides a resolution to a difficult issue which is a topic of much current debate.

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CHAPTER ONE –
THE PROBLEM: RECONCILING SEEMINGLY INCOMPATIBLES –
THEISM AND EVOLUTION

Any person who imagines that the heavens are mindless, when their remarkable order and regularity beyond belief ensure the total preservation and well-being of everything in the universe, must himself be regarded as out of his mind....The person who observes these facts would display not merely ignorance but also impiety if he said that the gods do not exist...To sum up, the existence of the gods is so crystal-clear that I regard anyone who denies it as being virtually out of his mind.¹ – Cicero

I was merely thinking God's thoughts after him. Since we astronomers are priests of the highest God in regard to the book of nature, it benefits us to be thoughtful, not of the glory of our minds, but rather, above all else, of the glory of God.² – Kepler

When someone asks me: ‘Can you believe in God and Evolution,’ I always respond: ‘That depends. What do you mean by ‘God’ and what do you mean by ‘evolution’?’³ – Jay Richards

The Church teaches that every spiritual soul is created immediately by God – it is not ‘produced’ by the parents – and also that it is immortal; it does not perish when it separates from the body at death.⁴ – Catechism of the Catholic Church

The Argument from Design depends on an inductive inference: where there's smoke, there's fire; and where there's design, there's mind....Before Darwin, a ‘Mind-first’ view of the universe reigned unchallenged....Darwin described a process he called natural selection, a mindless, purposeless, mechanical process.⁵ – Daniel Dennett

¹ Cicero, *The Nature of the Gods*, trans. by P.G. Walsh (Oxford: Clarendon Press, 1997), 67, 62.

² http://www.newworldencyclopedia.org/entry/Johannes_Kepler

³ Jay Richards, in “Introduction,” *God and Evolution*, ed. by Jay Richards (Seattle: Discovery Institute Press, 2010), 7.

⁴ *The Catechism of the Catholic Church* (Mahwah, NJ: Paulist Press, 1994), 93 (paragraph 366).

⁵ Daniel C. Dennett, *Darwin's Dangerous Idea* (New York: Simon & Schuster, 1995), 30, 33, 34.

Dennett's interpretation of Darwin here is skewed. Darwin's beliefs varied over time, but he generally believed God was the author of the laws of nature, hence believed in a Mind-first universe. See Ch. 2.4.

1. The Problem: The Conflict Thesis

The second half of the 19th century experienced an ever-increasing conflict between religion and science, with a resulting intellectual shift towards naturalism, roughly the view that all that exists is the natural world. Charles Taylor sees this as the period in which unbelief came of age.⁶ He attempts to tell the ‘story’ of what made this unbelief possible, a story which would have seemed incredible to anyone living in previous centuries during which atheism was not tolerated. What fueled this shift? It is no coincidence that this change in the intellectual climate was encouraged by the 1859 publication of Darwin’s *On the Origin of Species*, followed by his *The Descent of Man* in 1871. Taylor sees “the standard story of the Victorians’ loss of faith...[as] caused by the impact of Darwinian evolution, which is held...to have refuted the Bible....His theory gave an important push towards a materialist, reductive view of the cosmos, from which all teleology was purged.”⁷ The rise of Biblical criticism further undermined Scripture as the infallible word of God; instead, it was interpreted more as a human document with multiple authors.⁸ Darwin’s theory seemed to confirm this suspicion, for if the Bible really is the Word of God and evolutionary theory is true, it would be discussed in the Bible, since clearly God would know what creation entails and how it occurred. So in the triad of theism, evolution, and naturalism, theism was increasingly seen as the

⁶ Charles Taylor, *A Secular Age* (Cambridge, MA: The Belknap Press of Harvard University Press, 2007), 374.

⁷ *Ibid.*, p 378-379.

⁸ For a summary of the Document Hypothesis, or the thesis that there are four authors and an editor of the Pentateuch (J, P, E, and D), see Richard Elliott Friedman, *Who Wrote the Bible?* (New York: HarperOne, 1989).

weakest link. Naturalism became the standard view, and with it a hostility to the existence of any kind of non-natural entity.

The fundamental assertions of the Western theistic tradition are that there is a God who has a spiritual immaterial nature, and that this nature is first in the order of being. The Judeo-Christian worldview has God at the top of the Great Chain of Being, creating the world and imposing order onto it. Thus nature reveals the plan of the Creator. Daniel Dennett sees Darwin as the first person to radically challenge, if not overthrow, this “Mind-first” view of the universe. The radical import of Darwin’s ideas is that they offer an alternative explanation of the order of the universe, an explanation which shows how order can arise out of a mindless, mechanical process. Previously the order of the universe could only be accounted for by recourse to a Great Artificer in the sky, a watchmaker deity. Darwin inverts the Mind-first process by demonstrating how species can originate from the bottom up, from matter rather than mind, thereby making the existence of God a superfluous hypothesis. Dennett therefore sees evolutionary theory as a ‘Universal Acid’ which dissolved the Mind-first view of the universe. Thus the claim by some that “Darwin has refuted the Bible.”⁹

But has Darwin really spoiled the church picnic? Has he proven theism and any Mind-first metaphysic to be nothing but myth and error, the worldview of a young, immature, childish humanity unable to face the specter of a godless universe? Are theists afraid of the view that we are nothing but specks of dust floating adrift on a minor planet orbiting a sun in a galaxy containing 200-400 billion stars, and in a universe with 80-100 billion galaxies? A common interpretation of evolutionary biology today is that it

⁹ Ibid., p 562.

provides a 'self-sufficient' explanation of life within what Charles Taylor calls a 'closed world system,' or natural universe, one that is not contingent upon anything. But does evolutionary theory provide overwhelming evidence in favor of such a naturalistic view? If so, evolutionary theory poses a problem for everyone who is a theist and believes in evolution, for theism and evolutionary theory would be incompatible.

However, people like Stephen Jay Gould and Alvin Plantinga deny that evolutionary theory is incompatible with theism. Gould argues science cannot make assertions about religion, since it is beyond its realm of expertise, and Plantinga argues that the probability our epistemic faculties would be reliable is low if they arose from strictly naturalistic causes. The aim of this study is to demonstrate (A) that people like Daniel Dennett do not make their case that evolutionary theory necessarily entails naturalism and disproves theism and (B) that naturalism fails to account for all the features of the universe and hence is inadequate as a comprehensive worldview. Thomas Nagel argues that a great number of recalcitrant phenomena (such as the order of the universe and the existence of laws of nature) defy materialist, naturalist reduction.¹⁰ David Chalmers believes the hard problem of consciousness defies a materialist reduction. As a result, the best that naturalistic materialism can offer is an incomplete picture of the universe. Simply issuing a promissory note to science in the hope that one day it will be complete and able to explain these phenomena is itself a type of faith in science that is unwarranted. Thus evolutionary theory does not entail naturalism. One can believe in evolution, i.e., assert that Adam had ancestors, and still be a theist.

¹⁰ Thomas Nagel, *Mind and Cosmos: Why the Materialist Neo-Darwinian View of the Cosmos is Almost Certainly False* (New York: Oxford University Press, 2012), 16-17.

2. Mapping the Possible Implications Evolutionary Theory Might Have

Asking what the logical implications of evolutionary theory are could result in a wide range of answers to a number of diverse questions. Examining some of these briefly is worthwhile to help understand which implications will or will not be considered in this study. Anyone working in the philosophy of mind is aware that evolutionary theory has very strong implications on the nature of mind. Does evolutionary theory disprove mind/body substance dualism, or the claim that humans have a divinely created soul, by arguing that rationality is simply the result of having the most highly developed neo-cortex on the planet? What implications might evolutionary theory have on the free will/determinism debate? Is it possible that we are genetically determined? What implications does evolution have for human nature? If humans share a common ancestor with primates, are we more like our murderous, patriarchal chimpanzee cousins, or promiscuous, matriarchal, pacifistic bonobos? There are also implications that evolutionary theory has for sexuality. Are men programmed to try to have as many mates as possible? Is evolutionary success measured by the number of offspring one has? Was serial monogamy, rather than monogamy, more ‘natural’ to our ancestors?¹¹ What implications does evolution have for social, economic, and political thought? And there are more logical implications in the field of ethics. What would an ethic based upon evolutionary theory or naturalism look like? What implications does evolutionary theory have for race theory? Do races exist, or are they social constructions?

¹¹ Helen Fisher, *Why We Love, The Nature and Chemistry of Romantic Love* (New York: Henry Holt and Co., 2004), 134. She states: “So here’s my theory: perhaps like robins, foxes, and many other serially monogamous creatures, ancestral humans living some 3.5 million years ago paired with a mate *only long enough to rear a single child through infancy – about four years.*”

The subtitle of the *Origin of Species by means of Natural Selection* is, ‘Or the Preservation of Favoured Races in the Struggle for Life.’ ‘Race’ is not a term normally applied to animal and plant subvarieties; it is usually only applied to humans. Is Darwin suggesting in the subtitle that human races are locked in a struggle with one another, or that some are favoured? Is this a possible implication of the *Origin*? There have been many attempts to work out the implications of Darwin’s theory in recent history. Some people believe that Hitler’s mindset was due, at least in part, to the work of several German Darwinists, primarily Ernest Haeckel.¹² It has been argued that Hitler used Darwinist principles to justify his racial ideology and militant attitude toward other nations and races. His expansionist policies to secure Lebensraum (living space) can also be seen against the backdrop of the struggle to survive. Certain remarks of Darwin’s can be interpreted as supporting both eugenics and Social Darwinism. Darwin states in *The Descent of Man* that civilized society, by providing asylums for the sick and insane, medicine for the sick, and handouts to the poor, allows “the weak members of civilized societies to propagate their kind...care wrongly directed, leads to the degeneration of a domestic race; but excepting in the case of man himself, no breeder is so ignorant as to allow his worst animals to reproduce.”¹³ Darwin then states that the bad effects of providing care to the less fit out of sympathy are at least kept in check by the fact that “the weaker and inferior members of society do not marry so freely as the sound.”¹⁴ It is

¹² Richard Weikart, *From Darwin to Hitler* (New York: Palgrave Macmillan, 2004), 24-29.

¹³ Charles Darwin, *The Descent of Man* (New York: Penguin Books, 2004), 159.

¹⁴ *Ibid.*, 160.

argued that this passage helped provide the impetus to Hitler's belief that the state should be in control of its citizens' reproduction, and that the state should become a 'biocracy.'¹⁵

But to say that Nazism is a necessary logical implication of evolutionary theory is a difficult claim to justify. The form of Darwinism that was prominent in Germany was Ernest Haeckel's distorted form of social Darwinism, and Haeckel's books outsold Darwin's there.¹⁶ But Nazism had many influences. Robert Richards thinks that it is difficult to establish the causal influence of evolution on any particular person, and even if one could, he argues, the logical implications of evolution do not result in Nazism. Roberts notes that the historical roots of Christian anti-Semitism long preceded the rise of evolution. Richards thinks Nazism lacked any kind of coherent guiding ideology, let alone the ideas of Darwin. Nazi racism reflected more the irrationality of Nazi madness and hatred, than the logical results of a well thought out, applied Darwinism.¹⁷

James Moore and Adrian Desmond, who have written several biographies of Darwin, also claim that Darwin's ideas lead not to racism and eugenics, but to the racial brotherhood of all men. They argue that the ideas Darwin presents in *The Descent of Man* attempt to demonstrate the common ancestry of all humans from animals, thereby demonstrating the ultimate unity of the human species. Darwin did not see blacks and whites as separate species, but as siblings sharing common descent through a 'joint ancestor' who was African, not European.¹⁸ Moore and Desmond claim that Darwin saw unity in and continuity across the races, although others saw disunity and difference.

¹⁵ Jerry Bergman, *Hitler and the Nazi Darwinian Worldview* (Kitchener, Ontario: Joshua Press Inc., 2014), 29, 34, 44, 106.

¹⁶ Yvonne Sherratt, *Hitler's Philosophers* (New Haven: Yale University Press, 2014), 54-56.

¹⁷ Robert J. Richards, *Was Hitler a Darwinian?* (Chicago: University of Chicago Press, 2013), 196-200.

¹⁸ Adrian Desmond and James Moore, *Darwin's Sacred Cause, How a Hatred of Slavery Shaped Darwin's Views on Human Evolution* (Boston: Houghton Mifflin Harcourt, 2009), xvii-xviii.

While on the *Beagle*, Darwin argued with Captain Fitzroy and others over slavery, and found any attempt to justify the slave trade repugnant.¹⁹ His later theory to a certain extent rejected teleology, or the idea that evolution is progressive. Natural selection favors individuals that are best adapted to a particular environment. A higher degree of adaption does not imply in any way an overall qualitative ‘superiority.’

Darwin believed that the human race was “split into climatically adapted clusters.”²⁰ Dark skin is simply an adaptation that helps protect one from the blistering tropical sun. Similarly, sickle cell anemia helps protect Africans from malaria. These are simply adaptations favored by a tropical climate, but in and of themselves there is no qualitative superiority or inferiority in possessing them, apart from the particular environment one finds oneself in. As humans moved out of Africa and into northern climates, their skin color changed in response to the changing environmental pressures. In *The Descent of Man*, Darwin recognizes that “a tropical sun, which burns and blisters a white skin, does not injure a black one at all.”²¹ While Darwin has an intuition that skin pigmentation is related to climate, he knows nothing of melanin or of the body’s ability to produce vitamin D in response to sunlight, and so admits he is “unable to judge” if skin color is acquired by means of natural selection. Darwin will ultimately attribute the differences in races to sexual selection, or the belief that differing tastes in beauty, which he sees as cultural (analogous to different tastes in music among cultures), as leading to different preferences in mating choices. He states: “We have thus far been baffled in all

¹⁹ Adrian Desmond and James Moore, “Introduction,” in Charles Darwin’s *The Descent of Man* (New York: Penguin Books, 2004), xxvii-xxx.

²⁰ Adrian Desmond and James Moore, *Darwin, the Life of a Tormented Evolutionist* (New York: Warner Books, 1991), 241.

²¹ Darwin, *The Descent of Man*, 226-7.

our attempts to account for the differences between the races of man; but there remains one important agency, namely Sexual Selection, which appears to have acted powerfully on man....It has seemed to me highly probable that sexual selection has played an important part in differentiating the races of man.”²²

Today we know that skin pigmentation and other alleged markers of ‘race’ are only a small part of the entire human genome. Richard Lewontin’s famous 1972 article, ‘The Apportionment of Human Diversity,’ argues that racial taxonomic classifications among humans are a social construct, rooted in culture, with no genetic basis. Lewontin argues that because “genetic variation within the so-called ‘races’ is far greater than between the most typical members of one race and another,” human racial taxonomic classifications are a myth.²³ This has led some anthropologists to conclude that all humans are “Africans ‘under the skin.’”²⁴ Other anthropologists argue that Lewontin misinterprets the data, and that overall genetic variance is not that important, since a change in a single gene can radically alter the overall structure of an organism.²⁵

Christopher Hitchens believes this is just another example of how science and evolution disprove the Bible. He notes that slavery is condoned by the Bible. He argues, “Christian preachers of all kinds had justified slavery until the American Civil War and even afterwards, on the supposed biblical warrant that of the three sons of Noah (Shem, Ham, and Japhet), Ham had been cursed and cast into servitude.”²⁶ Evolution and the genetic similarity amongst all humans undermines the notion of ‘race,’ and therefore

²² Ibid., 129, 19.

²³ Brian Garvey, *Philosophy of Biology* (Montreal: McGill-Queens University Press, 2007), 209-210.

²⁴ Pamela R. Willoughby, *The Evolution of Modern Humans in Africa* (Lanham, MD: AltaMira Press, 2007), 331.

²⁵ Gregory Cochran and Henry Harpending, *The 10,000 Year Explosion: How Civilization Accelerated Human Evolution* (New York: Basic Books, 2009), 15-18.

²⁶ Christopher Hitchens, *god is not Great* (New York: Hatchett Book Group, 2007), 166-167.

discredits slavery as being justified on either a racial basis, or as the result of a perceived divine punishment. This debate is relevant because it shows how an understanding of race that has been based upon the Bible, has been replaced by another understanding of race based upon a modern understanding of genetics.

This study will attempt to narrow the field of the possible logical implications of evolutionary theory by primarily concerning itself with those implications evolutionary theory has for the metaphysics of theism and naturalism. Does evolution occur only through natural means, or merely primarily through natural means? What does it mean to say something is 'natural'? Does the belief that evolution is not a guided process necessitate that one should adopt physicalism as a metaphysic? Can evolution give rise to non-physical, emergent properties such as mental content, semantic understanding, numerical and moral values, or even a soul? Or are there phenomena in the universe which cannot be accounted for in terms of the random processes favored by evolution? If so, do they require the guidance of an intelligent designer? Since evolution occurs only if life, complexity, and a physical world exist, can evolution explain the origin of life, complexity, or the world? Last, since evolutionary theory is a scientific theory, can the scientific method be employed to determine the credibility of beliefs involving the supernatural, or the theistic God?

3. Models the relationship between Religion and Science might take

Some cast evolution as just the latest battle in the long history of warfare between science and religion. As a result, asking what implications evolution has for theism is

similar to asking whether science is compatible with religion in general. Compatibility here means logical consistency. Consistent statements are those that can both be true at the same time. Contradictory statements mean that if one is true, the other must be false, and vice versa, that is, the statements must differ in truth value.²⁷ Asking whether evolution, naturalism, and theism are compatible, or logically consistent, means asking whether they can all be true. If this is possible, then they are logically consistent. If one of them must be false, given that the others are true, this means that they are logically inconsistent, and perhaps contradictory. As will be demonstrated, theism and metaphysical naturalism will be contradictory positions, therefore entailing that evolution, naturalism, and theism are inconsistent, or incompatible.

The Scientific Revolution is considered revolutionary because it completely changed the medieval worldview that existed prior to the rise of science. Science is often portrayed as being discontinuous with the medieval worldview, which was essentially religious in outlook. That science was ‘revolutionary’ in overthrowing this worldview is one of the assumptions of the Incompatibility or Warfare thesis. This thesis argues that there is a tension between science and religion, that they are discontinuous rather than continuous. However, this assumption is not necessarily true. The Scientific Revolution did not ‘overthrow’ the medieval worldview, it simply transformed it.²⁸ Yes, there is discontinuity, but there is also much continuity. Scientific thinkers built upon the work of many ‘natural philosophers.’ These early ‘scientists’ were often religious and saw themselves as studying God’s creation. To them science was a form of natural

²⁷ Stan Baronett, *Logic* (Oxford: Oxford University Press, 2016), 352-3.

²⁸ Maria Boas, *The Scientific Renaissance 1450-1630* (New York: Harper & Row Publishers, 1962), ix.

theology. So to the first scientists, if there was a weak link in the chain, it wasn't science or religion, it was naturalism.

It is a central claim of the New Atheists that science, and the scientific method, disprove religion, and more particularly, theism, which portrays God as a transcendent being who actively governs the natural world. The New Atheists also assert that evolutionary theory in particular discredits theism and supports naturalism. However, these claims need to be examined, for they are by no means self-evident. Evolutionary theory wasn't seriously considered as an acceptable hypothesis until the publication of Darwin's *Origin* in 1859. The New Atheists see it as the latest and most decisive battle in the long history of 'warfare' between science and religion. However, there are alternatives to the 'conflict' or 'warfare' model. Some see science and religion as compatible, rather than incompatible. So before we consider whether evolution favors naturalism or theism, let us first consider the history of the relationship between science and religion, so that alternative models to the 'conflict' thesis are given their due.

Religion and science can be seen as either being compatible or incompatible. What does it mean to say that religion and science are compatible? It is to say that they are logically consistent. Consider the claim that they are similar in a variety of ways. One proposed similarity is that the questions they raise and the goals they seek are similar. They both investigate and seek to determine what there is metaphysically and what is ultimately real. According to this view, scientists are investigating God's creation, and in coming to understand the nature of the created world, are coming to know the nature of the mind of the architect of nature, God. As Einstein famously said, "I want to know God's thoughts," meaning that an understanding of the laws that govern

physics is a reflection of the divine mind that is the source and origin of those laws. Thus all truth, including truth about the physical world, is none other than God's truth. To say that religion and science are incompatible is to say that while they both investigate common questions, their theories and answers to these questions are incompatible with one another. To see them as two separate fields is to argue that they each ask different questions and use different methods in answering them.

Ian Barbour, in his book *Religion in an Age of Science*, sketches four possible models to describe the way that Religion and Science may interact.²⁹ (1) The Conflict model, as noted, asserts that science and religion are incompatible, in that both fields involve or make inconsistent claims about reality. The Conflict model presents two possibilities: science triumphs over religion, or religion defeats science (a third possibility is that both are false). (2) The Independence model is not so much a model stating that the two are incompatible, as that each constitutes a separate domain and addresses different questions. (3) The Dialogue model and (4) the Integration model both assert the continuity between science and religion, with the latter asserting a higher degree of continuity. In the Dialogue model, there is overlap and interaction between the two, as there is in the field of natural theology as traditionally conceived. In the Integration model, the two fields essentially merge into the same field, with current scientific theory mandating a reformulation of traditional theological doctrines. Michael Ruse, in his introduction to Bertrand Russell's *Religion and Science*, also invokes these four models, but gives them slightly different names: Opposition or warfare, Separate,

²⁹ Ian Barbour, *Religion and Science: Historical and Contemporary Issues* (New York: Harper Collins, 1997), 77-107.

Dialogue, and Integrative.³⁰ John Haught combines the Dialogue and Integration models into the same category, which he calls ‘Convergence.’³¹ Alister McGrath labels them ‘Confrontational Models’ and ‘Non-confrontational Models’ (Distinct and Convergent).³²

If the subject matter of science and religion do not overlap, but address different domains, as in the Independence model, then there doesn’t appear that there is much of a problem. Just as there is no tension or friction between the subject matters of engineering and poetry, as there doesn’t seem much overlap between them, similarly if there is no overlap between science and religion then there should be no friction between them. It is within the Conflict model, rather than the Independence model, that problems appear to arise. Science and religion are seen as incompatible, if not contradictory. For the New Atheists, science and religion do overlap and are contradictory. One is forced to choose between them. One of their central claims is that the findings of science refute the claims of religion, as science is built upon evidence, whereas faith is not. Adherents to the Conflict model claim that the recent findings of science demonstrate that Biblical claims about human origins and the metaphysical nature of human beings are false.

4. The Historical Origins of Science and the ‘Continuity Question’

A common characteristic of the New Atheists is that theistic belief is neither rational nor justifiable. Is it true that theistic belief is not rational, that all faith is blind faith, lacking any justification whatsoever? This seems to be a peculiar interpretation of

³⁰ Bertrand Russell, *Religion and Science* (Oxford: Oxford University Press, 1997), viii-ix.

³¹ John Haught, *Science and Faith* (Mahwah, NJ: Paulist Press, 2013), 10-20.

³² Alister McGrath, *Science & Religion* (Malden, MA: Blackwell Publishing, 1999), 44-50.

theistic faith, as there is a long philosophical tradition which sees faith as compatible with reason. In other words, there seems to be continuity, rather than discontinuity, between religion and science, and faith and reason. This tradition has long blended theology and metaphysics, and found good reasons for faith. People who claim religion is discredited by science often believe in a master narrative which casts religion and theology as nothing but superstitious belief that hinders the development of a scientific outlook. However, science grew out of a philosophical tradition that began as a rational inquiry into the nature of reality, one that appealed to supernatural causes as much as natural causes. The term ‘science’ is of relatively recent coinage, first introduced with its current meaning in the nineteenth century. Prior to this, any systematic attempt to explain nature was known as ‘natural philosophy.’³³ The first scientists were philosophers of nature whose attempt to explain the natural world was intertwined with issues related to metaphysics, ethics, and religion.

Several historians of science have denigrated the contributions of ancient Greek and medieval philosophers, stating that what they were doing was speculative and could not be considered ‘real science.’ This is the ‘continuity question,’ whether ancient Greek philosophy and the medieval religious worldview are continuous with modern science. David Lindberg cites the views of Francis Bacon, Voltaire, and Jacob Burckhardt as adherents of the discontinuity camp. Bacon wanted to start over, to begin anew, not with the views of the ancient philosophers, but with data based on a detailed study of nature. He argues in the *The New Organon* that when discussing the history of science, “neither

³³ Gillian Barker and Philip Kitcher, *Philosophy of Science* (Oxford: Oxford University Press, 2014), 4.

the Arabians nor the Schoolmen need to be mentioned, who in the intermediate times rather crushed the sciences with a multitude of treatises, than increased their weight.”³⁴

The historian of science Pierre Duhem, on the other hand, is one of the proponents of continuity between early and modern science. He believed that “the method of the physical sciences was defined by Plato and the Pythagoreans of his day,” not the more customary candidates of Galileo, Descartes, and Bacon.³⁵ Similarly, Ernst Mayr claims that “no one had a greater influence on the subsequent development of science” than Plato and Aristotle.³⁶ If one was concerned only with the history of modern science, or the modern scientific method, one might begin with the 1543 publication of Copernicus’s *On the Revolution of the Heavenly Spheres*, which is said to have inaugurated the scientific revolution. But it is doubtful that this ‘scientific revolution’ would have happened without the foundation that was laid by the inquiries into nature that began with the ancient Greek philosophers. Nor was the investigation of nature considered a separate discipline from theology. Copernicus was the canon of the cathedral of Frauenburg, although he never became a priest. It was Pope Leo X’s invitation to astronomers to reform the calendar that led Copernicus to write *On the Revolution of the Heavenly Spheres*.³⁷

Plato’s contribution to science was concerned with mathematical reasoning, and of truths self-evidently known to reason, which were akin to ethical values in being immutable. In contrast to the deductively certain truths of math, Plato took little interest

³⁴ David C. Lindberg, *The Beginnings of Western Science* (Chicago: University of Chicago Press, 2007), 357-8.

³⁵ John Deely and Raymond Nogar, *The Problem of Evolution: a Study of the Philosophical Repercussions of Evolutionary Science* (New York: Appleton-Century-Crofts, 1973), 32.

³⁶ Ernst Mayr, *The Growth of Biological Thought: Diversity, Evolution, and Inheritance* (Cambridge: Belknap Press, 1982), 87.

³⁷ Anthony M. Alioto, *A History of Western Science* (Englewood Cliffs: Prentice-Hall, Inc., 1987), 176.

in earthly things.³⁸ In the *Apology*, Socrates states: “What I *do*, as I move around among you, is just this: I try to persuade you, whether younger or older, to give less priority, and devote less zeal, to the care of your bodies or of your money than to the care of your soul and trying to make it as good as it can be.”³⁹ Socrates’s concern was decidedly inward, rather than outward. Plato essentially believed in Heraclitus’s notion of flux – that everything in the sensible world was always in the process of change. This is rooted in Heraclitus’s famous saying, ‘you can’t step into the same river twice.’⁴⁰ The water that you stepped into yesterday is different from the water that you step into today. The only phenomena that seem immune from change are the truths of mathematics. The Pythagorean Theorem is true for all time and does not change, hence is immutable. The square of the hypotenuse of a right angled triangle is always equal to the sum of the square of its sides. This is not a sensible observation, but is only known only through the mind, intelligibly. Hence Plato made a sharp division between the intelligible and sensible. Plato’s ‘forms’ are the conceptual equivalent of these mathematical truths designating eternal, transcendent essences which are unchanging, the primary ones being the Good, the True, and the Beautiful. Mathematics is the bridge to knowledge of the permanent, the stable, the transcendent, and so was the main field of study at the Academy.

Aristotle, on the other hand, based his self-evident axioms empirically. It was self-evident that the earth was motionless, or that “the speed of an object’s fall was

³⁸ Isaac Asimov, *Asimov’s New Guide to Science* (New York: Basic Books, 1984), 9-10.

³⁹ Plato, ‘Apology,’ in *The Last Days of Socrates*, trans. by Christopher Rowe (New York: Penguin Books, 2010), 48, (30a-30b).

⁴⁰ Heraclitus, “Fragments,” in *The PreSocratics*, ed. by Philip Wheelwright (New York: Macmillan, 1989), 71.

proportional to its weight (anyone could see that a stone fell faster than a feather.)”⁴¹ It wasn’t until Galileo that anyone thought of testing these axioms. Nevertheless, we are all intellectual heirs or ‘children’ of Aristotle, because our scientific outlook is indebted to Aristotle’s empiricism. Aristotle is considered the father of many of the sciences, among them logic, physics, biology, zoology, politics, and metaphysics. Richard Rubenstein terms the Medieval Renaissance, the ‘Aristotelian Revolution,’ because it was sparked by the rediscovery of the writings of Aristotle in the 12th and 13th centuries (as well as the rise of the first universities at that time). This in turn provided the foundation for modern science and helped to fuel the birth of the Scientific Revolution. Rubenstein believes the beginning of the debate over the compatibility of science and religion started not with Galileo’s trial, but with the rediscovery of Aristotle’s writings.⁴² However, the debate could not be accurately called the debate between science and religion because at the time science, as understood today, did not exist. It should be clear that Rubenstein’s claim is not that Aristotle is the father of modern science, for his methods were clearly different and there is little emphasis on experimentation in his thought. But without Aristotle’s empirical method, it is impossible to tell when modern science would have emerged. Thus Ernst Mayr says, “No one prior to Darwin has made a greater contribution to our understanding of the living world than Aristotle.”⁴³

The Aristotelian approach is much more compatible with the modern scientific outlook than Plato’s epistemology because it does take an active interest in the external world and is rooted in sense experience. Aristotle’s metaphysics rejected the

⁴¹ Asimov, *Asimov’s New Guide to Science*, 10.

⁴² Richard E. Rubenstein, *Aristotle’s Children; How Christians, Muslims, and Jews Rediscovered Ancient Wisdom and Illuminated the Dark Ages* (Orlando, FL: Harcourt Inc., 2003), 6-7.

⁴³ Mayr, *The Growth of Biological Thought: Diversity, Evolution, and Inheritance*, 87.

otherworldly nature of the forms and believed that forms or essences were real, but only resided in the things which they typify. Aristotle's hylomorphism is discussed in several places. In the *Physics*, he argues that all concrete particulars are the hylomorphic composite of the twin constituents Form and Matter. This is confusing because Aristotle uses the term 'form' in a similar but different way from Plato. The Greek word for Form is *eidos*, or 'idea,' the same word Plato uses to refer to his non-material Forms as immutable universal essences which are somehow the explanation of the intelligibility of material particulars. Plato did not believe that essences are embodied in material particulars. Rather, they stand apart from particulars, and it is only through the relation of 'participation' that they are connected with the particulars which seek to imitate or copy them. For Plato, Socrates strives to be a rational animal, whereas for Aristotle, Socrates essentially is, potentially if not actually, a rational animal.⁴⁴ Aristotle weds a sensible object's form to its matter. The form of the human body for Aristotle is a rational soul and inherent in this soul are the capacities of being rational.

Aristotle uses the same Greek word *eidos* for both species and form. In the *Categories* Aristotle uses *eidos* to mean 'species,' which are a secondary substance, but in the *Metaphysics* the term *eidos* is the form that matter takes in a hylomorphic composite.⁴⁵ In the *Categories* that which is ontologically basic are particulars, not universals. But in the *Metaphysics*, with the introduction of hylomorphism, form is equated with a thing's essence and eventually substance. "By form I mean the essence of

⁴⁴ Jonathan Lear, *Aristotle: The Desire to Understand* (Cambridge: Cambridge University Press, 1988), 269.

⁴⁵ S. Marc Cohen, "Aristotle's Metaphysics," in *Stanford Encyclopedia of Philosophy* [<http://plato.stanford.edu/entries/aristotle-metaphysics/>], pg. 12.

each thing and its primary substance.”⁴⁶ “Substance is the indwelling form.”⁴⁷ Cohen sees the motivation of Aristotle’s identification of essence as substance as “clearly anti-Platonic.” Whereas Plato saw the Forms as existing separately from the objects and minds that participated in them, Aristotle wants to identify what a thing is with its essential substance.⁴⁸ This is why in Raphael’s painting of the ‘Academy.’ Plato is holding a copy of the *Timaeus*, which argues there are two worlds, the physical world of change, and the eternal world which never changes. He is pointing upward, as if to demonstrate that Forms, that which is substantive and truly real, are transcendent and lie beyond this world. Aristotle is pointing downward towards the ground, as if in disagreement, and indicating his belief that Forms are immanent. This reflects the differences in their metaphysics and epistemologies. Plato believes that the study of math reveals a universe governed by and patterned after a transcendent realm of rational Forms. Aristotle, on the other hand, appears to be more of a naturalist who believes the starting place is empirical data, which can be trusted to provide knowledge of physical essences.

Aristotle’s *Physics* states that to know what something is, is to know its four causes: material (what it’s made of), formal (its essence), efficient (that which moves something to come into being), and final (the end towards which it serves). Although Aristotle’s hylomorphism makes the forms immanent by placing them in matter, Aristotle is not necessarily a naturalist. Involved in coming to know the four causes is an

⁴⁶ Aristotle, *Metaphysics*, ed. by Jonathan Barnes (Princeton: Princeton University Press, 1984), 1630, 1032b1-2.

⁴⁷ *Ibid.*, 1637, 1037a29.

⁴⁸ S. Marc Cohen, “Individual and Essence in Aristotle’s *Metaphysics*,” *Paideia*, Special Aristotle Issue (1978), 76.

understanding of their metaphysical nature. Aristotle's *Metaphysics* begins by stating "All men by nature desire to know." Aristotle believes that a supernatural godhead is necessary to explain the motion of the universe – an Unmoved Mover who is the pure actuality that celestial beings seek. Later authors will argue that humans are "the being in quest of the ground of existence," which is God, who is pure actuality and thus self-sufficient. So one can interpret Aristotle as saying that what human understanding seeks is found in God.⁴⁹

5. The Medieval Scholastic Synthesis and Counter reactions

This fundamental difference between Plato and Aristotle is important in the debate between science and religion because their views will be incorporated into the theistic traditions of Judaism (Maimonides), Christianity (Augustine, Aquinas), and Islam (Avicenna, Averroes) during the Middle Ages. This approach employed human reason and Greek philosophy into the service of helping to understand theistic faith based on revelation. Reason was seen as compatible with faith. It could serve to illuminate and support its tenets, but it was not an equal. Reason and natural philosophy were considered to be the 'handmaiden' of the faith. Aquinas believed that reason could establish some of "the preambles of the faith," such as God's existence, as well as disprove objections made against the faith.⁵⁰

⁴⁹ Brendan Purcell, *From Big Bang to Big Mystery, Human Origins in the Light of Creation and Evolution* (Dublin: Veritas, 2011), 47-8.

⁵⁰ Lindberg, *The Beginnings of Western Science*, 242.

Augustine's theological synthesis combined the dominant Neoplatonism of his time with the Christian tradition. His interpretation remained authoritative and fairly normative until the time of Aquinas. Augustine saw Platonism as compatible with his Christian faith because he identified the Platonic Forms with ideas in the mind of God. However, for Plato the forms had their own ontological existence, similar to the Pythagorean Theorem. Under the Neoplatonism of Plotinus, the forms radiated or emanated from the One. For Plato, knowledge of the Forms was evidence of the immortality of the soul, for one cannot learn what, for instance, equality is sensibly. Since no things of this world ever exhibit perfect equality, then the only way one could have learned this was by living a previous life, in which, in a disincarnate state one was exposed to the transcendent Form for equality. Thus all knowledge is recollection, or *anamnesis*, learning is simply remembering things known in a previous life.⁵¹ Yet reincarnation is rejected by Christianity, thereby cutting off this pathway to knowledge of the highest Form, the Good. Augustine solves this problem by arguing that this is evidence for the necessity of the Incarnation, in which the divine forms descend in order that humans may come to know them. Jesus is the Neoplatonic *nous* made flesh, the *logos*, who embodies Goodness itself. If you want to become acquainted with the Good, then you must read the Bible, which contains the record of the only person to live a sinless life, Jesus. The Good is not known through anamnesis, but through divine revelation.

The problem here, is that Neoplatonism is based on a cosmology of emanation, in which everything radiates outward from the One in hierarchical fashion. It is more

⁵¹ See Plato's *Phaedo*, 72e-76e.

pantheism with gradated levels of being than theism, and may not be compatible with the theist's belief in creation rather than emanation. The material universe, since it is the furthest emanation from the One, is of less being than the spiritual and ideal forms they reflect. The things of this world are ephemeral, not fully real. This is incompatible with the Christian account of creation in a single direct act by God, along with the claim that the physical world is good. The belief that God creates a unique human soul for each individual, made in the image of God, is also incompatible with the Neoplatonist view that each soul is a drop or spark of the divine, immortal and capable of countless incarnations in human and animal form.

Due to the decline of the Roman Empire, as well as a decline of scholars fluent in Greek, many of the works of Aristotle were lost to the Latin speaking West. With the rise of Christianity, and the emphasis on the salvation of one's soul and otherworldly happiness, interest in the natural philosophy of Aristotle waned. In the sixth century, Boethius, who was one of the last scholars fluent in both Roman and Greek, was in the process of translating all the great works of antiquity into Latin before he fell out of favor with the Ostrogoth King of Italy, Theodoric, and was imprisoned and executed. Boethius was one of the last Westerners to study at Plato's Academy before the Christian Emperor Justinian closed it in 531 because it was a center of pagan learning. He did, however, manage to translate Plato's *Timaeus* as well as the first six books from Aristotle's work on Logic, the *Organon*. But after the rise of Islam, this was all of the ancient Greek philosophy that was to be known by the West for the next 600 years. It was not until the middle of the twelfth century into the thirteenth, when the Muslims were driven out of Spain, that copies of Aristotle were recovered from the libraries of Cordova and

Barcelona. Much of Spain as well as Sicily had been in Muslim hands from 902 to 1091. Many see this event as the precipitating event that would eventually give rise to science. However, not only were Aristotle's works recovered, but so were many commentaries on them by Islamic scholars, most notably Avicenna and Averroes.⁵² In addition, many other Islamic works on science were also translated. Works by Hippocrates, and Galen must not be overlooked, and may have played as much a part in fueling the renaissance as Aristotle's corpus.

Thomas Aquinas was then commissioned to synthesize the teachings of the Christian faith with the philosophy of Aristotle, to 'Christianize' Aristotle. While it is beyond the scope of this study to summarize Aquinas, considering a few points that are relevant to our topic will be of help. To begin with, it is obvious that Aquinas's synthesis is different from Augustine's. Augustine believed the fall abrogated humanity from the divine, that because of the fall all of humanity, including reason, has been tainted. Aquinas, on the other hand, sees nature as continuous with the divine, and as a result, reason can be perfected by grace. Humans using reason can know some truths about God, and what can't be known using reason may be known through divine revelation. God's existence can be demonstrated in five different ways, by proceeding *a posteriori*, with things known to the senses. But that God is triune in nature, cannot be known, and hence must be revealed. Aquinas therefore believed that those parts of Aristotle which were speculative and contrary to Christian belief could be ignored. Therefore, in general, Aristotle's thought could be made compatible with Christian teaching.

⁵² Alioto, *A History of Western Science*, 120-1.

Similarly, Aristotle's empirical realism is maintained by Aquinas, but with a few changes. Aristotle believed the world was eternal. This allows him to maintain substantial essences are permanent, while at the same time not transcendent, thus residing in things. Contingent things, therefore, can be dependent upon other contingent things for their being, as long as there is an infinite series (which Aquinas denies there can be). But if the universe has a beginning, as theism believes, then God, the only subsistent Being for whom existence and essence, or Being and Essence, are one, must be the necessary cause of contingent things.⁵³ Hence underlying the being of all objects of scientific study is the ultimate source of Being, God. Because the sciences study only various beings, parts of Being, but not Being itself, "metaphysics does not depend completely upon the content of Aristotelian science."⁵⁴ No science studies existence *per se*, only metaphysics does. This shows that while the content of the two realms is different, they are also interdependent. There could be no sciences without God as the creator and sustainer of the being of the objects science studies. Thus if one pursues metaphysical analysis far enough, contemplation of the Being of beings will ultimately lead one to God. Universal essences are eternal not because they were in contingent things, but because they were in the mind of the God who made them. Through abstraction and intuitive induction of particulars, a thing's quiddity, or essence, can be known by human beings.

Aquinas clearly stands in the compatibilist tradition, believing that reason and faith, science and religion, are compatible. Aquinas believed that Aristotelian philosophy

⁵³ Thomas Aquinas, *On Being and Essence*, trans. by Armand Maurer (Toronto: Pontifical Institute of Mediaeval Studies, 1968), 10-27.

⁵⁴ Alioto, *A History of Western Science*, 131.

served the truth and used human reason toward that end. Christian theology also served truth, but employed divine revelation to arrive at truths that lay beyond reason. Both traditions sought truth, and the only difference between them was their methodology.⁵⁵ God, as the author of truth, has also revealed himself in history and supplied knowledge of those truths that lay beyond human reason. Thus faith completes reason.⁵⁶

However, not everyone agreed with him and saw problems with his synthesis. Aristotle's vision of God was a self-absorbed God, a God concerned only with pure actuality, hence himself. He was needed only to explain motion. Neither being the Creator of the universe, nor concerned with it, Aristotle's Unmoved Mover is not the type of God to whom one could pray or who would concern himself with answering prayer. This is obviously incompatible with Christian thought. Aristotle is also ambiguous, if not dismissive, of the possibility of human immortality. In *De Anima* 3:5 he states that only the Active Intellect is eternal. To what extent this allows for a personal identity that survives death is open to debate. So for these reasons and others, Aquinas's synthesis was rejected by the incompatibilists, who saw the compatibility of reason and faith, natural philosophy and theology, as untenable.

The initial rejection came in the form of a book written by Giles of Rome, entitled *The Errors of the Philosophers*, which critiqued the work of Aristotle and the Islamic commentators. This culminated in the Paris condemnations of 1277 issued by Bishop Etienne Tempier.⁵⁷ These critics believed the Christian faith should be unadulterated, not tainted with pagan philosophy. They were continuing in the footsteps of Tertullian, who

⁵⁵ Lindberg, *The Beginnings of Western Science*, 241.

⁵⁶ Saint Thomas Aquinas, *Summa Contra Gentiles*, trans. By Anton C. Pegis (Notre Dame: University of Notre Dame Press, 1975), 23.

⁵⁷ Alioto, *A History of Western Science*, 128.

asked ‘What has Athens to do with Jerusalem?’ Luther would also be the intellectual heir of this position, rejecting the Scholastic synthesis in several different areas. In his “Disputation against Scholastic Theology,” he claims that “Aristotle is to theology what darkness is to light.” Luther claims that reason has been contaminated by the Fall to such an extent that natural theology is severely limited. Luther also regarded Aristotle’s virtue ethics as incompatible with Christian teaching, arguing that Aquinas’s synthesis of the two resulted in a Pelagian form of works’ righteousness.⁵⁸ Richard Rubenstein summarizes why one might be skeptical of any attempt to ‘Christianize’ Aristotle:

Aristotle does not appear to be aware that the world of the senses is a place of suffering and unreality, or that there is a better, more real world to come...His writings have nothing to say about God the creator or the Redeemer, and pay little attention to our sinfulness or its consequences in the afterlife. In Aristotle’s view, time and space exist eternally. Nature governs itself without divine interference, and human reason, far from being crippled, is perfectly adequate to secure man’s knowledge, good behavior, and happiness...From a Christian perspective, this worldview is godless.⁵⁹

Later Humanists would take the opposite approach. They rejected the Thomistic synthesis because it was too Christian, in that it made science subservient to the Church. They wanted to pursue science without the interference of the Church. Hence Thomas’s synthesis, based on compatibility, was opposed by those on both the religious side and the scientific side. The humanists wanted science to be a strictly secular enterprise, governed only by scientists. Francis Bacon will also advocate the uncoupling of science and Scholastic theology. Aquinas was a theologian, not a scientist, and hence should play no role in affecting a synthesis between the two. Humanists like Erasmus rejected

⁵⁸ Steven Ozment, *The Age of Reform (1250-1550), An Intellectual and Religious History of Late Medieval and Reformation Europe* (New Haven: Yale University Press, 1980), 234-6.

⁵⁹ Rubenstein, *Aristotle’s Children*, 79.

the type of science practiced in the universities because it was too indebted to scholasticism, which he saw as sterile and in need of repudiation.⁶⁰ However, since the humanists saw the practice of science as a separate sphere from the practice of religion, they may be said to be the early advocates of the Independence model rather than the Conflict model.

6. The rise of the Scientific Revolution: Galileo and the Copernican Revolution

Incompatibilists usually accept the grand narrative told by A.D. White's *History of the Warfare of Science with Theology*, published in 1896. White narrates one battle after another in the long history of this warfare, in every scientific field. Each concludes, White says, with a decisive victory of science over religion. He states, "the dogmas developed in strict adherence to Scripture and the conceptions held in the Church during many centuries 'always, everywhere, and by all,' were, on the whole, steadily hostile to truth."⁶¹ The three major battles he uses to support this conclusion are: geocentrism and heliocentrism, creationism and evolution, and the divine origin of humans and their subsequent fall. Each of these 'battles' merits consideration, but the main focus of this study is evolution. The Scientific Revolution is said to have begun with the publication in 1543 of Copernicus's *On the Revolution of the Heavenly Spheres*. However, while this date is convenient, if one were alive at the time it is doubtful one would have thought anything revolutionary occurred. It took close to 150 years for astronomers to unanimously support heliocentrism, and the heliocentrism they accepted was not the

⁶⁰ Boas, *The Scientific Renaissance 1450-1630*, 27.

⁶¹ Andrew D. White, *History of the Warfare of Science with Theology* (Amherst, NY: Prometheus Books, 1993), 113.

Copernican model. The publication of Copernicus's book hardly created a stir because very few people could understand it, since it involved a great deal of mathematical reasoning. Nor could his reasoning be said to depart from Scholastic methods in favor of modern scientific methods. His case for heliocentrism rested not upon any hard empirical evidence, but rather upon an appeal to Pythagorean harmony. If anything, the empirical evidence seemed to disprove Copernican heliocentrism, because it predicted stellar parallax, a phenomenon which was not detected until 1838. Copernicus rejected the Ptolemaic system, with all its equants and epicycles, because he believed it was inconsistent and lacked harmony. Heliocentrism, on the other hand, was a much more satisfactory explanation of planetary retrogression, i.e., the perceived backward movement of planets, as it demonstrated why the planets might appear to reverse their direction. But because Copernicus, in accord with the Scholastic and Aristotelian belief, held that the orbits of celestial bodies must be circular (because circles are perfect, as must be celestial bodies), he himself needed eccentrics and epicycles to maintain his system's alleged superior harmony to that of the Ptolemaic system.⁶²

Copernicus's theory was less dependent upon observations than on the overall coherence of theory. Tycho Brahe, on the other hand, was much more of an empiricist, obsessively recording his naked eye observations of the night sky. As a result, he combined both the Ptolemaic and Copernican systems, arguing that the sun revolved around the earth, but that all the other planets revolved around the sun. When he died, his collection of data on the orbit of Mars passed into the hands of his assistant, Johannes Kepler. Anthony Alioto claims that it was "Kepler who made the Copernican

⁶² Alioto, *A History of Western Science*, 178-81.

Revolution.”⁶³ Kepler could not accept epicycles, either Ptolemaic or Copernican, and from the precise measurements of Mars’ orbit, came to conclude that planets orbited the sun in ellipses with the sun not at the center, but at the focal point of the ellipse. This realization served as the basis of his three laws of planetary motion, which are stated as mathematical laws. Thomas Kuhn concurs with Alioto’s judgment that Kepler had enough evidence to convince a mathematician and astronomer of heliocentrism, but that his arguments were too mathematical and esoteric to be of much use in the court of public opinion.⁶⁴

Galileo provided the kind of evidence that could convince a layman untrained in math of the truth of heliocentrism. He did so in the form a telescope. There it was for anyone who cared to look – the mountains of the moon, the four satellites of Jupiter, the rings of Saturn, and the numerous stars of the Milky Way. But the most critical piece of evidence provided by Galileo’s telescope was the fulfillment of a prediction made by Copernicans, that if heliocentrism was true, then Venus should undergo phases like the moon. Galileo’s telescope confirmed that it did. It is interesting to note that a historian of science like Thomas Kuhn fails to even mention Galileo’s trouble with the Catholic Church for championing heliocentrism, whereas Bertrand Russell, in his book *Religion and Science*, makes Galileo’s trial the central focus. Why is this? It is perhaps because Kuhn sees Science and Religion as separate spheres, whereas Russell does not. Galileo’s case is a textbook example of the Conflict Thesis for Russell, evidence that religion and science are in conflict with one another, and as in the example of Galileo, it is science that wins out.

⁶³ Ibid., 185.

⁶⁴ Thomas S. Kuhn, *The Copernican Revolution* (Cambridge: Harvard University Press, 1957), 219.

So just what threat exactly did Galileo's support of heliocentrism pose to the Catholic Church? As noted, Copernicus favored heliocentrism because of its overall coherence or harmony, not because of any new evidence. What Galileo provides is hard evidence that clearly favors heliocentrism over geocentrism. From the years 1610 to 1613, he published the findings he obtained through the use of his telescope and explicitly stated they supported Copernicanism. This led the Catholic Church to condemn Copernicanism in 1616. The Scholastic synthesis had combined Aristotelianism with the teachings of the Bible. Both Aristotle and the Bible asserted a fixed earth at the center of the universe; however, Aristotle believed the earth was a sphere, whereas passages in the Bible suggested the earth was flat. Psalm 93:1 and 96:10 state: "the world is firmly established, it cannot be moved." At Joshua 10:12-13, Joshua commands the sun to stand still and it does. This implies it is the sun that travels across the sky while the earth is fixed. In arguing for heliocentrism, Galileo states that these passages should be interpreted figuratively, and not literally. But the Council of Trent in 1546 had "explicitly limited the interpretation of the Bible to the bishops and councils of the church."⁶⁵ Galileo was neither a theologian nor a church official. His pronouncements on what the correct interpretation of Scripture is challenged the authority the Church claimed only for its magisterium in response to Protestant debates. Galileo's claim provoked the Church to act. In 1616 it issued a decree stating that "Copernicanism was false and completely contrary to the Divine Scriptures."⁶⁶ As a result Copernicus's *On the Revolutions of the Celestial Spheres* was placed on the Index

⁶⁵ Richard J. Blackwell, "Galileo Galilei," in *The History of Science and Religion in the Western Tradition*, ed. by Gary B. Fernberg (New York: Garland Publishing, Inc., 2000), 86.

⁶⁶ *Ibid.*, 87.

of Forbidden books, and Galileo told he could discuss it only hypothetically. When Galileo argued forcefully once again for Copernicanism in his 1632 work, *Dialogue Concerning the Two Chief World Systems*, a trial was held the following year, in which Galileo was forced to denounce heliocentrism. But only over time, rather than due to the publication of a single book, can one say that a scientific revolution took place and that heliocentrism became accepted.⁶⁷

7. Darwin's Implications for the Western Philosophic Tradition: the Death of Essentialism?

The claim that Darwinism is corrosive applies not only to religion, but to parts of the Western philosophic tradition. At the core of Western thought is Plato's and Aristotle's essentialism, which argues that what makes a species a species is its unchanging and eternal essence. Daniel Dennett states, "the taxonomy of living things Darwin inherited was thus itself a direct descendant, via Aristotle, of Plato's essentialism. In fact, the word 'species' was at one point a standard translation of Plato's Greek word for Form or Idea, *eidos*. Individual members came and went, but the species itself remained unchanged and unchangeable."⁶⁸ For the ancient Greeks, fixity of species meant that species do not change because of Platonic Forms and Aristotelian substances, not because of divine creation. It has been argued that Darwin overthrew essentialism by arguing that species are neither eternal nor immutable, that they evolve over time through the process of natural selection. The Mind-first assumptions of Platonic Idealism and

⁶⁷ Thomas S. Kuhn, *The Structure of Scientific Revolutions* (Chicago: The University of Chicago Press, 1970), 232.

⁶⁸ Dennett, *Darwin's Dangerous Idea*, 36.

Aristotelian realism are thereby inverted, exposing essences as nothing but mutating genes and arbitrary names, arising not from a mind, but an algorithmic process called natural selection. Darwin states, “I look at the term species, as one arbitrarily given for the sake of convenience to a set of individuals closely resembling each other.”⁶⁹

Thus ‘species’ is not defined by some transcendent Form or eternal essence. The term simply reflects morphological similarities or an ability to interbreed with other individuals. Thus by denying fixity of species, Darwin claims there is no Platonic form corresponding to a species, nor an Aristotelian essence joined to the material substance. Universal essences, rather than being unchanging and permanent, are now dynamic, not outside of the Heraclitian flux. Modern science now interprets these essences as various combinations of atoms, electrons, protons, neutrons, elements, molecules, RNA, DNA, and cell biology. Modern science thus views previous metaphysical systems as simply primitive attempts to explain what modern science does a better job of, rendering them interesting but no longer to be taken seriously at a metaphysical, trans-empirical level.

Elliott Sober calls this process ‘The Death of Essentialism.’⁷⁰ He notes the irony in Darwin’s choice of the title for his book, *On the Origin of Species*. It is ironic because Darwin is in fact making an argument that there is no such thing as ‘species,’ since species are fluid and morph into one another. In asserting that species have an origin, or come into being through natural selection, he is on the one hand stating they are real things. But on the other hand, he is paradoxically arguing that species change and are mutable. If an essence describes that which does not change, while only its accidental

⁶⁹ Charles Darwin, *The Origin of Species by Means of Natural Selection, or the Preservation of Favored Races in the Struggle for Life* (New York, Avenel Books, 1970), 108.

⁷⁰ Elliott Sober, *Philosophy of Biology* (Boulder, CO: Westview Press, 2000), 148.

properties change, and essences are akin to natural kinds or species, then a paradox results. In denying that species are fixed, he is denying they have an essence. Yet he wants to argue something comes into being through the process of natural selection, namely, species. The only way to resolve this contradiction is to state that species should not be understood as essences, at least in the Platonic or Aristotelian model. The term ‘species’ simply names “historical entities rather than natural kinds” which can be traced through ancestral branching.⁷¹ Sober argues that biologists today would not even define species strictly in terms of phenotypic or genetic similarities. He states that if a mutant tiger arose that was neither striped nor carnivorous, traits which are considered essential traits of tigers, the tiger would still be considered a tiger.⁷² In population genetics, there is no such thing as a species, if all members of a species have the exact same kind of essential nature. Ernst Mayr, the father of population genetics, states that we should not “think essentialistically...that all the members of a species are fundamentally the same. No! The whole point of evolution is: *each one is different.*”⁷³ Each individual is genetically unique. There is no such thing as a species essence.

However, the position that Darwinism constitutes ‘the death of essentialism’ was hotly debated amongst the biologists of Darwin’s time. Some believed that evolution is guided by a divine being toward intelligent creatures, that there is a type, or kind, of being that naturally is realized as evolution ‘progresses.’ Asa Gray and Charles Lyell argued with Darwin that evolution could be a guided process, one that is pushed toward the development of rational beings like us. Darwin, however, thought this smacked too

⁷¹ Ibid., 152.

⁷² Ibid., 150.

⁷³ Werner Callebaut, moderator, *Taking the Naturalistic Turn, or How Real Philosophy of Science is Done* (Chicago: University of Chicago Press, 1993), 280.

much of special creationism and favored strictly natural selection. It might be a process set up by God, but once set up, he felt, it required no guidance.⁷⁴ In interpreting Darwinism as resulting in the death of essentialism, Sober is siding with Darwin against Gray, Lyell, and intelligent design, opting instead for the view that evolution occurs in a strictly natural, random way. But this is not a foregone conclusion. There could be creatures an intelligent designer has in mind when creating. They might constitute natural kinds, or essences. Clearly, beings ‘made in the image of God’ would constitute such a kind. Essences also transcend species, and could be seen as constituting moral values in the way that Socrates envisioned, such as the essence or Form of Goodness itself. In some theistic frameworks, even if God set up the laws of nature and allows evolution to proceed in a natural manner, moral values might be immune from the working of evolutionary processes. If evolutionary theory is not fatal to moral realism, i.e., the claim that moral values or essences objectively exist, then Darwin is not necessarily fatal to essentialism.

8. Has Darwin refuted the Bible?

Another major battle between science and religion that White cites is the debate over human origins and the Fall. Since this is a claim made in the Bible, based on a literal interpretation of Genesis and the story of Adam’s creation and subsequent fall, if evolution demonstrates there was no historical Adam, then the incompatibilist might make the claim, as Taylor states, that ‘Darwin has refuted the Bible.’⁷⁵ The Western

⁷⁴ Nick Spencer, *Darwin and God* (London: SPCK, 2009), 84.

⁷⁵ Taylor, *A Secular Age*, 562.

theist tradition asserts that each human has a soul that was created out of nothing by God, which is immaterial, and survives death. This central claim is based upon the creation story found in the first three chapters of Genesis. It asserts that Adam and Eve's bodies were created by God out of the dust of the earth, and their souls 'breathed' into them by God. Up until the time of Darwin, most Western theists believed that Adam and Eve were real people, and all human beings were descended from them. Evolution seems to discredit this story by saying that human beings evolved from other animals, and that Adam and Eve, if they existed at all, had not only human ancestors, but common ancestry with other primates.

The implications of this are enormous for Christian theology. Even if one attempts to resolve the apparent inconsistency by interpreting the first three chapters of Genesis allegorically, rather than literally, the problem still persists. The New Atheists are certainly aware of the implications a non-existent Adam has for Christian theology. Richard Dawkins states: "To cap it all, Adam, the supposed perpetrator of the original sin, never existed in the first place: an awkward fact – excusably unknown to Paul but presumably known to an omniscient God (and Jesus, if you believe he was God) – which fundamentally undermines the premise of the whole theory....Jesus had himself tortured and executed, in vicarious punishment for a *symbolic* sin committed by a *non-existent* individual? As I said, barking mad."⁷⁶ Christopher Hitchens finds the whole theology of atonement, built upon expiating the sin of Adam, ridiculous, calling it "the nonsense story of Adam's 'Fall.'"⁷⁷ He rejects "the idea of a *vicarious* atonement," since Adam did not exist, nor pass on a fallen nature which is in need of expiation. He states he cannot

⁷⁶ Richard Dawkins, *The God Delusion*, (New York: Mariner Books, 2008), 287.

⁷⁷ Christopher Hitchens, *god is not Great* (New York: Hatchett Book Group, 2007), 156.

“accept that I am *responsible* for the flogging and mocking and crucifixion, in which I had no say and no part,” or “that the agony was *necessary* in order to compensate for an earlier crime in which I also had no part, the sin of Adam.”⁷⁸ Hitchens instead says that it is religion that is the original sin, for “presenting a false picture of the world.”⁷⁹

9. Conclusion: There is Philosophical and Scientific Continuity with Religion

The first half of the nineteenth century saw the flowering of idealism. But in the second half of the century the intellectual climate changed. The ‘Turn from Idealism’ toward secular materialism was made by both philosophers and the general public alike.⁸⁰ Idealists do not have to be supernaturalists. Idealists believe that consciousness structures reality, and if one believes consciousness emerges from matter, and then structures reality, the result is an idealistic framework grounded in naturalism. Schopenhauer takes this position, although he argues that blind will has priority over conceptual thinking. Marx reversed the direction of German Idealism by turning it on its head, claiming that dialectical historical forces head not towards the Absolute but rather Communist materialism. Freud agreed with Schopenhauer that deep unconscious forces, not reason, are in the driver’s seat of our will. Nietzsche rejected both religion and reason as the foundation of values and argued that what was needed was the courage to confront the void left by the death of God. Sartre too believes “There is no human

⁷⁸ Ibid., 209.

⁷⁹ Ibid., 205.

⁸⁰ Richard Popkin, ed., *The Columbia History of Western Philosophy* (New York: Columbia University Press, 1999), 524-55.

nature, because there is no God to have a conception of it.”⁸¹ Louis Pasteur developed the field of microbiology by recognizing the role that natural, rather than supernatural, causes play in the formation of disease through infection by germs and microorganisms, with this leading to the invention of pasteurization in 1862. The Scientific Revolution and its many notable scientific discoveries helped fuel the turn from idealism by providing natural, rather than supernatural, causes and explanations for a wide variety of phenomena.

Dennett believes Darwin and the scientific revolution are truly a universal acid, that not only idealism but all of pre-Darwinian philosophy is somehow suspect, tainted by a primitive worldview that has been rendered obsolete. He states, “Darwin shows we don’t need to draw the line in an essentialist way. What is the difference between a variety and a species? It is the Socratic activity of definition-mongering or essence-hunting... Sometimes almost everyone can see the pointlessness of the quest.”⁸² Thus the danger of Darwin’s ideas is that they run the risk of being a universal acid, so corrosive they threaten to dissolve all of the Western intellectual tradition, both religious and philosophical.⁸³ However, as noted, it has been shown that Darwin has not necessarily discredited all types of Platonic forms or universal essences. Nor has Darwin overthrown the entire medieval scholastic tradition. Parts of the theistic mesh, or web of belief, might stand in need of mending, or reformulating, but the whole tradition has not been invalidated. Contrary to the New Atheists’ claim that there is no rational basis for

⁸¹ Jean Paul Sartre, ‘Existentialism is a Humanism,’ in *Existentialism from Dostoevsky to Sartre*, ed. by Walter Kaufmann (New York: Meridian Books, 1975), 349.

⁸² Dennett, *Darwin’s Dangerous Idea*, 95.

⁸³ Taylor, *A Secular Age*, 63.

theism, there is much more continuity between the medieval tradition and modern science than the New Atheists recognize.

It is true to some extent that everything changes after Darwin. To read someone who wrote before Darwin feels different, disjointed, lacking something that someone who has written after Darwin appears to grasp. Darwin is a game changer. The theory that he develops changes the entire human worldview. One can understand analytic philosophy's seemingly dismissal of all that has been written prior to the 20th century. The basic beliefs upon which one begins to construct a worldview changed with Darwin – not just in science, but in theology as well. To some, Darwin provides a sufficient explanation for the origin of all human beings by a strictly natural process, one that took several billion years to move from single celled organisms to the human neo-cortex. The earth and the role humans play in the universe have also fundamentally shifted, from being at the center of God's creation, to being but a speck of dust in a universe with 10 billion galaxies, each containing 100 billion stars. That means that our sun is just one of a billion trillion stars (1,000,000,000,000,000,000,000 stars). The human place in the universe has drastically shrunken with the arrival of the Darwinian and modern scientific worldview. Thus one could argue that another implication of the Darwinian worldview is nihilism. That topic, however, is beyond the scope of this project. Let us first consider whether or not the 1,000,000,000,000,000,000,000 stars that make up the natural, observable world are all there is.⁸⁴

⁸⁴ Physicists today assert that the observable universe constitutes only 4% of the universe, whereas dark energy comprises 73%, and dark matter the remaining 23%. See Richard Panek, *The Four-Percent Universe* (New York: Mariner Books, 2011).

CHAPTER TWO –
A CONTEMPORARY SOLUTION TO THE PROBLEM: NATURALISM

God is, like Santa Clause, a myth of childhood, not anything a sane, undeluded adult could literally believe in. That God must be abandoned altogether... There have been those who thought they saw Darwin letting the worst possible cat out of the bag: nihilism... What exactly are the implications of Darwin's idea?¹ – Daniel Dennett

I have yet to see any good reason to suppose that theology is a subject at all... The nineteenth century is the last time when it was possible for an educated person to admit to believing in miracles like the virgin birth without embarrassment.² – Richard Dawkins

All attempts to reconcile faith with science and reason are consigned to failure.³ – Christopher Hitchens

Many philosophers and scientists now reject Descartes' separation of mind and body, spirit and matter, as the concession to Christian piety that it surely was... Most scientists consider themselves *physicalists*; this means, among other things, that they believe that our mental and spiritual lives are wholly dependent upon the workings of our brains. On this account, when the brain dies, the stream of our being must come to an end.⁴ – Sam Harris

Darwinism is the story of humanity's liberation from the delusion that its destiny is controlled by a power higher than itself.⁵ – Phillip E. Johnson

Dualism is less a theory of mind than it is an empty space waiting for a genuine theory of mind to be put in it... The important point about the standard evolutionary story is that the human species and all of its features are the wholly physical outcome of a purely physical process... We are creatures of matter. And we should learn to live with that fact. Arguments like these have moved most (but not all) of the professional community to embrace some form of materialism.⁶ – Paul Churchland

Nearly everybody nowadays wants to be a 'naturalist.'⁷ – David Papineau

There is physics and there is stamp collecting.⁸ – Ernest Rutherford

¹ Daniel Dennett, *Darwin's Dangerous Idea* (New York: Simon & Schuster, 1995), 18.

² Richard Dawkins, *The God Delusion* (New York: Mariner Books, 2008), 80, 187.

³ Christopher Hitchens, *god is not Great*, (New York: Hachette Book Group, 2007), 64-5.

⁴ Sam Harris, *The End of Faith* (New York: W.W. Norton, 2006), 207.

⁵ Dawkins, *The God Delusion*, 27.

⁶ Paul Churchland, *Matter and Consciousness* (Cambridge, MA: MIT Press, 1993), 19, 21.

⁷ David Papineau, *Philosophical Naturalism* (Oxford: Blackwell Publishers, 1993), 1

⁸ Simon Blackburn, *Oxford Dictionary of Philosophy* (Oxford: Oxford University Press, 1994) s.v. 'scientism.'

1. Defining Naturalism

To define metaphysical naturalism by claiming it is the position that “reality is exhausted by nature,” is not very informative.⁹ Whose idea of nature? Thales thought the *arche*, or the principle element of all things, was water; Anaximenes thought it air; Anaximander thought it indeterminate; Democritus thought it was atoms and the void between them; Parmenides, that it was the One; for Pythagoras, number. On one interpretation, Spinoza’s view of nature was pantheism (which, taken literally, entails that naturalism is not equivalent to atheism). For Leibniz nature was comprised of monads. Newton and Descartes saw the natural world as a mechanism, whereas for Berkeley nature was a collection of thoughts in God’s mind. R.G. Collingworth states that, “the word ‘nature’ is on the whole most often used in a collective sense for the sum total or aggregate of natural things.”¹⁰ But once again, who tells us what should be included in the collective aggregate? Are minds, but not souls, included? Are mental contents, beliefs, qualia, moral values, free will, human causal agency, mathematical objects, universals, a substantial self, or the paranormal?

Because science studies ‘nature,’ most people would turn to science to tell us what exists. If this were the case, how many people would say, “Oh, you want to know what exists? It’s what the Standard Model of Physics says exists, the twelve elemental properties, quarks and leptons.” Yet this is what the current physics says exists, but how many people even know what the difference between a top quark and a muon is? In

⁹ Papineau, David, “Naturalism”, *The Stanford Encyclopedia of Philosophy* (Fall 2015 Edition), Edward N. Zalta (ed.), URL = <<http://plato.stanford.edu/archives/fall2015/entries/naturalism/>>.

¹⁰ R.G. Collingwood, *The Idea of Nature* (Oxford: Clarendon Press, 1945), 43.

addition, this leaves the content of the term ‘naturalism’ open, dependent upon the current scientific understanding of the day, which changes on a frequent basis. It also implies a unified acceptance by science of what it studies and the methods of how it studies it, which is not necessarily the case. But the biggest problem is that it appears circular. Metaphysical naturalism is informed by methodological naturalism to tell it what exists, but methodological naturalism, as an *a priori* rule, only considers ‘natural’ phenomena. It also assumes a type of scientific realism, as opposed to instrumentalism, in that the concepts and particles assumed by scientific theories are supposed to denote entities that actually exist.

The *Oxford English Dictionary* gives the following definition of philosophical naturalism: “A view of the world, and of man’s relation to it, in which only the operation of natural (as opposed to supernatural or spiritual) laws and forces is admitted or assumed.”¹¹ This is the only definition that the *OED* gives for philosophical naturalism. What is interesting is that it seems to contain a negative definition. Naturalism is opposed to supernaturalism. It is stated that about the time that Darwin published *The Origin of Species*, philosophy experienced what is called ‘The turn from Idealism.’ In other words, philosophers turned away from the Mind-first view of reality, away from the supernaturalism of traditional theism. But if they turned away from this worldview, what did they turn toward? Some idealists are not supernaturalists (e.g., Schopenhauer, Left Hegelian Marxists). The *OED*, in defining naturalism as a turn away from supernaturalism, lacks specificity over just what is positively asserted by this, other than vague ‘natural laws and forces.’ If naturalism is the absence of supernaturalism, what is

¹¹ *Oxford English Dictionary* (Oxford: Oxford University Press, 2012), s.v. ‘naturalism.’

supernaturalism? The absence of naturalism? What is health? The absence of disease. What is disease? The absence of health. While naturalism can be defined as a negative position, as the rejection of supernaturalism, be it theism, or the assertion of Platonic forms, or transcendent moral values, defining something by its antonym does not really tell us what it is. We need a more substantive definition than this.

The Merriam-Webster dictionary offers a bit more guidance. It defines ‘naturalism’ as “a theory denying that an event or object has any supernatural significance; specifically: the doctrine that scientific laws are adequate to account for all phenomena.” The key term here is ‘adequate.’ This simply means that theoretically a natural explanation can be given for any entity or event, in an ‘adequate’ way, i.e., in a way that is epistemically satisfactory. However, this does not mean that every entity or event does not have a supernatural origin; it only means that natural explanations are ‘adequate’ enough to give an account of them. In addition to opposition to supernaturalism, Richard Dawkins, in *The God Delusion*, goes a step further than naturalism as ‘adequacy.’ He claims that any event or object seen to be supernatural, rather than natural, is ‘invented,’ i.e., fictional. He states, “I decry supernaturalism in all its forms...I am attacking God, all gods, anything and everything supernatural, wherever and whenever they have been or will be invented.”¹²

David Papineau sees supernaturalism as a form of dualism (natural/supernatural), and rejects dualism in all its forms in favor of naturalism. If this is the case, it seems that if naturalism is true, supernaturalism is false. What then is supernaturalism? Rem Edwards lists what he considers to be the family traits of supernaturalism:

1. Nature is not the only thing that exists

¹² Dawkins, *The God Delusion*, 57.

2. The supernaturalist is not an immanentist; nature is nonpersonal, but it may express the will and purposes of a being beyond nature
3. Nature is contingent and created
4. Some natural events have supernatural causes
5. There are other avenues of truth besides the scientific method, be it reason, faith, or revelation
6. The humanistic philosophy of man and ethics are inadequate¹³

So if naturalism is the contrary or opposite of supernaturalism, i.e., if asserting naturalism is equivalent to denying supernaturalism, then one can *prima facie* say that a naturalist rejects all of the above propositions. This would define naturalism as saying: nature is all that exists; nature is nonpersonal and expresses no will or purpose of a being beyond it; that which makes up nature is necessary and eternal; no natural events have supernatural causes; the only reliable path to truth is the scientific method; and the humanistic philosophy of man and ethics is adequate. These propositions also just happen to be the family traits that Edwards lists for his definition of naturalism.¹⁴ This definition is a substantial improvement over the *OED*'s. However, Edwards states each of these propositions are only traits of supernaturalism based upon a family resemblance. In other words, a supernaturalist might not agree to all of them. But which ones are necessary, and which are not? This is not apparent. But it is important to determine, because if naturalism is defined in relation to supernaturalism, if some of these traits are left out, it will change the definition of naturalism as well.

Let us now consider another definition of naturalism that goes beyond the basic one offered by the *OED*. The *Oxford Companion to Philosophy* defines naturalism in the following way:

In general the view that everything is natural, i.e., that everything there is belongs to the world of nature, and so can be studied by the methods

¹³ Rem B. Edwards, *Reason and Religion* (New York: Harcourt Brace Janovich, Inc., 1972), 167.

¹⁴ *Ibid.*, 138.

appropriate for studying that world, and the apparent exceptions can be somehow explained away...The more general application is to philosophy as a whole, and again involves both the objects studied and the methods used in studying them, i.e., both metaphysics and epistemology. In metaphysics naturalism is perhaps most obviously akin to materialism, but it does not have to be materialistic. What it insists on is that the world of nature should form a single sphere without incursion from outside by souls or spirits, divine or human, and without having to accommodate strange entities like non-natural values or substantive abstract universals. But it need not reject the phenomena of consciousness, nor even identify them somehow with material phenomena.¹⁵

This definition includes, but goes beyond, the *OED*'s anti-supernaturalism. It implies that in its philosophical form, naturalism is akin to scientism, i.e., the view that philosophy should adopt the metaphysics and methodology of the natural sciences. This definition clarifies what is meant by Webster's use of the term 'adequacy,' that "apparent exceptions can be somehow explained away." This definition also distinguishes between metaphysical naturalism and epistemological naturalism as a method. The former defines the objects to be studied and the latter describes the methods used to study them. However, one should notice that we have a 'tail-wagging-the-dog' problem. Is metaphysical naturalism arrived at using methodological naturalism? If so, then isn't this the obvious conclusion? If one's method allows for only natural entities and events to be considered, then only natural causes will be allowed and its metaphysic will thereby be naturalistic? If only the operation of natural (as opposed to supernatural or spiritual) laws and forces is admitted or assumed from the outset, how is it possible to substantiate the fundamental claim of metaphysical naturalism, that all that exists is nature, in a non-circular way? If it cannot, then metaphysical naturalism is just a dogmatic assumption. Similarly, on what basis does one appeal in order to stipulate that the rules governing

¹⁵ Alan Lacey, in *Oxford Companion to Philosophy*, ed. by Ted Honderich (New York: Oxford University Press, 1995), s.v. 'naturalism.'

methodological naturalism should rule out supernatural explanations – on the basis of metaphysical naturalism? This too is circular.

Lacking proper justification for either position, each runs the risk of simply being dogmatic. Without good epistemic grounds for either, why should one favor metaphysical naturalism as the most likely ontology, or view methodological naturalism as the privileged epistemology? In case one is not familiar with the debate, “the naturalist claims to have epistemic, explanatory, and methodological superiority on his or her side.”¹⁶ But on what grounds do they claim this epistemic superiority? The only non-circular way that naturalism can justify itself, is by appeal to either induction or the overall coherence of its ‘grand story,’ i.e., its ‘adequacy,’ its ability to ‘explain away’ or supposedly account for all the phenomena said to exist. Yet there are many phenomena which critics claim naturalism fails to account for. In other words, there are critics who find the ‘grand story’ or narrative of theism a better overall explanation for many recalcitrant phenomena that naturalism fails to ‘explain away’ in an empirically adequate way. These will be considered later.

2. Types of Naturalism

A distinction stated in the *Oxford Companion* definition is that metaphysical naturalism is closely related to materialism, although not necessarily. The position that all that exists is matter is called ‘physicalism,’ which as a species of naturalism. It is also called strict naturalism or reductive naturalism. Physicalism is “the thesis that all natural

¹⁶ William Lane Craig and J.P. Moreland, *Naturalism, A Critical Analysis*, ed. by William Lane Craig and J.P. Moreland (New York: Routledge, 2002), xii.

phenomena are...physical,” that all that exists is the physical world. As such, the natural sciences, physics in particular, is given a privileged epistemic authority for investigating reality. The only things that exist are those that physics tell us exist. Strict naturalists are also committed to the causal closure of the universe, and only allow for physical causes of events. As a result, strict naturalism is reductionistic. All natural beliefs that we have about ourselves, including that we act based on values, purposes, and intentions, that consciousness is somehow different from our body, that mental events are somehow different from bodily events, or that there is an enduring self or soul, that we are free to make choices, even that we have beliefs, all of these are false. All mental events and the content that make them up can ultimately be reduced to and found to be identical with brain events. Strict naturalists like Papineau, Dennett, Crick, and Churchland, “insist that all action is determined to occur by non-mental events.”¹⁷ Papineau sees “an externalist approach to epistemology as the essence of naturalism,” in other words, the very content of what is thought or said is dependent in some way upon the external world.¹⁸

Strict naturalists are also adherents of scientism, the belief that the entities posited by science are the only entities that may be considered ontologically real. Any object which is said to exist but be beyond the methods of science to investigate is immediately suspect and disqualified as a possible explanation. Strict naturalists who reject every type of abstract object, such as numbers or Platonic forms, are also termed ‘global naturalists.’ One difficulty that strong, global naturalists, such as Dennett and Churchland, face is how to reduce or explain away mental entities, especially when our everyday experience

¹⁷ Stewart Goetz & Charles Talliaferro, *Naturalism* (Grand Rapids, MI: Wm. B. Eerdmans Publishing Co., 2008), 14-17.

¹⁸ Papineau, *Philosophical Naturalism*, 1.

seems to confirm the existence of beliefs, intentions, and moral values, and rejects the notion that consciousness is causally inert. If they cannot, then they must adopt a weaker form of naturalism, and admit that strict global naturalism is false because it is unable to account for these things.

Not all types of naturalism are this strong in their claims. A weaker form of naturalism, local naturalism, is open to the existence of abstract entities such as sets, numbers, and properties and relations that, while non-spatiotemporal, are nevertheless open to study by science.¹⁹ This type of naturalism is ‘critical’ of strict physicalism and sees it as insufficient and unable to explain many of these phenomena. Critical naturalism is also referred to as ‘emergent naturalism’ in that it allows for supervenient properties to arise or emerge from various complex physical processes with novel properties.²⁰ Supervenient properties are considered to be novel in that they cannot be reduced to the sum of their parts. Though they are still dependent in some way upon their physical base, they are not necessarily identical to them. Hence emergent naturalism is considered non-reductionistic. Examples of non-reductive properties might include moral and aesthetic values, abstract entities such as sets or universal terms, mental properties such as qualia, and free agency. This form of naturalism shows that naturalism is not necessarily synonymous with materialism. Emergent naturalism allows for the emergence of psychophysical properties that are unlike their bases. Some even argue that it opens the door not only for minds to emerge, but maybe even God as well.

¹⁹ J.P. Moreland, ‘The Ontological Status of Properties,’ in *Naturalism, A Critical Analysis*, ed. by William Lane Craig and J.P. Moreland (New York: Routledge, 2002), 78-79.

²⁰ Peter A. Angeles, *Dictionary of Philosophy* (New York: Harper & Row Publ., 1981), s.v. ‘critical naturalism.’

In his book *Science and Religion*, Bertrand Russell spends several pages discussing the emergentist views of Samuel Alexander, which he sees as similar to Bergson's 'creative evolution.' Terrence Deacon, in his book *Incomplete Nature*, states that the 'most prominent' emergentists are Alexander, C.D. Broad, and Conway Lloyd Morgan.²¹ Alexander's 1920 book *Space, Time, and Deity*, was the outcome of the Gifford Lectures he delivered in 1916-18. In it he argues that higher and more complex entities emerge out of matter. From the fundamental stuff of the universe found in space and time, other entities may emerge, like life, consciousness, values (Beauty, Goodness, Truth), freedom, and ultimately deity. Alexander's philosophy may be described as non-reductionist in that he argues that consciousness of an object cannot be reduced to either the object or the consciousness that is contemplating the object. Although the mind does have its basis in neural processes, conscious awareness appears to be more than just an epiphenomenon.²² He also argues for a type of direct realism, and holds that not only primary qualities, but secondary qualities as well, are in things, and that both are known, and "enjoyed," by the mind. To these qualities he adds the emergence of tertiary qualities of value, such as Beauty and Goodness. Like Berkeley, he believes the reality of an object implies a subject to perceive it, the subject here being a conscious being whose awareness seems to be more than just a property of the body. Since we perceive the quality of Beauty in things, Beauty as a value must exist. The next step above mind in "the pattern of growth of things in time," is the emergence of deity, whose properties Alexander seems reluctant to explain, as the complex properties that emerge in higher

²¹ Terrence Deacon, *Incomplete Nature: How Mind Emerged from Matter* (New York: W.W. Norton & Co., 2013), 154-158.

²² Samuel Alexander, *Space, Time, and Deity*, Vol I (New York: Dover Publications, 1966), v, ix, xiii, 15-17.

steps of the process possess properties which cannot be known or predicted with any precision.²³

Alexander's thought could even be interpreted as a type of 'evolutionary theism,' although it is difficult to see his views as compatible with traditional theism. His system is not theistic in the sense that deity is not prior to, nor outside of space and time, but arises from immanent processes within them. Nor is his system pantheistic in that deity emerges from matter and is not a co-aspect of it, as it is in Spinoza.²⁴ Similarly, there are those who interpret the new physics as lending itself to a new type of religion, one that is monistic (but since the scope of this study is limited to traditional theism, we will not concern ourselves with them).²⁵ Russell, however, the confident naturalist, remains skeptical. He states, "Emergent evolutionists, having become persuaded that God did not create the world, are content to say that the world is creating God. But beyond the name, such a God has almost nothing in common with the object of traditional worship."²⁶ Nevertheless, the point pursued here is this: Alexander is important to mention in that he demonstrates that atheism does not necessarily follow from materialism.

Barry Stroud discusses 'open-minded,' or expansive naturalism, because he thinks that there are various phenomena that give strict physicalists problems, such as numbers, the laws of logic, moral values, and normative practices within science. Others call this 'broad' naturalism. Strict naturalists believe we can reduce human consciousness to physical properties without loss. David Chalmers argues that people who want to do away with consciousness, mental content, and semantic understanding, "fail to account

²³ Ibid., Vol II, 349.

²⁴ Ibid., xvii-xix.

²⁵ See Gary Zukov's *The Dancing Wu Li Masters*, or Fritjof Capra's *The Tao of Physics*.

²⁶ Bertrand Russell, *Religion and Science* (Oxford: Oxford University Press, 1997), 215.

for the reality of consciousness.”²⁷ Open-minded, or broad, naturalists are willing to admit such things as subjective experience, a self, free will, and moral values, but still remain within the framework of an overall naturalism, perhaps believing these phenomena will eventually be resolved in a natural way.²⁸ This position seems to allow for recalcitrant properties, such as ethical non-naturalism, or numerical non-naturalism. Thomas Nagel might fit in here, as a non-reductive emergentist, or as one who feels strict naturalism fails to explain certain things. Yet one wonders if this position is consistent. How is it possible to be a naturalist, and claim that there are certain non-natural properties and values (which are also somehow natural, but we cannot really explain how or why they are natural). How this position solves anything, or what it is ‘open’ to, is debatable. The position ignores the fact that non-naturalists use these exact same phenomena as evidence against naturalism.

Personal or subjective naturalism is a type of naturalism that may be based upon Bayesian probability and thus sees naturalism as a personal belief, but not as one that can be determined to hold objectively. It is non-evangelistic in that it does not try to impose this view on others, in the way that Imperialist naturalists do. This would be the quiet, tamed form of naturalism that still retains some humility about the human capability to establish grand metaphysical generalizations. As a result, it does not seek to proselytize and convert others to this view. These types of naturalists merely hold naturalism to be the way that they see the world hanging together, but this view remains their personal outlook and they don’t think everyone should see the world in the same way. They might

²⁷ David Chalmers, as quoted by Kelly James Clark in ‘Naturalism and its Discontents,’ in *The Blackwell Companion to Naturalism*, ed. by Kelly James Clark (Malden, MA: Wiley Blackwell, 2016), 5.

²⁸ Barry Stroud, ‘The Charm of Naturalism,’ in *Naturalism in Question*, ed. by Mario De Caro and David Macarthur (Cambridge, MA: Harvard University Press, 2004), 33-34.

even be open to theism as a possibility because they recognize different people have different experiences. Personal naturalism would probably coincide with open-minded naturalism in that it recognizes that there is always more to learn, that finite individuals with a finite number of experiences are never in possession of certain knowledge. They recognize the truth to Hamlet saying, “There are more things in heaven and earth, Horatio, than are dreamt of in your philosophy.”²⁹

Imperialist naturalists on the other hand claim to *know* that naturalism is true. In other words, they not only believe naturalism is true, but they go beyond this just being a personal belief that can be measured in Bayesian probability, to making the claim that naturalism is objectively true and has been proven through science. This is the claim that Jaegwon Kim makes in saying that a commitment to naturalism, especially physicalism, “is imperialistic” because it demands “full coverage.”³⁰ This characterization sounds like scientism, which states that only science is a reliable method for achieving truth. But how can an imperialist naturalist know that metaphysical naturalism is true, other than by using the methods of science? He can’t. John Haught notes the problem: “Scientism tells us to take nothing on faith, and yet it takes faith to make a commitment to scientism.”³¹ He claims that this type of naturalist conflates scientism with science, confusing the methods of science with the metaphysical stance that all that exists is the natural world. A scientist may be open to theism and other methods beyond the scientific method. So science is not the same as scientism, unless you are an Imperialist naturalist. Imperialist naturalists usually make some claim to the effect that science disproves

²⁹ Hamlet, 1.5.167-8

³⁰ William Lane Craig and J.P. Moreland, eds, *Naturalism: A Critical Analysis*, (New York: Routledge, 2000), xi.

³¹ John Haught, *Faith and Science* (Mahwah, NJ: Paulist Press, 2012), 15.

theism and proves naturalism *objectively*, and that science can somehow determine this. This claim exceeds the more modest claim that it is merely a personal belief that metaphysical naturalism is true. An imperialist naturalist is not content to hold that naturalism is his/her own personal vision of how things hang together; he/she claims that everyone *should* be a naturalist because this in fact has been demonstrated by science to be the way things hang together. Whether this claim to knowledge exceeds the limits of science will be the subject of Chapters 5 and 7.

Numbered among the imperialist naturalists are the New Atheists, such as Dennett, Dawkins, Harris, and Hitchens. They are the evangelists of Strict Naturalism and proclaim the Gospel of Scientism. They are the ‘in your face’ proselytizers, the Jehovah’s Witnesses of Naturalism, who knock on your door and leave pamphlets in your mailbox, urging you to convert to the Gospel of Atheism. In the *God Delusion*, Dawkins states, “If this book works as I intend, religious readers who open it will be atheists when they put it down.” The New Atheists are to atheism what the fundamentalists are to theism. They have very firm convictions that they are in possession of the truth, and are therefore intolerant of anyone who disagrees with them. They adhere to a strict reductionist interpretation of all religious phenomena, and claim that religion is evil and call for it to be stamped out. All write books aimed at the general public. So vocal and discourteous are they in voicing their opinion, that some have claimed, “the new atheists give atheism a bad name.”³² The following are a list of their core beliefs:

1. Theistic Belief is not rational, nor justifiable.
2. Naturalism, usually strict naturalism, i.e., physicalism, is true.
3. Others should convert from theism to naturalism.
4. The public, not merely their scientific or philosophical peers, need to be convinced.

³² Amarnath Amarasingam, in the Preface to, *Religion and the New Atheism: A Critical Appraisal*, ed. by Amarnath Amarasingam (Leiden: Brill, 2010), xiii-xv.

5. Convinced that atheism is known to be true and/or certain.
6. Intolerance for those who disagree with the above.
7. Religious phenomena can be explained naturalistically.
8. Religion is evil, a public nuisance to be eradicated.
9. Science is the only reliable method of obtaining truth about reality.
10. Evolution is a strictly natural process.

What is dramatically ‘new’ about the naturalism of the new atheists? What do the new atheists add to atheism that somehow differentiates them in a major way from the ‘old’ atheists? It is the last condition mentioned above, that of evolution. The claim has been made that the new atheism isn’t really new, that “everything that is said by the likes of Dawkins, Harris, Hitchens, and Dennett had already been said, and said better, by Russell, Paine, Feuerbach, Marx, Freud, Nietzsche, and others.”³³ However, this isn’t quite true. These new atheists claim that science, particularly evolution, is on their side. Dawkins illustrates this point in the following passage from *The Blind Watchmaker*:

I could not imagine being an atheist at any time before 1859, when Darwin’s *Origin of Species* was published...Hume did not offer any alternative explanation for apparent design, but left the question open...although atheism might have been logically tenable before Darwin, Darwin made it possible to be an intellectually fulfilled atheist.³⁴

3. Examples of Naturalists

3.1 Nietzsche’s ‘Promiscuous Naturalism’

Nietzsche deserves to be classified as a naturalist on the sole basis of his pronounced anti-supernaturalism. One could argue that he is the trendsetter in the movement towards naturalism, for he was not afraid to proclaim publically the death of

³³ Ibid., 2.

³⁴ Richard Dawkins, *The Blind Watchmaker*, (New York: W.W. Norton & Co., 1986), 5-6.

God. The question now is, did Darwin provide the ammunition? Nietzsche proclaimed God's demise in *Thus Spoke Zarathustra*, which was published in 1883, twenty-four years after Darwin published the *Origin of Species*, and twelve years after *The Descent of Man*. Is there a causal connection? Does Nietzsche use Darwin to justify naturalism? The tentative answer is no, but Darwin's theory does add to the growth of secularism and the public mood that Nietzsche bears witness to taking over Europe. Nietzsche makes several references to Darwin throughout his books, but his passionate anti-theism is a departure from Darwin's reluctant skepticism.

In the second chapter of his 1888 book, *Twilight of the Idols*, Nietzsche discusses 'the Problem of Socrates.' Nietzsche casts his form of naturalism as an affirmation of this world, in opposition to those, such as Socrates, whose supernaturalism judges that this life is "no good."³⁵ He argues that the key to understanding Socrates's negative attitude towards life is the person of Socrates himself. Socrates was ugly and "the anthropologists amongst the criminologists tell us that the typical criminal is ugly."³⁶ Socrates was a plebe, a member of the working class, and members of the working class have always been jealous of nobility. Nietzsche claims that Socrates developed his dialectical method out of "plebian *ressentiment*," as a way to avenge himself against the aristocracy who kept him down. Previously, Nietzsche claims, arguing was frowned upon by good society. Socrates' constant arguing was considered bad manners, hence his being charged with corrupting the youth. But by claiming the ability to reason well is the highest good to man, he has turned the tables on the aristocracy. It is now the

³⁵ Friedrich Nietzsche, *Twilight of the Idols, or, How One Philosophizes with a Hammer*, in *The Portable Nietzsche*, ed. and trans. by Walter Kaufmann (New York: Penguin Books, 1983), 473.

³⁶ *Ibid.*, 474-5.

philosopher who should govern, not the aristocracy. Nietzsche states that “Socrates was a buffoon who got himself taken seriously.”³⁷ He chose to die because he knew he was sick. Athens was forced to condemn him.³⁸ Socrates’ criminal “decadence” is obvious by his attributing his “auditory hallucinations” to a guardian angel, or ‘daemon.’³⁹

Why doesn’t Nietzsche like Socrates? Why the unusual ad hominem against the father of philosophy? Nietzsche considers Socrates as the source of the ‘great lie’ that this world is merely illusory, and that a higher reality lays behind it. Nietzsche is afraid that belief in an afterlife devalues this life. In *The Gay Science*, he states, “The Christian resolve to find the world ugly and bad has made the world ugly and bad.”⁴⁰ Plato’s Allegory of the Cave similarly argues that this world is only the apparent world, and the realm of the Forms that transcends it, is the true world. Nietzsche sees himself as the ‘cure’ to Socrates. He declares this world is the only world. Against Socrates, Nietzsche proposes four theses:

1. Any reality other than this one (the apparent world) is not demonstrable.
2. The ‘true world’ has been constructed out of opposition to this one.
3. To say there is another, better world is to invent fables.
4. There is no distinction between a ‘true’ and ‘apparent’ world; to say so is a ‘suggestion of decadence.’⁴¹

The question now is, did Darwinism influence Nietzsche’s famous proclamation in *Thus Spoke Zarathustra* that God is dead? Does Nietzsche cite Darwin and evolution as the cause of Europe’s declining faith? Several passages in his writings appear to

³⁷ Ibid., 476.

³⁸ Ibid., 479.

³⁹ Ibid., 475.

⁴⁰ Friedrich Nietzsche, *The Gay Science*, trans by Walter Kaufmann (New York: Vintage Books, 1974), 185.

⁴¹ Nietzsche, *Twilight of the Idols*, 484.

generate that view. He states in *The AntiChrist*, “We have learned differently. We have become more modest in every way. We no longer derive man from ‘the spirit,’ or ‘the deity’; we have placed him back among the animals. We consider him the stronger animal because he is the most cunning: his spirituality is a consequence of this.”⁴² This passage clearly states that Nietzsche accepted the evolutionist claim that humans were animals who had evolved from lower life forms, not the product of divine creation. Consciousness is a product of natural processes, not a qualitative difference between humans and animals based upon human claims to possession of a soul. He makes a similar claim in *The Gay Science* when he states, “When will we complete our deification of nature? When may we begin to ‘naturalize’ humanity in terms of a pure, newly discovered newly redeemed Nature?”⁴³

Rudiger Safranski sees Nietzsche as simply imbibing the spirit of his day as the natural sciences and evolution were making significant advances.

Instead of looking up to the divine, man was gazing down to the animal kingdom. The ape had replaced God as an object of inquiry. God had lost his jurisdiction over nature as well as over society, history, and the individual. In the second half of the nineteenth century, society and history were also viewed as something that could be understood and explained on their own terms. Any theological hypothesis had become superfluous.⁴⁴

Nietzsche saw his philosophy as working out the implications of a naturalist worldview. Given naturalism, what follows? How does one overcome nihilism? From the quotation at the beginning of this chapter, Daniel Dennett voices the opinion that “there have been those who thought they saw Darwin letting the worst possible cat out of

⁴² Friedrich Nietzsche, *The Portable Nietzsche*, op. cit., *The Antichrist*, 580.

⁴³ Nietzsche, *The Gay Science*, 169.

⁴⁴ Rudiger Safranski, *Nietzsche, A Philosophical Biography*, trans. by Shelley Frisch (New York: W.W. Norton & Co., 2003), 307.

the bag: nihilism.”⁴⁵ Nietzsche foresees the possibility that nihilism might result from a naturalist metaphysic, and so Zarathustra is quick to follow up the announcement of the death of God with the proclamation of the Overman, or the creative genius or artist who gives style to oneself. Life is now seen as something to be enjoyed, not denigrated. The question now arises: Does Nietzsche consider the Overman to be the next level in the evolution of human beings? Is Nietzsche giving support to the Nazi eugenics program and urging on the development of a higher, master race? The answer is, no. At this time Darwinism had no explanation for heredity. Nietzsche therefore argues “that ‘heredity,’ as something quite unexplained, cannot be employed as an explanation.”⁴⁶ In the 1880’s natural selection was just one of several plausible scientific theories, but there was no consensus that natural selection of favored variations was the primary means by which organisms evolved. The importance of Nietzsche’s Overman is aesthetic, because he advances human culture. The overman was the artistic genius, the Beethoven, the Goethe, the Wagner.⁴⁷ Nietzsche knew nothing of genes. It is a mistake to think that his view of the Overman as an artist supported the Nazi vision of the ‘blonde beast.’ With the later development of genetics, some racist German evolutionists might have corrupted Nietzsche’s philosophy so as to imply this, but Nietzsche’s talk of a ‘higher’ being was directed at individuals who are aesthetically superior, not based on biology or race. Nor were his remarks a reflection of a Hegelian notion of collective, or national advancement.

Man as a species is not progressing. Higher types are indeed attained,
but they do not last...Among men, the higher types, the lucky strokes of

⁴⁵ Dennett, *Darwin’s Dangerous Idea*, 18.

⁴⁶ Friedrich Nietzsche, *The Will to Power*, trans by Walter Kaufmann and R.J. Hollingdale (New York: Random House, 1967), 343.

⁴⁷ According to tradition, Beethoven wrote a letter to Prince Lichnowsky saying “*Prince, what you are, you are by accident of birth; what I am, I am through my own efforts. There have been thousands of princes and will be thousands more; there is only one Beethoven!*”

evolution, perish most easily as fortunes change. They are exposed to every kind of decadence...The brief spell of beauty, of genius, of Caesar, is *sui generis*: such things are not inherited.⁴⁸

In addition, there are several passages in *The Will to Power* under the heading ‘Anti-Darwinism.’ Nietzsche rejected Darwin’s vision, as transmitted by German evolutionists, as too weak. The ‘struggle for existence’ is merely preliminary to Nietzsche; what mattered is not just to exist and survive, but to triumph. The herd exists, but the overman flourishes. Darwin’s dictum of the struggle of existence, the struggle to survive, became, under Nietzsche, not only the struggle for power, but the “will to overpower.”⁴⁹ Darwin placed too much emphasis on “the influence of external circumstances,” and overlooked the internal forces of will, “the tremendous shaping, form-creating force working from within which utilizes and exploits external circumstances.”⁵⁰ In addition, German Darwinists still adhered to teleology, which Nietzsche did not. Last, Nietzsche’s form of naturalism lacks one of the central characteristics that define naturalism, that of scientism. Nietzsche did not endorse or give backing to the scientific interpretation of nature. Instead, he saw it as simply one of many ways to organize the world, but by no means as being the only way or the normatively preferred way.

For these reasons, Nietzsche, while espousing metaphysical naturalism, eschews the methodologies of the sciences, as well as the reductionism of physicalism. His metaphysic of the will to power, as formulated in his writings, eludes the confirmatory expectations of science. He sees the artistic, and the scientific, and the religious, and the

⁴⁸ Nietzsche, *The Will to Power*, 363.

⁴⁹ Safranski, *Nietzsche, A Philosophical Biography*, 266, 282.

⁵⁰ Nietzsche, *The Will to Power*, 344.

moral view of the world all as symptoms of a single ‘ruling drive,’ viz., the will to power.⁵¹ Science, he claims, denies that this will is exercised.⁵² In addition, his aesthetic values appear to elude reduction, as well as his normative claim that the values of master morality should not be overtaken by the ‘decadence’ of slave morality. His discussion of ‘higher types’ of human beings also eludes scientific classification. For this reason, Christian Emden states that Nietzsche’s naturalism is ‘promiscuous,’ following John Dupre’s coinage of the term. Dupre uses the term to denote a type of ontological pluralism that eludes the classification of the traditional sciences and, as a result, precipitates what he calls ‘metaphysical disorder’ (as it departs from the ‘order’ of classification as determined by methodological naturalism).⁵³ In other words, Nietzsche wants to adhere to a type of metaphysical naturalism, but not one that replaces supernaturalism with a metaphysics governed by the methods of scientific rationality. Emden therefore classifies Nietzsche’s metaphysics as ‘promiscuous’ in the following way:

Nietzsche, on this view, seems to adopt something akin to what John Dupre has termed ‘promiscuous realism’: ‘there are countless legitimate, objectively grounded ways of classifying objects in the world,’ which ‘often cross-classify one another in indefinitely complex ways.’ Such an understanding of realism stands in the background of Nietzsche’s philosophical naturalism; taking philosophical naturalism seriously means to renounce the much-cherished idea of a unity of science.⁵⁴

3.2 Dennett: the ‘Evangelist of Unbelief’

⁵¹ Ibid., 356, 358-9.

⁵² Ibid., 352.

⁵³ John Dupre, *The Disorder of Things, Metaphysical Foundations of the Disunity of Science* (Cambridge, MA: Harvard University Press, 1993), 17-19.

⁵⁴ Christian J. Emden, *Nietzsche’s Naturalism* (Cambridge: Cambridge University Press, 2014), 65, 71.

The title of Daniel Dennett's book on religion, *Breaking the Spell*, insinuates that anyone who believes in religion is 'under a spell' that needs to be broken. He begins with the assumption that religion is a natural phenomenon. What is immediately strange about this is the assumption Dennett makes that religion is a 'natural phenomenon,' i.e., solely a human phenomenon having no supernatural origin at all.⁵⁵ Since Darwin showed that humans are a product of the natural environment, Dennett argues human traits and characteristics can all be analyzed using the methods of the natural sciences. Thus religion can be placed under the microscope of science and be evaluated through the lens of evolution. Dennett states, "Can't we just accept the obvious fact that religion is a human phenomenon and that humans are mammals, and hence products of evolution, and then leave the biological underpinnings of religion at that?"⁵⁶ This is a claim that any self-respecting theist would immediately reject. The reason religion exists (according to the religious realist) is due to the fact that there is a God who created the universe and us and calls us into relationship with God. A theist realist would immediately counter by stating that religion is of supernatural, rather than natural, origin. The claim that the Christian church is of supernatural origin is a historical one, linked to (1) a divine being becoming incarnate in this world, and (2) the actions of the Holy Spirit calling people to witness to this act. Many Christians thus would argue the church itself is of supernatural origin.

⁵⁵ Daniel Dennett, *Breaking the Spell: Religion as a Natural Phenomenon* (New York: Viking Penguin, 2006), 25.

⁵⁶ *Ibid.*, 70-71.

This is an important point. If the events that religion records and celebrates are supernatural, then religion escapes scientific study. If they are merely natural events, then they may well fall under scientific study. If they are supernatural, then Dennett's claim that religion should be held to the same standard of epistemic justification as science, is not valid. Dennett's argument is valid only if religion is a strictly natural phenomenon. Nevertheless, let us consider Dennett's argument. Dennett assumes that religion can be studied as a natural phenomenon, and can therefore be evaluated by evolutionary theory. If something exists, it must provide some kind of evolutionary benefit or else it would have been swept away. So the question is, given that Dennett thinks religion is a 'pointless accident,' how come evolution hasn't swept it away? He states that religion "is a hugely costly endeavor, and evolutionary biology shows that nothing so costly just happens. Any such regular expenditure of time and energy has to be balanced by something of 'value' obtained."⁵⁷ So the question then becomes, if religion exists because it is of value in evolutionary terms, in that it increases one's fitness in differential reproduction by helping one outcompete others for replicating their genes, what is this value? Dennett attempts to solve the problem in the way that a detective or lawyer might try to solve a crime, by asking *cui bono*, 'who benefits,' and in what way, from being religious? How is religion of value in giving one a reproductive edge over others? "What pays for religion?"⁵⁸

Again, Dennett sees religion's benefit not in supernatural terms but in natural ones. Dennett is oblivious to the supernatural reasons one might be religious because they simply don't show up in his worldview. Instead, one is religious because religion

⁵⁷ Ibid., 69.

⁵⁸ Ibid., 62, 70.

benefits one in several ways. It benefits people psychologically in that it makes them feel good. Also, divination helps solve problems. Before there was modern medicine, there was shamanic healing, whose hypnotic rituals may have had psychosomatic benefits.⁵⁹ But the best reason to be religious is that it provide places to meet potential mates, or what Dennett refers to as “*leks* – the mating meeting places sometimes called ‘nature’s nightclubs’ – where males (usually of avian species) gather to “strut their stuff” by putting on competitive performances to impress local females.⁶⁰ This all has a very Freudian pansexuality or Schopenhaurian pessimism about it. People don’t go to church to worship God or in response to an encounter with a divine reality; they go in hope of finding sex partners.

It is possible for Dennett to believe this because he himself lacks the understanding to see that people go to church to worship God. But God does not exist for Dennett – that is his starting point. Religion does not exist for supernatural reasons, because God exists and calls human into communion with God. Religion is not a response to a divine being ‘out there.’ Religion has its roots in primitive human practices. It began as folk religion, “the sorts of religion that have no written creeds, no theologians, no hierarchy of officials,” and consists of “stories about gods or supernatural ancestors, prohibited and obligatory practices.”⁶¹ It began with a misplaced ‘intentional stance,’ with humans attributing intentional states to objects and forces of nature.⁶² All primitive religions are based on animism, on seeing the world of nature as essentially

⁵⁹ Ibid., 136-7.

⁶⁰ Ibid., 158.

⁶¹ Ibid., 140.

⁶² Ibid., 116.

peopled with spirits and beings. Organized religion is merely the formalized institutionalization of this process.

One might wonder how cultural behaviors fall within the domain of natural selection, a theory that supposedly influences the replication of genes, not beliefs. Dennett, following Dawkins, believes that religion is memetic. He argues that evolution occurs whenever the following conditions are met: replication, variation (mutation), and differential fitness (competition).⁶³ Just as genes replicate and those that are fit get passed on, so do memes, Dawkins' term for units of cultural information which can be replicated and passed on.⁶⁴ Ideas, like genes, face stiff competition. Only the fittest memes survive and spread. A good example of a fit meme is an internet video that goes viral and is 'replicated' by more people watching it, which helps to foster its future survival in the public's consciousness. Dennett begins *Breaking the Spell* with an epigraph from Hugh Pyper that states "If 'survival of the fittest' has any validity as a slogan, then the Bible seems a fair candidate for the accolade of the fittest of texts."⁶⁵ In other words, the Bible is an example of a fit meme, because it has successfully been replicated as a cultural unit of transmission, and has been passed on and spread over the entire planet, lasting for thousands of years.

The central claim of Dennett's 1996 book, *Darwin's Dangerous Idea*, is that evolution is 'mindless,' i.e., unguided, and strictly the result of natural processes. Prior to Darwin, a "Mind-first" view of the universe reigned. This is basically the same as saying that the primary stuff of reality is God, who is a spiritual being, and that the material

⁶³ Ibid., 341.

⁶⁴ Ibid., 78.

⁶⁵ Ibid., 3.

universe is secondary to God, who created the universe. Dennett claims that natural selection shows how a mindless, purposeless, process can give rise to complex organisms who no longer need a divine designer to account for their being.⁶⁶ “Darwin’s dangerous idea...[is that] something as mindless and mechanical as an algorithm could produce...an antelope, the wing of the eagle, [an] orchid.”⁶⁷ If there exists such things as minds, they are a secondary effect that has emerged through natural processes as an adaptive trait. Dennett calls this, ‘Darwin’s inversion.’ Darwin has inverted the mind first, matter second order of the universe, into matter first, mind second. Dennett also rejects the argument that God is the ‘First cause,’ because this only invites the question, who created God? “If God created and designed all these wonderful things, who created God? Supergod? And who created Supergod? Superdupergod? Or did God create himself?”⁶⁸

Thus Dennett’s form of naturalism is strict physicalism of the reductionist type. He thinks everybody should be a reductionist in the weak sense of the world, stating that “Darwin’s dangerous idea is reductionism incarnate,” i.e., a universal acid that might well dissolve all that we hold dear, including minds, meanings, and purposes.⁶⁹ This type of reductionism, however, he claims is ‘greedy.’ Dennett does not want reductionism to go so far as to dissolve ‘meaning,’ and his attempt to save humans from Darwinian nihilism takes up most of the rest of *Darwin’s Dangerous Idea*. In this sense, his project is similar to Nietzsche’s. He argues that good reductionism is “simply the commitment to non-question-begging science without any cheating by embracing mysteries or miracles.” Good reductionism does not resort to what he calls ‘skyhooks,’ or hooks that fall

⁶⁶ Dennett, *Darwin’s Dangerous Idea*, 38-39.

⁶⁷ *Ibid.*, 59.

⁶⁸ *Ibid.*, 71.

⁶⁹ *Ibid.*, 82.

miraculously from the heavens to cause physical effects. Skyhooks include creationism, intelligent design, and the type of miracles found in the Bible. Theism believes in an open universe with supernatural causation, with skyhooks. Dennett rejects them, arguing instead not only for a causally closed universe, but one with no supernatural realm beyond it. Thus only cranes, hooks that are entrenched in the earth, i.e., only natural causes for effects, are acceptable.

3.3 Dawkins: Religion is Bad Science

Dawkins' book *The Blind Watchmaker*, examines William Paley's design argument, which states that just as one can infer the existence of a watchmaker based upon the order found in a watch, so one can infer the existence of God based upon the complex order found in an eye. The point of the title is that you can explain life and its complexity without recourse to God. The watchmaker is blind because evolution is a process that is guided not by a conscious agent who has intentions and creates according to a designed plan, but by a blind process of nature. Thus *The Blind Watchmaker* is not only an argument against theism, as it is also an argument for metaphysical naturalism. Dawkins' book was published in 1986. Michael Behe's *Darwin's Black Box* was published in 1996. Stephen Meyer's *Signature in the Cell* was published in 2009. All three books are concerned with biological complexity, which William Paley's design argument addresses. Paley likens the complexity of a watch to the complexity of an eye; just as the order found in a watch warrants the inference that it is a human artifact, and

there was a watchmaker, so the complex eye warrants the inference that there is a divine artificer.

Dawkins anticipated Behe's and Meyer's updated biochemical arguments to an extent, because he had heard them before, but in different form. Francis Hitching's 1982 book called *The Neck of the Giraffe, or Where Darwin Went Wrong*, makes a similar case for a divine designer. Dawkins claims evolution by natural processes is a better explanation than supernatural intervention. Or, if you like, he prefers Dennett's cranes to the theist's skyhooks. He argues that in nature you have bad design. Human eyes have the nerve 'wires' coming out in front of the retinal plates, rather than behind them. "This means that the light...has to pass through a forest of connecting wires....It is the principle of the thing that would offend any tidy-minded engineer."⁷⁰ An intelligent designer would not have designed them like that. He uses this as evidence we were not designed – that an intelligent designer would have done a better job. In *The God Delusion*, he states, "many of our human ailments...result directly from the fact that we now walk upright with a body that was shaped over hundreds of millions of years to walk on all fours."⁷¹ The same principle applies to a halibut's eyes, one of which has slowly been rotated to its side so that it can lie on the ocean floor. An intelligent designer would have just placed them both on top, like a skate's.⁷² This type of complexity is achievable he argues through the accumulation of small, gradual changes, but not all at once. In *Climbing Mount Improbable*, he uses the metaphor of a mountain. "On one side of the mountain is a sheer cliff, impossible to climb, but on the other side is a gentle slope to the

⁷⁰ Dawkins, *The Blind Watchmaker*, 93.

⁷¹ Dawkins, *The God Delusion*, 161.

⁷² Dawkins, *The Blind Watchmaker*, 91-2.

summit...Evolution creeps up the gentle slope to the summit...creationists are blind to all but the daunting precipice at the front.”⁷³

In the preface to the paperback edition of *The God Delusion*, Dawkins states, “I suspect that for many people the main reason they cling to religion is not that it is consoling, but that they have been let down by our educational system...They have simply not been properly taught Darwin’s astounding alternative.”⁷⁴ In this opening statement Dawkins clearly identifies himself as an adherent to the ‘warfare’ or ‘conflict’ model between science and religion. For Dawkins it is clearly science *or* religion, for he sees them as incompatible, and he obviously favors the former, arguing that simple instruction in the fundamentals of evolutionary theory will lead one to reject the latter. Dawkins even rejects any complementarity between them, any possibility of adhering to both science *and* religion. Religion, for Dawkins, is simply bad science, and good science will show that this is so. As a result, Dawkins exudes certainty that science will win the day and prove religion wrong.

Why is this so? Why will science emerge as triumphant? Because it has evidence on its side, whereas religion has none on its side, and the evidence of science is against it. For this reason, Dawkins is an evidentialist. He is unwilling to believe anything without good evidence. On the other hand, “the whole point of religious faith, its strength and chief glory, is that it does not depend on rational justification.”⁷⁵ Given the strong epistemic requirements for a scientific theory to be accepted, he cannot understand “the disproportionate privileging of religion,” which requires none.⁷⁶ He states that as a

⁷³ Dawkins, *The God Delusion*, 147-8.

⁷⁴ *Ibid.*, 22.

⁷⁵ *Ibid.*, 45.

⁷⁶ *Ibid.*, 50.

scientist, he only forms beliefs on the basis of evidence. This is why he believes in evolution, because the evidence supports it. What would change his mind? If evidence appeared tomorrow, such as rabbit fossils appearing in the Precambrian fossil sediment, then he would change his mind. But none has, he claims.⁷⁷ Religious faith, on the other hand, “is an evil precisely because it requires no justification...Christianity, just as much as Islam, teaches children that unquestioned faith is a virtue. You don’t have to make the case for what you believe.”⁷⁸

Why does Dawkins think that all the arguments for God’s existence fail? Is it true that there is no good evidence for religious faith? There must be some evidence for why people are religious today, since people have abandoned Greek and Roman polytheism in favor of monotheism. If there is no evidence as to why one believes in one’s religion, then one religion is no better or no worse than the next. Most people would have no problem providing evidence as to why they are not polytheists. Dawkins on the other hand, sees no evidence for the idea that “there exists a superhuman, supernatural intelligence who deliberately designed and created the universe and everything in it, including us.” This belief “is founded on private revelation rather than evidence.”⁷⁹ This last claim is perplexing. Does he mean that people have faith because they have received a personal revelation from God? If so, wouldn’t this constitute a kind of substantial evidence for one holding religious faith? Isn’t this the type of experience St. Paul had on the road to Damascus? Or does he mean that religious faith is founded on someone else’s personal revelation, such as a person believing in Jesus on the secondhand basis of St.

⁷⁷ Ibid., 319-20, 154.

⁷⁸ Ibid., 346-7.

⁷⁹ Ibid., 52.

Paul's personal experience? Even then, wouldn't this also count as a form of evidence for why one has faith, even if one did not receive the revelation oneself? Either way, "private revelation" would appear to most people to constitute good evidence for belief. If there were no God, then one would expect no revelation of any kind to occur. So the claim that one had received divine revelation, that the person who received the revelation has a trustworthy character, and his/her mental state was not delusional, might constitute sufficient enough evidence for one to form faith.

If there is no God, then why is there religion? To tackle this question, remember, Dawkins' starting point is naturalism. Human beings are the product of natural, evolutionary processes. As a result, if there is such a thing as religion, and humans are its cause, then it too is a phenomenon that is subject to the pressures of natural selection. The question then becomes, what pressures give rise to religion? One would think religious faith, if based on a false belief, would be eliminated based on "Darwinian considerations of economy." And Dawkins states that "religion is so wasteful, so extravagant; and Darwinian selection habitually targets and eliminates waste....If a wild animal habitually performs some useless activity, natural selection will favour rival individuals who devote the time and energy, instead, to surviving and reproducing."⁸⁰ Religion, for it to survive, must therefore provide some type of benefit or 'enhancement' that will aid an individual's survival and further the likelihood that his/her genes will get passed on. Dawkins proposes the traditional reasons: religion is a like a placebo; it helps reduce stress; it offers psychological comfort.⁸¹ An even more reductionist view is that religion is an aberrant activity, "hyperactivity in a particular node of the brain." In fact,

⁸⁰ Ibid., 190-1.

⁸¹ Ibid., 195.

Dawkins notes, “visionary religious experiences are related to temporal lobe epilepsy... a ‘god centre’ in the brain.”⁸²

Ever the reductionist, Dawkins states that he anticipated Helen Fisher’s findings that love is associated with the release of dopamine, norepinephrine, and oxytocin, and suggest that love of God “may be startling reminiscent of [emotional reactions] more ordinarily associated with sexual love.”⁸³ But the natural explanation for the origin of religion he favors most is that religion is based on imprinting, social conditioning by one’s parents. He states that natural selection favors children who have been taught to obey their parents and elders, and who believe whatever they are told by them. “Such trusting obedience is valuable for survival.... On this model we should expect... different arbitrary beliefs, none of which have any factual basis, will be handed down.”⁸⁴ Religion is a holdover of a primitive worldview, socially handed down through the generations, and “once infected, the child will grow up and infect the next generation with the same nonsense... Once entrenched in a culture they persist.”⁸⁵ As a result, religion is ‘invented,’ and can be explained in terms of natural rather than supernatural causes.

3.4 Hitchens: The Case for ‘Antitheism’

The title of Hitchen’s 2007 book, *god is not Great*, is a parody of the Takbir, or the Arabic phrase ‘*Allahuh Akhbar*’ – ‘God is great,’ or, as it is sometimes translated, ‘God is greater,’ or ‘greatest.’ ‘Allah’ is obviously the personal name of God in Islam.

⁸² Ibid., 196-7.

⁸³ Ibid., 215-16.

⁸⁴ Ibid., 205.

⁸⁵ Ibid., 219.

The Takbir is most commonly used in prayer and in the call to prayer. Hitchens' inversion of the Takbir is an example of his contentious, mocking attitude, but is not aimed particularly at Islam, but at all religion. The subtitle of Hitchens' book is 'how religion poisons everything.' This appears to parallel Salman Rushdie's 2002 article, 'Religion, as ever, is the poison in India's blood,' and Hitchens makes several allusions to Rushdie's critique of religion throughout his book. Hitchens basically runs religion through the hedonistic calculus and claims that if you add up all the good that religion does, then subtract all the harm it does, the harm would outweigh the good. Just look at the major cities that start with the letter B, he says: Belfast, Beirut, Bombay, Belgrade, Bethlehem, and Baghdad. He has visited all six and proceeds to list all the "religiously inspired cruelty" that has occurred in them.⁸⁶ Harris does the same thing in *The End of Faith*, thus trying to reinforce the association between religion and violence in the reader's mind.⁸⁷ What conclusion does Hitchens draw from all of this? That all religion, everywhere, is a poison. He points to the sordid history of the Catholic Church and its participation in witch burning, the Crusades, the Inquisition, and anti-Semitism to support his conclusion. However, this is an argument against the violence associated, contingently, with certain theistic beliefs. It is not an argument that supernaturalism is false. Of course, the values he puts on the numbers are biased and inflated because he sees religion as being untrue, and therefore of no positive value.

Hitchens claims to be just a quiet atheist who likes to sit peacefully at home, but is unable to because religious zealots keep intruding into his world and trying to force their irrational beliefs on him. He claims it is religious people who are trying to instill

⁸⁶ Hitchens, *god is not Great*, 18-23.

⁸⁷ Harris, *The End of Faith*, 26.

their beliefs into him, while he just wants to be left alone. He states, “I would be quite content ...to ‘respect’ their belief,” as long as “they in turn leave me alone. But this, religion is incapable of doing. As I write these words, and as you read them, people of faith are in their different ways planning your and my destruction.”⁸⁸ However, this is not really true. He is doing more than just sitting at home, wanting to be left alone. He would not be writing books as an apologist for atheism if he cared only about his own beliefs. He sees atheism as more than just his own personal beliefs, he sees it as objectively true, and wants to stamp out religious belief wherever he can. His approach to religion is not ‘this is my view, take it or leave it,’ but ‘my worldview is objectively correct and unless you see things my way, you’re an idiot.’ For these reasons he could be considered an imperialist naturalist. Like Dennett, his claims go far beyond the subjective, personal opinion that religion is wrong. As an evidentialist, he states, “we distrust anything that contradicts science or outrages reason.”⁸⁹ He then goes on to try to make the case that religion is absurd, irrational, and objectively wrong. Science and rationality can disprove theism and prove atheism. Religion harms or poisons society, and therefore should be done away with. However, it seems Hitchens’ real problem is with senseless violence and humans treating other humans badly, not God. As much as Hitchens would like the reader to believe otherwise, the central message of theism, and of all three monotheistic faiths, is that God is love. God would probably not condone the laundry list of wrongs that Hitchens tries to associate with religion.

Hitchens believes he can reconstruct the origin of much of religion. Religion did not arise in response to a divine being entering into a relationship with humans, because

⁸⁸ Hitchens, *god is not Great*, 12-13.

⁸⁹ *Ibid.*, 5.

there is no divine being. Therefore, if religion exists, it has to have been invented by humans, a charge he repeatedly makes. He argues that the “foundational books” of religion “are transparent fables....it is a man-made imposition,...an enemy of science and inquiry....It has subsisted largely on lies and fears, and been the accomplice of ignorance and guilt as well as slavery, genocide, racism, and tyranny.”⁹⁰ If Moses was the author of the Torah, why does he speak of himself in the third person, as in ‘the Lord spoke unto Moses’?⁹¹ This leads him to conclude, “there was no flight from Egypt, no wandering in the desert, and no dramatic conquest of the Promised Land. It was all, quite simply and very ineptly, made up at a much later date.”⁹² In addition, no good God would command his chosen people to commit genocide on the Canaanites. Hitchens believes that the murder the Jews have done in God’s name, only “helps to make the case for ‘antitheism.’”⁹³

But how can Hitchens be so sure that all of the Western monotheistic tradition, which arose more than 3,000 years ago, is nothing but folk tales? He claims that by looking at the origin of a contemporary religion, one which has arisen in the last two centuries, the Mormon Church, we can gain insight into the origin of all religion. The crucial piece of evidence in understanding Joseph Smith was that he was convicted of “defrauding citizens by organizing mad gold digging expeditions” in March of 1826, in Bainbridge, New York.⁹⁴ This occurred eighteen months before he claimed to have discovered buried golden plates containing the hidden history of the American peoples

⁹⁰ Ibid., 229.

⁹¹ Ibid., 104.

⁹² Ibid., 102.

⁹³ Ibid., 102.

⁹⁴ Ibid., 161-3.

claiming they descended from a tribe of Jews who fled to America in 600BC. That is all the evidence Hitchens needs to convince him that Joseph Smith was one of the greatest con artists of all time, and Abraham, Moses, Mary, Jesus, and Muhammad were no different – all swindlers. All religion is cut of the same cloth: pre-scientific ignorance, superstition, and outright deception. “Religion comes from the period of human prehistory where nobody...had the smallest idea what was going on.”⁹⁵

Christopher Hitchens was a professional journalist, and the fact is evident. He was not trained as a philosopher, or a theologian, or a neuroscientist, or a biologist, and his arguments are fairly shallow compared to those of Dennett, Dawkins, and the Churchlands. His arguments lack any discussion of the philosophical or cognitive science literature, and he attempts to make up for it through the use of witty rhetoric. He is trying to do what the logical positivists did with the verification principle to eviscerate metaphysics – permanently eliminate it – but he doesn’t know this, because he doesn’t know any philosophy. He seems to know little to nothing of the philosophy of mind, such as the problem of intentionality or qualia that concerns Dennett and others. His chapter on design lacks any understanding of biochemistry, understanding that Dawkins, Behe, and Meyer obviously have. It is hard to call him a scientist, or in favor of scientism, as he fails to discuss the nature of science, or its method, or its findings. Hitchens includes writings from Darwin in *The Portable Atheist*, and prefaces them with the claim that Darwin had “slowly abolished his faith.”⁹⁶ While Darwin at the end of his life did indeed have his doubts that Jesus was the Son of God, he unmistakably states that he was not an atheist. In a letter he wrote to John Fordyce in 1879, he states: “In my

⁹⁵ Ibid, 64.

⁹⁶ Christopher Hitchens, ed., *The Portable Atheist* (Philadelphia: De Capo Press, 2007), 93,

most extreme fluctuations I have never been an atheist in the sense of denying the existence of a God. I think that generally (& more and more so as I grow older) but not always, that an agnostic would be the most correct description of my state of mind.”⁹⁷

Hitchens’ knowledge of Darwin is extremely thin. He spends only one paragraph in *god is not Great* discussing Darwin’s vast literary corpus: the 450 pages of *The Voyage of the Beagle*, the 400 pages of the *Origin of Species* (six editions, each with subtle revisions), the 700 pages of *Descent of Man* (originally published in 1871 as two volumes, each 450 pages; he also published a revised version in 1874), the 900 pages of *The Variation of Animals and Plants under Domestication*, the 400 pages of *The Expression of the Emotions in Man and Animals*, the 150 pages of *The Formation of Vegetable Mold through the Action of Worms*, the 200 pages of Darwin’s *Autobiography*, the 24 volumes of *The Correspondence of Charles Darwin* (the last volume alone is 1,000 pages), not to mention Darwin’s work on the formation of coral atolls, barnacles, orchids, insects, plant movement, and four notebooks. Darwin wrote in total 25 books during his lifetime, yet Hitchens mentions none of them. The sole purpose of this paragraph is to make the claim that Darwin’s Christian wife, Emma, influenced him to use the word ‘creation’ in his writings.⁹⁸ Yet even for this he offers no evidence or citation to support it. That is the extent of Hitchens’ scholarly discussion of Darwin.

Hitchens is full of contempt, *ad hominem*, and sarcastic disdain for anyone whose views differ from his own. He calls Augustine “a self-centered fantasist and an earth-centered ignoramus.”⁹⁹ He irreverently retells the stories of the Old Testament,

⁹⁷ Charles Darwin, letter to John Fordyce, May 7, 1879.

⁹⁸ Hitchens, *god is not Great*, 269-270.

⁹⁹ *Ibid.*, 64.

New Testament, and Koran, simply to point out anachronisms and “innumerable contradictions and incoherencies” (does anybody really believe Abraham lived to be 175 years old? Or that the rainbow is a covenant with God?), claiming the texts were written long after the main characters were dead, and are all just fabrications.¹⁰⁰ He states, “the case of the Virgin Birth is the easiest possible proof that humans were involved in the manufacture of a legend.”¹⁰¹ Last, he states “nothing proves the man-made character of religion as obviously as the sick mind that designed hell.”¹⁰² Hitchens reflects the outlook of a well-traveled and well-read intellectual, a modern secularist who finds it easy to scorn the beliefs of ages past and mock them as pre-scientific superstition. His arguments are no more than empty rhetoric; his conclusions are asserted rather than inferred, and if any premises are given, they are usually questionable.

3.5 Harris’s Evidentialism

Sam Harris begins his 2006 book, *Letter to a Christian Nation*, with the statement that “the Bible is either the word of God, or it isn’t.”¹⁰³ What exactly he is trying to say is hard to determine, but he implies that either you interpret the Bible literally, and believe every word in it is spoken by God, or you don’t. In *The End of Faith*, Harris at least recognizes there are other positions, such as those taken by religious moderates who “loosely interpret (or simply ignore) much of their canons” and “retreat from scriptural

¹⁰⁰ Ibid., 132-4.

¹⁰¹ Ibid., 116.

¹⁰² Ibid., 219.

¹⁰³ Sam Harris, *Letter to a Christian Nation* (New York: Alfred A. Knopf, 2006), 3.

literalism.”¹⁰⁴ How to interpret the Bible has been a subject of debate throughout the ages and was one of the reasons for the Reformation. Many today would think of the Bible as being the human record of God’s self-revelation, couched in the worldview of the people who wrote it, but not the revelation itself. This is very different from being a literalist, which implies a belief in the literal truth of Genesis and a Creationist worldview. His next statement is equally puzzling. “Either the Bible is just an ordinary book, written by mortals, or it isn’t.”¹⁰⁵ The Bible is obviously not an ordinary book, as it records the deeds of a people whom it is claimed God entered into covenant with, as well as the story of a man who claimed to be divine. It also provides evidence to support a causally open universe, one in which supernatural agents can enter and interact. It seems the only option Harris can entertain, given his naturalist metaphysic, is to sweep the Bible away as being the product of solely human origin. This is abundantly obvious, given his many anti-theistic remarks. For example, he argues that if the Bible were of divine origin, written by an omniscient being, “why doesn’t the Bible say anything about electricity, or about DNA, or about the actual age and size of the universe?”¹⁰⁶

His next point is that the Koran states that Jesus was not divine. Just as Christians claim the Bible is the Word of God, and that Jesus was divine, Muslims believe that the Koran is the infallible word of God, and that Jesus is not divine. If both of them “are believed to be nothing less than verbatim transcripts of God’s utterances,” then at least one of them must be wrong, but which one?¹⁰⁷ Both, according to Harris. Why? Because both sets of Scripture make ludicrous claims, so neither should be believed.

¹⁰⁴ Harris, *The End of Faith*, 17.

¹⁰⁵ Harris, *Letter to a Christian Nation*, 5.

¹⁰⁶ *Ibid.*, 60-61.

¹⁰⁷ Harris, *The End of Faith*, 34.

Both texts claim that Jesus was born from Mary through a virgin birth. Yet everyone knows virgins don't get pregnant. Apparently the authors of Luke and Matthew didn't know their Hebrew, and translated the Hebrew word for 'young woman' (almah) in Isaiah 7:14 into the Greek word for 'virgin' (Parthenos). "Another strike against the doctrine of the virgin birth is that the other evangelists, Mark and John, seem to know nothing about it," Harris argues.¹⁰⁸ In any case, "the virgin birth of Jesus" is a "preposterous idea."¹⁰⁹

Harris then goes on to cite the Bible's moral prohibitions against adultery, homosexuality, violating the Sabbath, blasphemy, and serving other gods, sins all of which the Bible says are punishable by death.¹¹⁰ Again, Harris claims, either you believe this is what God commands or you don't. Since no one wants to advocate stoning someone to death, the obvious conclusion is that the Bible isn't the word of God, and that misguided mortals with a warped sense of morality were its real authors. Yet when is the last time you heard of Christians stoning someone to death for committing adultery, or committing sodomy, or taking the Lord's name in vain? Harris focuses on a few passages from Deuteronomy and Leviticus and says that a person must accept the entire Bible, including these passages, or else reject the whole Bible as being God's word.¹¹¹ Of course he doesn't focus on the passages many consider to be the central message of the Bible, such as 1 Corinthians 13, which places love as the highest virtue. When asked to sum up the law and prophets, Jesus says to love God with all your heart and all your

¹⁰⁸ Ibid., 94-5.

¹⁰⁹ Harris, *Letter to a Christian Nation*, 43. Dawkins also makes this point in *The God Delusion*, 122.

¹¹⁰ Harris, *Letter to a Christian Nation*, 8-9. Also, *The End of Faith*, 155.

¹¹¹ Dawkins makes a similar point: "If we reject Deuteronomy and Leviticus (as all enlightened moderns do), by what criteria do we then decide which of religion's moral values to accept?" *The God Delusion*, 81.

soul and all your mind and your neighbor as yourself. (Mt. 22:37-39) Jesus says in Mark 9:35, “anyone who wants to be first must be the very last, and the servant of all,” for it is the nature of love to serve others selflessly. Jesus is simply quoting passages from the Old Testament here. People of faith are called by God into service, to love. This is the ideal. Granted religious people often fall short of this ideal, but they are the ones who should be condemned, not the religion.

Nietzsche states in *The Antichrist* “in truth, there was only one Christian, and he died on the cross.”¹¹² Even Nietzsche seems to admit that the only person who ever lived a truly Christian lifestyle, one rooted entirely in sacrificial love for God and others, was Jesus. Gandhi similarly said, “I love Christ. It’s just that so many of you Christians are so unlike Christ. If Christians would really live according to the teachings of Christ, as found in the Bible, all of India would be Christian today.”¹¹³ The only religion that doesn’t have an ethic that offends Harris’s sensibilities is the Jain doctrine of *ahimsa*, or non-violence. Harris fails to mention that Jesus commanded one to resist evil by non-violently turning the other cheek. Mennonites have made non-violence one of the centerpieces of their tradition, although it is difficult to see how far non-violence would go when dealing with a Hitler or a Stalin. For this reason Augustine and Aquinas developed just war theory. But if the central message of the Bible is love, who really could object to the call that people act in a more loving way?

Harris, on the other hand, goes out of his way to find obscure passages from the Bible, so that he can twist the message of the Bible into something else. For instance, he

¹¹² Friedrich Nietzsche, *The Antichrist*, in *The Portable Nietzsche*, ed. and trans. by Walter Kaufmann (New York: Penguin Books, 1983), 612.

¹¹³ James Edward Stroud, *The Knights Templar & the Protestant Reformation* (Maitland, FL: Xulon Press, 2011), 162.

asks who in their right mind would follow a book that condones slavery, or allows one to sell their daughter as a sex slave? Justifying one's morality upon the Bible, he says, is "faith-based irrationality."¹¹⁴ Harris cherry picks passages which deliberately offer up a warped view of Scripture, thus fashioning a straw man one is easily willing to reject. Part of the caricature of faith he presents is that the Catholic Church is not only responsible for overpopulation, poverty, and the spread of HIV, but its anti-Semitism paved the way for Nazism. His parody extends to Muslims as well, whom he portrays as blood thirsty extremists willing to murder one over the depiction of the Prophet Muhammad in a cartoon. Atheism, on the other hand, is very well behaved and rational. When, he asks, "was the last atheist riot?"¹¹⁵

For these reasons, Harris rejects religion and prescribes atheism as the cure to irrational faith. He argues religion compels the faithful to believe what he considers to be the utmost nonsense, with little to no justification. Thus Harris is an evidentialist. Any belief that is held on insufficient evidence should be rejected. He argues that all people who make claims to knowledge about the world are required to justify their beliefs, except for religious beliefs. Justification must be in the form of empirical evidence, logical consistency, or coherence.¹¹⁶ Yet he argues religious beliefs lack all of these, and this is why "Pascal's wager, Kierkegaard's leap of faith, and other epistemological ponzi schemes won't do."¹¹⁷ He says, "we have names for people who have many beliefs for which there is no rational justification...we call them 'mad,' 'psychotic,' or

¹¹⁴ Harris, *Letter to a Christian Nation*, 31.

¹¹⁵ *Ibid.*, 39.

¹¹⁶ Harris, *The End of Faith*, 50-54.

¹¹⁷ *Ibid.*, 62-3.

‘delusional.’”¹¹⁸ Why are people atheists? Because Harris claims it is the only reasonable position if the alternative is accepting unjustified religious beliefs. He cites the Holocaust (which he recasts so as to make it a Christian rather than Nazi phenomenon), the genocide in Rwanda, and the fact that in the twentieth century five hundred million people died of small pox as evidence that the traditional theist conception of God is incoherent. How could a loving, caring God allow such atrocities to occur? The only conclusion one is left to draw is that “the Biblical God is a fiction, like Zeus and the thousands of other dead gods whom most sane human beings now ignore.”¹¹⁹

Harris is therefore skeptical of putting people who are religious in high public office. He is skeptical of people like the late Supreme Court Justice Antonin Scalia, or former Attorney General John Ashcroft, who believe that civil law is grounded in divine law. As Harris rejects divine law, on what then does he ground his ethic? Like many naturalists, Harris advocates the ethics of personal pleasure, Hedonism, in the form of “sensory neuron stimulation.” He states “pleasure is the norm.”¹²⁰ He advocates abolishing all ‘sin’ or ‘vice laws’ that are based upon theistic morality that aim to regulate the pursuit of non-violent pleasure. He adds that these laws are considered ‘victimless crimes,’ i.e., they are private rather than public matters, and the government should have no control over “what people do in the privacy of their own homes.”¹²¹ As a result he wants to do away with all laws forbidding pornography, prostitution, abortion, sodomy, homosexuality, and stem cell research. He believes the government should also

¹¹⁸ Ibid., 72.

¹¹⁹ Harris, *Letter to a Christian Nation*, 55.

¹²⁰ Harris, *The End of Faith*, 160.

¹²¹ Ibid., 159.

legalize a wide variety of pleasure producing drugs that stimulate the nervous system, among them LSD, mescaline, psilocybin, DMT, MDMA, and marijuana. He states, “marijuana kills no one...In fact, nearly everything human beings do – driving cars, flying planes, hitting golf balls – is more dangerous than smoking marijuana in the privacy of one’s own home.”¹²² Harris would have us believe people of faith are delusional, irrational, and ‘mad,’ yet the naturalistic ethic he offers to replace it with is an ethic dedicated to the pursuit of base sensual pleasure.

Does Sam Harris believe in freedom of opinion? No. He states, “it is time we recognized that belief is not a private matter.”¹²³ He cites the belief of the 9/11 hijackers that what they were doing was God’s will as an example of unjustified beliefs which are dangerous to society. The fault of Muslim extremists is their intolerance of anyone with a differing viewpoint. Harris claims intolerance is a fundamental vice of faith; the stronger the faith, the stronger the intolerance.¹²⁴ No one denies that we should not tolerate those who threaten society with violence or terrorist acts. However, it does not follow from the fact that just because a few religious people resort to terrorism, that all religious people are a threat or that all religion is to blame. If a person wants to pray to God in the privacy of their own home, it is hard to see how that is a threat to anyone. If Harris objects to anyone possessing religious faith, no matter how benign it may be, his intolerance is no different from that of exclusivist, fundamentalist extremists. Harris urges us to put an end to both individual and collective religious faith, and turns to neuroscience to replace it. Just as no one practices alchemy anymore, he argues, “faith-

¹²² Ibid., 161.

¹²³ Ibid., 44.

¹²⁴ Ibid., 86.

based religion must suffer the same slide into obsolescence.”¹²⁵ But his message is inconsistent, and the religions he rails against are a caricature of faith, and as a result it is difficult to accept his arguments.

3.6 The Churchlands: Eliminative Materialism

Paul Churchland, like Dennett and Hitchens, sees the origin of religion as the product of cultural and social conditioning. He notes that “Christianity is centered in Europe and the Americas, Islam in Africa and the Middle East, Hinduism in India, and Buddhism in the Orient. Which illustrates what we all suspected anyway: that social forces are the primary determinants of religious people in general.”¹²⁶ As a result, he rejects “the explanatory impotence of dualism as compared to materialism.”¹²⁷ He argues that all the problems in philosophy of mind will be resolved after the field of neuroscience has progressed sufficiently. It’s not a matter of if, but when. To this extent, Churchland is an adherent of scientism and metaphysical naturalism of the reductive type; he believes all mental states can be replaced by brain states.

Churchland is famous for espousing ‘eliminative materialism,’ which wants to eliminate the ‘folk psychology’ we use when speaking of mental states because it seems to assume a Cartesian ghost in the machine. He states that, “Eliminative materialism is the thesis that our common-sense conception of psychological phenomena constitutes a

¹²⁵ Ibid., 14.

¹²⁶ Paul M. Churchland, *Matter and Consciousness, A Contemporary Introduction to the Philosophy of Mind* (Cambridge, MA: MIT Press, 1993), 15.

¹²⁷ Ibid., 18.

radically false theory.”¹²⁸ He thinks that our ordinary language, divided into subject/object talk, is defective and needs to be replaced. A famous example of what this might look like was given by Richard Rorty when he stated that instead of saying “I am in pain,” which implies a substantial self that is experiencing a property of the body, we should say “my C-fibers are firing.”¹²⁹ Churchland sees the folk psychology of personal identity as a leftover from an earlier, pre-scientific stage in our historical development, “a stage the neuroscientists may help us to transcend.”¹³⁰ Even ‘beliefs’ will be eliminated because methodological materialism does not recognize the “familiar mentalistic phenomena recognized in folk psychology.”¹³¹ However, the term ‘folk psychology’ is a pejorative label for causally interactive mind/body substance dualism, and thus constitutes a persuasive definition. It implies that dualism is a simpleminded, primitive, and naïve position that no one takes seriously anymore. Though the term ‘folk psychology’ does not originate with Churchland, it is evidence of subliminal propaganda that many strict naturalists employ to undermine alternative metaphysical positions.

The evidence he draws on to support his position is from the field of neuroscience. He begins with an analysis of the human brain, which consists of 10^{11} or 100 billion neurons. The average neuron has 3,000 connections with other neurons because of its branching dendrites and axons. The overall interconnectivity of the entire system is around 10^{14} or 100 trillion connections, a figure which suggests the enormous complexity and computing power of the brain.¹³² He argues that the fact that various

¹²⁸ Paul M. Churchland, ‘Eliminative Materialism and the Propositional Attitudes,’ in *Contemporary Materialism, A Reader*, ed. by Paul K. Moser and J.D. Trout (New York: Routledge, 1995), 150.

¹²⁹ Richard Rorty, *Philosophy and the Mirror of Nature* (Princeton, NJ: Princeton University Press, 2009), 92.

¹³⁰ Churchland., *Matter and Consciousness*, 144.

¹³¹ *Ibid.*, 97.

¹³² *Ibid.*, 96.

psychoactive drugs can control mental illness, suggests their origin is biological. In other words, if you interfere with the chemical activities of the neurons, you interfere with the person's personality and identity.¹³³ This suggests their neural basis. One is also able to determine what part of the brain is involved in various cognitive functions on the basis of stroke damage and other individuals who have brain damage in very precise areas of their brain.¹³⁴ As a result, he thinks "the weight of evidence indicates that conscious intelligence is a wholly natural phenomenon," the outcome of billions of years of blind evolutionary processes.¹³⁵

Patricia Churchland is also a professor of philosophy at the University of California San Diego along with her husband. In her latest book, *Touching a Nerve: The Self as Brain*, she argues that the traditional philosophy of mind approach involves very little neuroscience. She says her students are "drawn to the sciences of the brain as to a night bonfire."¹³⁶ She follows Owen Flanagan in characterizing this restless interest as 'neuroexistentialism.' Her definition of naturalism is that the mind is made up of "only brain stuff," as opposed to "soul stuff."¹³⁷ As evidence, she cites antibiotics, anesthesia, hallucinogens, stroke victims, and split-brain experiments to support naturalism. She argues that techniques for studying the brain have only arisen in the last few decades. The knowledge of how the brain works makes it increasingly unlikely that there is a soul. Prior to the rise of neuroscience, consciousness was considered "too deep a mystery for us ever to understand. Give up trying...no one will ever solve the mystery."¹³⁸ However,

¹³³ Ibid., 145.

¹³⁴ Ibid., 140-1.

¹³⁵ Ibid., 167.

¹³⁶ Patricia Churchland, *Touching a Nerve: The Self as Brain* (New York: W.W. Norton & Co., 2013), 20.

¹³⁷ Ibid., 46.

¹³⁸ Ibid., 56.

she argues that neuroscience is increasingly solving this mystery, to such an extent that she feels comfortable concluding “the soul and the brain are one and the same; what we think of as the soul is the brain, and what we think of as the brain is the brain.”¹³⁹

The second half of her book attempts to make the ‘hard problem’ of consciousness and all the sticky problems associated with it, disappear with a single wave of her hand and the invocation of ‘neuroscience.’ She cites several scientific studies linking neurochemicals in the brain with love and sex. One study suggests prairie voles are monogamous, while montane voles are not, due to the presence of vasopressin in the former but not in the latter.¹⁴⁰ However, while monogamy in voles may be related to the secretion of dopamine, oxytocin, and vasopressin and the absence of stress hormones, it is hard to say that these studies can account for the human phenomena of ‘love.’ It is clear that Churchland is trying to force the inference, that love can simply be reduced to chemicals in the brain. But it is difficult to make the transition from studies on prairie voles to human behavior. Human monogamy and marriage involve ethical commitments that surpass the ability of chemicals to determine. In addition, humans experience many different kinds of love besides erotic love. While it might be possible to associate mating with hormones, the love of God or *agape* love seems less easy to reduce to the presence or absence of chemicals in the brain. Luther believed that human love was essentially selfish and seeks its own interests, and that true love was impossible without the incarnation. This would make the phenomenon of human love the product of a

¹³⁹ Ibid., 60-1.

¹⁴⁰ Ibid., 97-103.

supernatural event, and explain human love as an extension of and participation in, God's love.¹⁴¹

Churchland also gives the standard naturalist response to near-death experiences, as resulting from the release of ketamine or as due to other neurobiological causes, such as anoxia, hypoxia, hallucination, or outright self-deception.¹⁴² Like most skeptics, she says near-death experiences prove nothing, because the person isn't really dead. Victor Stenger, in *God, the Failed Hypothesis*, argues the same thing. However, this explanation does not give the phenomena the justice they deserve. An honest, in-depth reading of the near-death literature reveals them to be very complex and persuasive to those who have them. The people who have them are convinced by them that death is not the end of human existence. Churchland dismisses near-death experiences too quickly and it is doubtful she has read the near-death literature.

Last, Churchland tries to reduce morality to purely neurobiological conditions. Reptiles eat their young, whereas mammals love, nurture, and care for their young. So morality is the result of having a mammalian brain. "The expanding circles of caring characteristic of humans and many other mammals – extending beyond an individual and her offspring to include *my* mate, *my* kin, and *my* affiliates – is the expanding of the magic circle of *me* and *mine*."¹⁴³ But the phenomena of animals caring for one another is too primitive to be related to human ethics. Human ethics entertains notions of right and wrong, matters of moral obligation, and involve deliberation and the weighing of good over bad, not to mention free choice. A detailed analysis of morality and other

¹⁴¹ Simon May, *Love, A History* (New Haven: Yale University Press, 2011), 87-91.

¹⁴² Patricia Churchland, *Touching a Nerve*, 71-2.

¹⁴³ *Ibid.*, 85-86, 98-9.

phenomena like near-death experiences demonstrates that they defy her overly-simplistic reduction. This suggests that ‘folk psychology’ might survive after all, despite its attempted elimination by the Churchlands.

The philosopher of science Michael Silberstein recently declared in his paper ‘After the Philosophy of Mind: Replacing Scholasticism with Science,’ that “the philosophy of mind is over.”¹⁴⁴ Like the Churchlands, he believes that the philosophy of mind has and should be reduced to a field of the biological sciences, that the debates over the essence of mental states and their content can now be settled by the philosophy of cognitive science and neuroscience. Like Quine, he thinks that “the philosophy of science is philosophy enough.” The philosophy of mind should be replaced by cognitive science, or neurophilosophy, and by implication, the philosophy of religion would become neurotheology, or as Nietzsche and Harris believe, just fables. Yet Silberstein really gives no reason for this assertion. As with so many naturalists, it appears to be just a dogmatic claim. It is not enough to just summarize the field of cognitive science and say, these are your choices now, interactive dualism is no longer on the menu. One doesn’t dismiss one’s opponent by simply stating that the opponent’s position isn’t an option. The case for theism remains to be considered. It’s not enough to point the finger at Darwin, and say, ‘That’s why I’m a naturalist,’ for the reasons we shall now consider.

4. Was Darwin a Naturalist?

¹⁴⁴ Michael Silberstein and Anthony Chemero, ‘After the Philosophy of Mind: Replacing Scholasticism with Science.’ *Philosophy of Science* 75 (1):1-27 (2008).

Contrary to all those naturalists who want to claim Darwin is on their side, the answer to the question, was Darwin a naturalist? is, no. If he were, why did he train for a career in the ministry? If he were, the *Origin* would not begin with an epigraph from William Whewell, an Anglican priest, philosopher, and historian of science, which reads:

But with regard to the material world, we can at least go so far as this – we can perceive that events are brought about not by insulated interpositions of Divine power, exerted in each particular case, but by the establishment of general laws.¹⁴⁵

Darwin came to see God as creating not by making each individual species piecemeal, but rather through ‘the establishment of general laws,’ i.e., the laws of modification of species by means of natural selection. This by no means can be seen as an endorsement of naturalism, as it clearly cites a supernatural being as the source of the laws of nature. In the second edition of *The Origin of Species*, which came out the year after the first, Darwin added another epigraph from the English theologian Joseph Butler. It reads:

The only distinct meaning of the word ‘natural’ is *stated, fixed, or settled*; since what is natural as much requires and presupposes an intelligent agent to render it so, i.e., to effect it continually or at stated times, as what is supernatural or miraculous does to effect it for once.¹⁴⁶

This statement seems to be clarifying what Darwin means by ‘natural selection.’ It is not a natural process in the sense that naturalism is opposed to supernaturalism. Natural processes have been put into place and set up by “an intelligent agent,” and left to run their course. This ‘running their course’ is the course which is governed by the laws of nature, which the intelligent agent has

¹⁴⁵ Charles Darwin, *The Origin of Species by Means of Natural Selection* (New York: Barnes & Noble Books, 2004), 3.

¹⁴⁶ Charles Darwin, *The Origin of Species*, 2nd edition, 1860, 411.

determined and effected. This is a far cry from strict metaphysical naturalism which affirms that all that exists is the material universe and its natural processes, minus any supernatural author. Not only does Darwin begin *The Origin of Species* with two quotations referring to a divine power and intelligent agent, but he also ends *The Origin* with a reference again to a supernatural Creator, with this quotation in the next to last paragraph of the book:

To my mind it accords better with what we know of the laws impressed on matter by the Creator, that the production and extinction of the past and present inhabitants of the world should have been due to secondary causes, like those determining the birth and death of the individual.¹⁴⁷

This passage reiterates what is stated in the first epigraph by Whewell, that to Darwin (“to my mind”) it seemed more dignified for God to create by means of natural selection, then to have to keep intervening in the natural world to create anew each independent species. Then, to cap it all off, in the 2nd edition of *The Origin*, Darwin changes the very last line of the book, which read, “There is grandeur in this view of life, with its several powers, having been originally breathed into a few forms or into one...” Darwin adds after ‘breathed,’ the phrase ‘by the Creator.’¹⁴⁸

A truly scientific response to the question of whether Darwin was a naturalist or a theist, should be, who cares? The private beliefs on questions of God should have no bearing on scientific theories. The theological ideas or personal preferences behind the founder of a scientific theory shouldn’t matter. Did Einstein prefer Bach to Beethoven? As it pertains to the theory of relativity, who cares? Similarly, it should be completely

¹⁴⁷ Darwin, *The Origin of Species*, 1st edition, 383.

¹⁴⁸ *Ibid.*, 417.

irrelevant what Darwin's metaphysical preferences were. In addition, Darwin was just one person. What matters is not so much what Darwin believed, as what the scientific community believes. In science, a new theory is not considered valid until after another investigator has put the theory to the same test and confirmed it. As a result, Isaac Asimov concludes, "science is the product not of individuals but of a 'scientific community.'"¹⁴⁹ The problem here is that the question of whether or not evolution is the result of natural or guided process is not necessarily something one can easily put to the test. As Darwin himself notes, a supernaturalist could easily say that God works through natural, secondary causes. All one might see is the natural processes, not the God who set it up.

However, while the subjective beliefs of the scientist often are irrelevant to the claims of their scientific theory, in this instance, for various reasons, it might matter what the scientist's personal opinions are. Darwin is not a research scientist operating under the paradigm of normal science. He is a game changer, a revolutionary thinker. This makes his beliefs concerning the implications of his theory for the field of metaphysics relevant. Did Darwin think that evolution by means of natural selection was a strictly naturalistic process? What he thought on the matter helped shape the interpretation of his theory as it was debated. In addition, each scientist who is confronted with the teachings of evolutionary theory, is inevitably faced with the same issue that Darwin confronted: Is evolution a strictly naturalistic process? Can it account for the origin of all forms of life, not just species, in strictly naturalistic terms? Does Darwin allow for supernatural guidance of evolutionary processes, as Wallace did? Or does a detailed account of the

¹⁴⁹ Isaac Asimov, *Asimov's New Guide to Science* (New York: Basic Books, 1984), 13.

laws of evolution seem to rule out the type of theism portrayed in the western traditions of natural theology, revealed religion, and personal experience?

Nevertheless, Asimov is correct that it is the final determination of the community of scientists in evaluating scientific theories that matters, rather than the subjective views of individual scientists. So perhaps the question we should be asking is not, Was Darwin a naturalist, but does the scientific community adhere to naturalism? How did Darwin's fellow scientists interpret the matter? There were some who found in the doctrine of evolution a welcome challenge to the control the church exercised over society and science. Darwin's bulldog, T.H. Huxley, saw the theory as leading to naturalism and agnosticism. There were others who wanted Darwin to leave open the possibility of divine guidance, and rule out evolution by strictly natural processes. Asa Gray, professor of natural history at Harvard, and the geologist Charles Lyell, were in this camp. "Their creator seemed more hands-on, actively leading evolution on...guiding variations."¹⁵⁰ Darwin on the other hand felt intelligent design smacked too much of special creation. Darwin felt natural selection was a more elegant and dignified way of creating than God having to constantly intervene and create adapted species for each particular ecological niche. Maintaining belief in providence as guiding the whole process made natural selection somehow 'superfluous' to Darwin.

Daniel Dennett tries to make it look as if Darwin was influenced by Gray into remaining open to supernaturalism. He states, "In 1860 Darwin wrote, 'I am inclined to look at everything as resulting from designed laws.' It seemed that he had left open the possibility that God did His handiwork by designing an automatic design-maker. Asa

¹⁵⁰ Nick Spencer, *Darwin and God* (London: SPCK, 2009), 88-89.

Gray came up with this marriage of convenience: God intended the ‘stream of variations.’”¹⁵¹ Unlike Darwin, Gray wasn’t arguing for merely a form of deist ‘designed laws.’ Gray thought it was perfectly reasonable that God could intervene and guide the process as well. Gray was trying to reconcile evolution with theism, without it degenerating into Darwin’s deism. Wallace, the ‘cofounder’ of natural selection, became a spiritualist later in life, and thought that human consciousness could not arise from strictly natural processes. He also felt that mathematics defied reduction. But Dennett, Dawkins, and Hitchens write off Darwin’s use of religious language in his writings as concessions to his religious friends and his wife. Dennett and Dawkins insist that Darwin saw natural selection as strictly that, a natural process. Dawkins writes, “Darwin and Wallace...provided explanations of our existence that completely rejected supernatural agents.”¹⁵² This simply is not true. Darwin was open to the laws of nature being designed by a supernatural agent, and Wallace felt human consciousness to be the result of special creation.

However, it is true that Darwin’s faith weakened over time and at his death he was much more skeptical. He never became a full-fledged atheist or strict naturalist, though, as some want to claim. Darwin’s faith transitioned from a weak theism, to the type of deism found in the quotations above, to a more skeptical, agnostic position shortly before his death. Supposedly the death of his daughter Annie in 1851, and the realization of the great suffering involved in the process of evolution by selection, ate away at his faith. Naturalists claim this led to his abandoning faith completely, but Darwin does not

¹⁵¹ Dennett, *Darwin’s Dangerous Idea*, 67.

¹⁵² Dawkins, *God Delusion*, 143.

state this. Nevertheless, naturalists point to passages such as the following in Darwin's 1876 *Autobiography*, to support their position.

I feel compelled to look to a First Cause having an intelligent mind in some degree analogous to that of man; and I deserve to be called a Theist. This conclusion was strong in my mind about the time, as far as I can remember, when I wrote the *Origin of Species*; and it is since that time that it has very gradually with many fluctuations become weaker.¹⁵³

While Darwin admits that his Christian faith was ultimately undermined by his theory, he does not state that it led him to atheism, or strict naturalism, but rather towards a kind of creaturely agnosticism. He states in *The Variation of Animals* that he found the question of God's existence "insoluble," an issue that is incapable of being solved, a mystery, and forever beyond the power of humans to know with certainty.¹⁵⁴ It is ironic that the New Atheists use Darwin as a kind of atheist saint in order to advance their cause. Yet in a conversation with John Fordyce, Darwin said, "in my most extreme fluctuations I have never been an atheist in the sense of denying the existence of a God."¹⁵⁵ M.A. Corey concludes that, "Popular opinion has it that Charles Darwin was a radical atheist... The fact is, however, that Darwin wasn't an atheist at all. He was a radical deist, which is to say that he believed in the existence of a distant primordial Creator, who created self-organizing atoms and then allowed them to evolve on their own according to natural law."¹⁵⁶ So when the New Atheists use Darwin to declare that naturalism is 'the answer,' or the solution to the problem of the science vs. religion

¹⁵³ Charles Darwin, *The Autobiography of Charles Darwin, 1809-1882*, ed. by Nora Barlow (New York: W.W. Norton & Co., 1993), 92-93.

¹⁵⁴ Spencer, *Darwin and God*, 94.

¹⁵⁵ *Ibid.*, 97.

¹⁵⁶ M.A. Corey, *Back to Darwin: The Scientific Case for Deistic Evolution* (Lanham, MD: University Press of America, 1994), 6.

debate, and should be the new ‘orthodoxy,’ that is not how Darwin saw it. Using his own words, Darwin considered the problem not solved, but ‘insoluble.’

How might a theist respond to Darwin’s concern over the problem of suffering? People who have had near-death experiences state that their experience of the afterlife was one of pure joy, peace, and love. It is so blissful that they wish to stay there, and some have described coming back to their body like returning to Hell. St. Teresa, after experiencing hell in a vision, said that the suffering of this world is nothing in comparison.¹⁵⁷ St. Julian of Norwich, similarly, claims that she expressed her concerns about the existence of sin in a vision to Jesus, who responded, “all shall be well, and all shall be well, and all manner of things shall be well.”¹⁵⁸ She claimed to see that God holds the universe in the palm of his hand and will eventually right all wrongs, that ‘all is well.’ Similarly, the Jesuit spiritual teacher Anthony de Mello writes, “all mystics – Catholic, Christian, non-Christian, no matter what their theology, no matter what their religion – are unanimous on one thing: that all is well, all is well.”¹⁵⁹ The Book of Revelation similarly states that God “will wipe every tear from their eyes. There will be no more death or mourning or crying or pain.” (Rev. 21:4)

To say that Darwin was an atheist, and that acceptance of evolution must entail naturalism, is an unjustified inference. Contrary to what Dennett says, Darwin is not a ‘universal acid.’ However, Darwin may be corrosive. The God of theism does appear incompatible with the view of the universe that Darwin espoused. While Darwin may

¹⁵⁷ St. Teresa of Avila, in *An Anthology of Christian Mysticism*, (Springfield, IL: Templegate Publishers, 1977), 85.

¹⁵⁸ St. Julian of Norwich, in *An Anthology of Christian Mysticism*, (Springfield, IL: Templegate Publishers, 1977), 58.

¹⁵⁹ Anthony de Mello, *Awareness* (New York: Doubleday Press, 1990), 11.

have believed in a causally closed universe, his belief that evolution was a strictly naturalistic process was not unanimous amongst the scientific community. Asa Gray, George Lyell, and Alfred Wallace, all sought to reconcile Darwin's vision of evolution with theism. The strictly Darwinian worldview, however, is incompatible with the vision of God in Scripture, but it is not fatal to a God as the author of the laws of nature. The Biblical God is a sovereign who rules God's Kingdom and His people run to Him in times of trouble, asking Him to intervene on their behalf. Choosing to have God on your side is a variation that may be said to favored by natural selection. The Biblical God portrays a God who is actively managing His kingdom. God guides and protects those who fear him and who love Him. God is a lawgiver, who punishes disobedience and rewards faith, a God who listens to prayers and grants favors, enters into alliances, anoints kings, and raises up prophets. According to this worldview there is a shepherd who guards his flock, and it is not nature alone who determines who lives and who dies.

CHAPTER THREE –
EVOLUTIONARY THEORY: DARWINISM AND THE MODERN
EVOLUTIONARY SYNTHESIS

Whether one likes it or not, the age belongs to Darwin.¹ – Michael T. Ghiselin

One general law, leading to the advancement of all organic beings, namely, multiply, vary, let the strongest live and the weakest die.² – Darwin

Thus, from the war of nature, from famine and death, the most exalted object which we are capable of conceiving, namely, the production of the higher animals, directly follows. There is grandeur in this view of life, with its several powers, having been originally breathed into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved.³ – Darwin

Is man an ape or an angel?⁴ – Benjamin Disraeli

Today Darwin is *the* ‘scientist’ to reckon with.⁵ – Desmond and Moore

¹ Michael Ghiselin, *The Triumph of the Darwinian Method* (Mineola, NY: Dover Publications, Inc., 2003), 243.

² Charles Darwin, *The Origin of Species by Means of Natural Selection*, 1st edition (New York: Barnes & Noble Books, 2004), 200.

³ *Ibid.*, 384.

⁴ Benjamin Disraeli, quoted in Charles Darwin, *The Expression of the Emotions in Man and Animals*, Introduction by Joe Cain (New York: Penguin Books, 2009), xiii.

⁵ Adrian Desmond and James Moore, *Darwin’s Sacred Cause – How a Hatred of Slavery Shaped Darwin’s Views on Human Evolution* (Boston: Houghton Mifflin Harcourt, 2009), xix.

1. The *Origin* as ‘One Long Argument’ – An Argument against Special Creationism

In the concluding chapter of the *On the Origin of Species* Darwin states that his volume is “one long argument.”⁶ Everyone knows that the *Origin* is an *argument for* evolution, but it is also an *argument against* Creationism, which was the predominant theory of the origin of species of his time and culture. Even Darwin was an adherent of this theory when he left England on board the *HMS Beagle* in 1861. He calls this theory or worldview “the ordinary view of each species having been independently created” by the direct action of God.⁷ It is against this ‘ordinary view’ that many of his arguments are directed. Throughout the *Origin* Darwin makes statements such as the following: ‘How inexplicable are these facts on the ordinary view of creation!’⁸ Whether he is talking about the fossil record, homologous structures, or embryology, Darwin feels descent by modification is a better explanation of the facts than the ordinary view, *special creation*. So before considering what Darwin’s argument is, let us first consider the worldview that his argument is trying to refute.

Darwin’s undergraduate degree was not in biology or even the sciences. He had tried to follow in his father’s footsteps as a physician, and enrolled at the University of Edinburgh in 1825 to study medicine, but he could not stomach the sight of surgery. He then transferred to Cambridge in 1827 to study theology, hoping to pursue a career as a country parson so that he could follow his avocation as a naturalist. At Cambridge

⁶ Ibid., 362.

⁷ Ibid., 372.

⁸ Ibid., 345.

theology students were required to read the works of William Paley.⁹ As a result, Darwin was well-acquainted with the arguments in William Paley's *Natural Theology*. Darwin took Paley's writings as a paradigmatic statement of the creationist worldview. Peter Bowler states that Darwin was "captivated" by Paley's arguments.¹⁰ Stephen Jay Gould argues that the *Origin* is an attempt to refute Paley's arguments in particular.¹¹ So what is Paley's argument? It is an argument by analogy. For Paley, just as it is valid to infer that the order in a watch reflects the ordered design in the mind of a watchmaker, so too the order in nature reflects the ordered design in the mind of a divine being. Nature is ordered in that each species is genuinely well-suited or adapted to its own particular environment. In addition, the argument is strengthened by the fact that the complexity found in a watch is exceeded by that found in nature, as in the case of an eye.¹² Darwin also accepted that species are well adapted to their environment, but instead of positing a divine being miraculously creating each species, he sees adaptation as the result of natural selection. In other words, Darwin sees adaptation as the result of natural processes, not the result of divine design.

The belief in the independent, miraculous creation of each species by God is just one of several basic beliefs, both religious and secular, of the pre-Darwinian worldview.

Ernest Mayr lists several others:

1. The earth is relatively young, and has remained unchanged since creation.
2. Species are fixed; they do not change.
3. The world was created by a wise and benign God.

⁹ Adrian Desmond and James Moore, *Darwin, the Life of a Tormented Evolutionist* (New York: Warner Books, 1991), 77.

¹⁰ Peter Bowler, *The Non-Darwinian Revolution* (Baltimore: John Hopkins University Press, 1988), 21.

¹¹ Stephen Jay Gould, *The Structure of Evolutionary Theory* (Cambridge, MA: Belknap Press, 2002), 121.

¹² William Paley, *Natural Theology* (Charlottesville, VA: Ibis Publishers, 1986), ch. 1.

4. Anthropocentrism: the world was created for the benefit of human beings, who are the highest corporeal beings in existence.¹³

The first belief of the pre-Darwinian worldview is in a young earth, one that has remained unchanged since the time of creation, roughly 6,000 years ago. This date was arrived at by taking the biblical creation story in Genesis as literally true and then tracing the genealogy of the people mentioned in the Bible. This allowed the Archbishop of Armagh, James Ussher, in 1650 to set the date of creation at Sunday, October 23, 4004, B.C. Similarly, the Jewish calendar begins with the origin of the universe. That means that the Gregorian calendar year 2016 is the 5777th year since creation.

The second belief in fixity of species meant that species were unchanging.¹⁴ This belief is derived from the Bible, which says that each species was created by God. It also has a basis in philosophy. Plato believed that the species reflected transcendent forms, eternal essences which they are based upon. Aristotle believed species are eternal, that they have always existed substantially as forms wedded to matter. He believed that an acorn became an oak tree, not an elm tree, because it possessed an oak essence. This typological or essentialist view of species posits that an inner essence or type defines each species and is fixed. Moreover, the species can be ranked in a metaphysical hierarchy of a Great Chain of Being, with God, complete Being and perfection, at the top, followed by Angels (for Augustine), then humans, animals, plants, matter with form, and last, matter without form. That the species are fixed means that they are static and cannot move up or down the ladder of Being.

¹³ Ernst Mayr, *One Long Argument, Charles Darwin and the Genesis of Modern Evolutionary Thought* (Cambridge, MA: Harvard University Press, 1991), 38-9. These beliefs are a composite, both secular and religious, of the seven that Mayr lists.

¹⁴ *Ibid*, 52.

The third belief, that the world was designed by a wise and benign creator again reflects the Genesis story that God created the universe for the purpose of humanity. This belief is based upon the theory that each species was created with a distinct purpose in mind. Thus Nature reflects the benevolence and wisdom of divine design. This allowed Leibniz to conclude that this is the best of all possible worlds.¹⁵ Each species is uniquely designed and adapted to its environment through a divinely ordained teleology, for God does not do anything without sufficient reason. Thus each species and the world are here for a reason, which may not be evident to us but is known to God.

Fourth and last, is the anthropocentric belief in the uniqueness and superiority of human beings. Humans are at the top of the chain of being in this world because they alone have souls. Other animals do not. All other organisms are merely physical creatures and have no spiritual nature. For Aristotle, what distinguishes humans from all other species is that they have a rational soul. In the Judeo-Christian tradition, the human soul is made in the image of God and reflects God's spiritual, personal nature. God has also granted humans dominion as lords or stewards over all of divine creation. Building upon the previous belief in the fixity of species, this precludes animals from ever evolving into human beings. Hence, between humans and the rest of the animal kingdom there is a sharp line, with humans radically different from all other living things, not just quantitatively but qualitatively.

It is this worldview that the *Origin* and the *Descent* seek to refute, and especially the doctrine that species originated by divine fiat or special creation. Darwin left England in 1831 on board the HMS *Beagle* as a firm believer in the fixity of species and

¹⁵ Bertrand Russell, *A History of Western Philosophy* (New York: Simon and Schuster, 1945), 589-90.

many of the other beliefs of the ‘ordinary view.’ Yet he ended the voyage no longer accepting the ordinary view of creation. Why? What happened while on the *Beagle*?

Throughout the *Origin* Darwin notes facts again and again which he claims the ordinary view cannot plausibly explain, but which the theory of descent with modification can.

He who believes that each being has been created as we now see it...He who believes in separate and innumerable acts of creation will say, in these cases it has pleased the Creator to cause a being of one type to take the place of one of another type...He who believes in the struggle for existence and in the principle of natural selection, will acknowledge that every organic being is constantly endeavoring to increase in numbers.¹⁶

On the view that each species has been independently created, with all its parts as we now see them, I can see no explanation. But on the view that groups of species have descended from other species, and have been modified through natural selection, I think we can obtain some light.¹⁷

On the ordinary view of each species having been independently created...I do not see that any explanation can be given.¹⁸

Many other facts are explicable on this theory [descent with modification]...how [ever they are] inexplicable on the theory of creation.¹⁹

So what are these facts that Darwin finds to be ‘inexplicable’ by special creation, yet ‘explicable’ by evolution? A year into the trip Darwin was confronted with fossils of ancient extinct animals which resembled living animals in the same vicinity, but which were much larger. He began to suspect they were ancestors of the forms now present, which had changed over time.²⁰ As a result, he came to believe in transmutation of species over long periods of time. Transmutation of species, however, requires large

¹⁶ Darwin, *The Origin of Species*, 156.

¹⁷ *Ibid.*, 130.

¹⁸ *Ibid.*, 133.

¹⁹ *Ibid.*, 371-2.

²⁰ Robert Jurmain, Lynn Kilgore, Wenda Trevathan, Harry Nelson, *Introduction to Physical Anthropology*, (Belmont, CA: Wadsworth-Thomson, 2003), 29.

amounts of time. In addition, Darwin's belief in a young earth had been weakened through prior acquaintance with Lamarckism, which was the main evolutionary theory of his day and to which he had been exposed while studying at the University of Edinburgh. But his belief in a young earth was further weakened when he read Lyell's *Principles of Geology* while on board the *Beagle*. Lyell, the father of modern geology, was an adherent of uniformitarianism, or the belief that the earth's features were caused by the same uniform process one sees now, such as volcanism, earthquakes, and erosion, but over long periods of time.

Some argue that Darwinism is simply the extension of Lyell's principles of geology to biology. Just as Lyell argued that the kind of processes which are currently observable can and do shape and change the geology of the planet over long periods of time, so Darwin argued that processes of natural selection acting upon variation which are currently observable can give rise to species morphing into something different over long periods of time. The isolation of a breeding population can, over a long period of time, create large enough differences among populations of what were the same species so that they can no longer interbreed. Hence, a new species is formed. Thus, just as current geological formations can be explained by natural processes, so too can evolution explain how current species arose through analogous natural processes.

On his travels aboard the *Beagle* Darwin found many variations of multiple species. He came to the conclusion that it would be absurd for God to create all these varieties and species, each requiring a separate act of creation. But it is largely due to his observations of the finches in the Galapagos Islands that Darwin also came to doubt the fixity of species, i.e., the idea that a species has an essence that cannot change (be that

essence instilled through participation in a transcendent form, an immanent substantial form, or divine implantation). Darwin initially thought the thirteen types of finches he observed on the islands were just variations of the kind found on the mainland. But when he returned to England he was informed that each variety was in fact a different species. He found this odd. Why would God make finches in South America different from finches in North America, or different finches in each of the islands in the Galapagos? In addition, if the creation story found in Genesis is literally true and the earth is only roughly 6,000 years old, this is not enough time for these species to change, for “some forms of life change most slowly.” That requires “enormous periods of time.”²¹ Thus Darwin came to believe the earth must be much older than creationists believed.

In searching for a mechanism to explain how species change, in the fall of 1838 Darwin stumbled upon the economist Thomas Malthus’s *Essay on the Principles of Population*. He then extended Malthus’s argument from the human to the natural world.²² Populations tend to outstrip the food supply, resulting in competition for limited resources. The fit obtain these resources, the less fit do not, thus giving rise to famine, starvation, and extinction. Darwin extends this pessimistic scenario from the human to the natural world, but in doing so he seems to deny belief in a perfect world, ruled by a benevolent and loving God, as maintained by orthodox theologians.²³ A frequent metaphor which Darwin employs is that the world is a battlefield, in which “each lives by a struggle” and predation. In short, “the law of battle” reigns.²⁴ In fact, each life is a “battle within battle,” and all members of current species exist because of the countless

²¹ Darwin, *The Origin of Species*, 323.

²² Desmond and Moore, *Darwin, the Life of a Tormented Evolutionist*, 264-8.

²³ Mayr, *One Long Argument*, 14.

²⁴ Darwin, *The Origin of Species*, 80, 6.

deaths of unworthy members of other, or their own, species.²⁵ Would a truly kind, caring, benevolent God really create a world with such suffering and death, a world Tennyson famously characterized as “red in tooth and claw”? This realization is often cited as contributing to Darwin’s eventual loss of faith. As he says: “What war between insect and insect – between insects, snails and other animals with birds and beasts of prey – all striving to increase, and all feeding on each other... The dependency of one organic being on another, as of a parasite on its prey.”²⁶

Last, the idea that humans evolved from animals seems to entail that there is no Great chain of being, no static hierarchy with humans at the pinnacle. Evolution seems to entail that no organism stands at the top. As Darwin saw it, evolution is the result of apparently random processes, and hence cannot be seen as progressive. Evolution is not the result of divine fiat or the unfolding of a teleological process. It is progressive only in that it creates organisms that are well-adapted to their environment. Other than this, evolution entails no value judgments as to what is good, better, or best. It thus seems to sound the death knell for the type of anthropomorphism found in the Bible, which says that humans stand at the center of creation.²⁷ Darwin does not directly address the issue of anthropocentrism in the *Origin*. He avoids discussing the origin of the human species in the *Origin* because of its controversial nature. But in his later works, *The Variation of Animals and Plants under Domestication*, published in 1868, and *The Descent of Man*, published in 1871, he extends the principles of descent with modification to human beings. This is a logical continuation of the *Origin*, for if living organisms have come

²⁵ Ibid., 69.

²⁶ Ibid., 70.

²⁷ Ibid., 24.

into being through evolutionary processes, and human beings are living organisms, then they too must have evolved from lower life forms. In keeping with the scientific principle of simplicity, Darwin tries to show the continuity between human and animal world. He thus opposes creationists who believe in a radical discontinuity.

The ability to love is often interpreted by theologians as transcending the merely physical, and as something that makes humans ‘special.’ Whereas sexual reproduction and romantic love are thought to be physical, Platonic and Christian agape love are thought to be transcendent, hence spiritual, and thus evidence of the human soul. Darwin, on the other hand, maintains that all higher animals manifest similar passions, affections, and emotions, including a sense of humor.²⁸ He will expound upon this topic at great length throughout *The Descent of Man*, when he tries to show the continuity between animal and human behavior. In the *Origin*, Darwin subscribes to the “utilitarian doctrine that every detail of structure has been produced for the good of its possessor.”²⁹ In other words, he thinks that for every trait an organism has, there should be an evolutionary reason for its existence. So the existence of a trait is nothing other than a variation which favored that organism’s adaption to its environment, and hence helped to ensure its survival. In accounting for the human ability to love, Darwin provides a natural rather than supernatural explanation. Love is simply an emotion, not unlike similar emotions all other higher animals share. It evolved because there is an adaptive advantage to possessing it.

But there is a problem. Not all traits provide organisms with an adaptive advantage. A prime example is a male peacock’s tail. It is actually a hindrance because

²⁸ Helen Fisher, *Why We Love* (New York: Henry Holt and Co., 2004), 28.

²⁹ Darwin, *The Origin of Species*, 166.

it makes it more difficult for the peacock to move about and evade predators. Why, then, does it exist if it offers no adaptive advantage? Darwinian theorists think that sexual selection, rather than natural selection, provides the answer. The male peacock's tail has evolved because it attracts female peacocks. Similarly, some evolutionary psychologists, such as Geoffrey Miller in his book *The Mating Mind*, see the incredible intellect of human beings not as evidence of a divinely created soul, but as the result of a long process of sexual selection.³⁰ Our female ancestors chose to mate with those members of the opposite sex that could express themselves intelligently, with language or music, or who had advanced tool making abilities which contributed to more successful hunting and so on. As a result, Miller believes that the human mind is the product of courtship, not divine fiat. This argument appears to be implied in Darwin's *Descent of Man*. It also finds post-Darwinian support in the fact that human beings share roughly 98% of their DNA with chimpanzees. Man is little more than a chimpanzee with a big brain and no hair. Humans have thus been knocked off their anthropocentric pedestal. In brief: Why do humans have the ability to reason? Not because they are made in the image of God, but because female hominids liked male hominids with highly intelligent brains who could perform survival-and-reproductive-related tasks better than those with lesser brains.

2. The *Origin* as 'One Long Argument' – An Argument for Natural Selection

³⁰ Geoffrey Miller, *The Mating Mind; How Sexual Choice Shaped the Evolution of Human Nature* (New York: Doubleday, 2000), 3, 29, 138-9.

As noted, the concluding chapter of the *Origin* begins with Darwin stating that his volume is “one long argument.”³¹ So far, this has been interpreted as one long negative argument, an argument geared to refute the ‘ordinary view’ of special creation. Darwin rejects the ordinary view because it fails to explain various facts. But his argument is also a positive argument, an argument for an alternative account of how species originated. This is an argument for descent with modification by means of natural selection. The virtue of descent with modification is its explanatory power, its ability to explain various facts in a more satisfactory way. But what are Darwin’s arguments for evolution, in his own words? Mark Twain once quipped a ‘Classic’ is “something everyone wants to have read and no one wants to read.”³² Today, many people say they are familiar with and understand the ideas of evolution, but how many people have actually read the *Origin*, or know what Darwin’s actual arguments for evolution are?

Darwin begins the *Origin* with an argument by analogy. Chapter One begins with a discussion of domesticated animals. He probably begins this way because doing so would appeal to a larger number of people. Anyone with firsthand knowledge of the domesticated animals who knows that they show variation. Breeders of domesticated animals use variation as they select and cultivate their own breeds. Breeders know something that contradicts the ordinary view, namely, that an animal’s nature is “something quite plastic,” something that can be molded to the breeder’s own desires.³³ In other words, they know that species are not fixed. By selecting useful or desired variations, breeders could greatly influence the type of animal produced over the course

³¹ Darwin, *The Origin of Species*, 362.

³² Mark Twain, from a speech he gave in New York, on Nov. 20, 1900. In *Following the Equator* he states similarly that a ‘Classic’ is “a book which people praise and don’t read.”

³³ Darwin, *The Origin of Species*, 35.

of many generations. Darwin gives the example of the domestication of horses. He argues that over the course of history, man has selected swifter horses for breeding, and that given enough time, centuries or more, a sub-breed could turn into a distinct breed. He then asks, cannot “something analogous...apply in nature?”³⁴

What is this ‘something analogous’ that may apply in nature? In the second chapter, ‘Variation under Nature,’ he claims that just as variation exists in animals involved in domestic breeding, so variation exists in natural settings. So if variations can be selected for by humans, thereby shaping and perhaps creating distinct species, then so can the selective pressures of the natural world mold and create species. Darwin asks, “Can the principle of selection, which we have seen is so potent in the hands of man, apply in nature?”³⁵ One might ask how nature, lacking conscious intention, can choose or select which variations to breed. The significant difference between the two is that the selection of traits in domestic breeding is guided by conscious intention, whereas in natural selection it is a blind process. The argument itself seems to suggest that since a conscious mind is at work in the domestic breeding of animals, so must a conscious mind be at work behind the breeding of animals in nature. The very term ‘selection’ implies a conscious process, a selector doing the selecting. Darwin’s attributing selection to natural forces seems to personify them and posit a conscious process behind such selection, at the same time that he is denying the existence of such a conscious process. He attempts to skirt the issue by calling it “unconscious selection.”³⁶ Unconscious selection is a process similar to the workings of Adam Smith’s invisible hand, an

³⁴ Ibid., 98.

³⁵ Ibid., 74.

³⁶ Ibid., 38.

impersonal, non-conscious mechanism that makes transactions in the marketplace work out advantageously. Darwin states that “each new species is formed by having had some advantage in the struggle for life over other and preceding forms.”³⁷ Thus a variation is ‘selected’ for by nature if it increases the chances for the survival and for the reproductive success of the organism that possesses it. Despite the disanalogy between domestic and natural selection, Darwin states that the conclusion we can draw, based upon the analogy, is that “individual differences [in nature] ...afford materials for natural selection to accumulate, in the same manner as man can accumulate in any given direction individual differences in his domesticated productions.”³⁸

Darwin has thus described the process by which species originate as one of adaptation. The fit are those who are best adapted to their environment. They successfully compete for limited resources and are able to find mates, reproduce, and pass on their adapted variations to their offspring. Darwin summarizes natural selection in what is perhaps his most famous and oft quoted passage:

Owing to this struggle for life, any variation, however slight and from whatever cause proceeding, if it be in any degree profitable to an individual of any species, in its infinitely complex relations to other organic beings and to external nature, will tend to the preservation of that individual, and will generally be inherited by its offspring. The offspring, also, will thus have a better chance of surviving...I have called this principle, by which each slight variation, if useful, is preserved, by the term Natural Selection.³⁹

Nature selects and cultivates those variations which are beneficial to the survival of the organism in its particular niche, similar to the way that a breeder selects traits he seeks to breed. So in Darwin’s analogy, the domestic breeders are the primary analogue,

³⁷ Ibid., 269.

³⁸ Ibid., 47.

³⁹ Ibid., 60.

and the selective pressures of the natural world acting upon the organism are the secondary analogue. Because domestic animals are similar to wild animals in that they both show variations which can be either beneficial or injurious to them, and because these traits are inheritable in both domestic and natural settings, the process of artificial selection in domestic breeding is the analogue for the process of natural selection in nature.

Darwin did not strike upon the concept of natural selection until after he had returned to England in 1836. In 1838, after he had read the economist Thomas Malthus's *Essay on the Principles of Population* he was able to offer an adequate explanation of how such change is possible. Malthus was a doomsday economist, arguing that human populations grew exponentially while food supplies did not. Therefore populations are kept in check by competition for these resources. The fittest obtain resources needed for survival while the rest face famine, starvation, and eventually death. Darwin applied this view in a way Malthus had not, to other species. My view, he said, "is the doctrine of Malthus applied with manifold force to the whole animal and vegetable kingdoms."⁴⁰ He thus saw competition as the key to understanding evolution.

The extent to which Darwin's theory mirrors Malthus' theory can be easily seen in the following propositions which summarize his argument for evolution through natural selection:

1. Species produce offspring at a faster rate than food supplies and other resources can sustain them.
2. There is variation, a variety of non-shared traits, in each species.
3. Due to growing numbers, individuals must compete for limited resources.
4. Those individuals whose variations the environment favors obtain the needed resources and are more likely to reproduce and pass on the variation.

⁴⁰ Ibid., 62.

5. The environment determines which traits are beneficial for survival and reproduction and which are not.
6. Traits are inherited and passed on.
7. Over long periods of time, new species emerge from individuals with successful variations.
8. Geographic isolation can also give rise to the birth of a new species in response to the selective pressures of their unique location.⁴¹

Darwin supplements this general argument with a particular one. Darwin himself was a pigeon breeder and claimed to have owned at one time or another every different variety of pigeon. Of all the different varieties, he was “fully convinced that they all have descended... from the rock-pigeon” through selective breeding.⁴² Why the rock pigeon? Because they breed on rocks and are immune to predators. They therefore occupy a stable niche in the environment, a niche which is immune to predators, thus ensuring longevity. The inductive amplification here is from (a) descent with modification from a common ancestor or single variety (rock pigeon) to all the varieties of a single species (varieties of pigeons), to (b) “all the organic beings which have ever lived on this earth have descended from some one primordial form, into which life was first breathed.”⁴³

3. Pangenesis: Darwin’s Attempt to Explain the ‘Laws’ of Variation and Inheritance

The Scientific Revolution of the seventeenth and eighteenth centuries posited that the material world was governed by laws of motion and gravitation. Darwin, seeking the approval of the scientific community for the acceptance of his theory, aimed to bolster his case by discovering and revealing the ‘laws’ governing descent with modification. He

⁴¹ Jurmain, et al., *Introduction to Physical Anthropology*, pp. 32-33.

⁴² Darwin, *The Origin of Species*, 29.

⁴³ *Ibid.*, 380.

clearly sees his entire theory of descent with modification by means of natural selection as “one general law, leading to the advancement of all organic beings, namely, multiply, vary, let the strongest live and the weakest die.”⁴⁴ This passage suggests that evolution is a process involving “the survival of the fittest.” This is the famous phrase frequently associated with Darwinism today. Yet it was actually coined by Ernst Haeckel to characterize Darwinism. However, Darwin himself, in the fifth edition of the *Origin*, agrees that this characterization is “equally convenient” with his understanding of natural selection and begins to use it as well. The fit survive and the weak perish, Darwin clearly believes, because the “law of battle” reigns supreme in the natural world.⁴⁵

But when it comes to the actual ‘laws’ governing variation and inheritance, Darwin runs into problems. Natural selection is the “the preservation of favourable variations and the rejection of injurious variations.”⁴⁶ Darwin’s entire theory is based upon the existence of variations and the ability of beneficial ones to be inherited and passed on. But how do variations come about? And how are they transmitted through inheritance? Unless Darwin can explain why variations occur and how they operate, his entire theory appears mere speculation. Darwin frequently refers to the ‘laws’ governing variation and inheritance and the biological world. However, his theory of inheritance isn’t a law in the strict scientific sense, since it lacks the predictive power associated with scientific laws. In addition, in a related point, the laws of heredity are not scientific in that they are probabilistic and not deterministic, in that they are not of the form ‘All A are B.’ Darwin is correct in asserting that there are laws governing variation and

⁴⁴ Ibid., 200.

⁴⁵ Ibid., 80.

⁴⁶ Ibid., 75.

inheritance. But even if we can call a probabilistic statement with strict predictive power a law, there is still another problem. It is that Darwin is unable to state what these statistical laws are because the statistical techniques needed to analyze changing variability in populations had not been developed during Darwin's lifetime.⁴⁷ As a result, Darwin speculates a great deal in the *Origin*, doing the best he can with what he has, discussing the 'laws of variation' that natural selection acts upon, while at the same time remaining unable to state what these laws are. Basically he asserts that the processes that govern heredity are law-like, but his understanding of these laws is speculative and uncertain.

Since natural selection depends upon variation, and cannot proceed without it, unless Darwin can provide a full account of why variation occurs and what the laws governing it are, his theory is incomplete. For this reason, Darwin devotes chapter five of the *Origin* to the "Laws of Variation." His argument is based on the assumption that variation in species is a constant, that those variations selected by nature will be preserved just as they are in domestic breeding. But his main problem is that he cannot explain why these variations exist or how they are transmitted to offspring. Today it is difficult to read the *Origin* because it appears primitive and outdated. Reading it is similar to reading an 18th century medical treatise on how to treat infection when the author has no real understanding of bacteria or viruses. From a modern standpoint, the reader sees an author groping around in the dark for an answer that we know but he doesn't. One cannot help but feel that Darwin and the *Origin* are no longer important, that the scientific worldview of his day is primitive, blighted, and eclipsed by our modern

⁴⁷ Bowler, *The Non-Darwinian Revolution*, 110.

understanding of biology and molecular genetics. This admission of ignorance is repeatedly recognized in chapters 6-8 of the *Origin*, in which Darwin discusses the difficulties of his theory. Here he admits that “the laws governing inheritance are quite unknown,”⁴⁸ that “variability is governed by many unknown laws,”⁴⁹ and that “our ignorance of the laws of variation is profound.”⁵⁰ Therefore, he concludes, “we should be extremely cautious in inferring” what these laws might be.⁵¹

As a result, it is fair to ask, what led Darwin to infer that there are laws of variation? That there is variation is established by Darwin in the first two chapters of the *Origin*. There he establishes the ubiquity of variation amongst both domesticated and wild animals. Based on his observations of domesticated dogs and pigeons, for example, he states, “I cannot doubt that there has been an immense amount of inherited variation.”⁵² Today we know that variation is governed by genes, but Darwin had no understanding of genetics.

Darwin essentially posits a ‘black box’ to account for variation. He called this hypothetical explanatory model of heredity, based upon blending inheritance, ‘pangenesis.’ He speculates that inheritance is based on ‘gemmules,’ tiny hypothetical hereditary particles that transmit variations from parent to offspring, blending them. Gemmules circulate in our blood and migrate to reproductive cells where they are passed on to one’s offspring. In *The Descent of Man*, Darwin states: “by the aid of the hypothesis of pangenesis...every unit or cell of the body throws off gemmules or

⁴⁸ Darwin, *The Origin of Species*, 22.

⁴⁹ *Ibid.*, 44.

⁵⁰ *Ibid.*, 142, and on 165.

⁵¹ *Ibid.*, 147.

⁵² *Ibid.*, 26.

undeveloped atoms, which are transmitted to the offspring of both sexes.”⁵³ Offspring inherit the same amount of gemmules from both parents, thus blending or fusing them together through inheritance. For instance, if a child had one tall and one short parent, he will be a blend of both, hence of middle height. Darwin’s theory of heredity by pangenesis was not officially stated until 1868, but it was conceived of much earlier, and one sees hints of it in the *Origin*. In one passage, he discusses how much of one’s (as we would say) genetic material is passed on to descendants. He states that “after twelve generations, *the proportion of blood*, to use a common expression, of any one ancestor, is only 1 in 2048.”⁵⁴

Biologists rejected this theory for the obvious reason that variations would be lost through dilution. Fleeming Jenkin published a devastating review of the *Origin* in 1867, critiquing in particular Darwin’s theory of pangenesis. He demonstrated that blending did not work, that new variations would be diluted or swamped by continued interbreeding. For example, if a variation occurs whereby a person has a very high IQ, and he mates with someone with an average IQ, their child’s IQ will be somewhere in the middle. The obvious problem is that the high IQ variation will be ‘washed out’ as time goes on, as more and more descendants continue to mate with people of average intelligence. It would ultimately be lost and everyone will be of the same intelligence (and height, and skin color, and athletic ability, and so on).⁵⁵ Darwin’s theory of heredity by pangenesis seemed hopelessly flawed. It was even further discredited by August Weismann’s research in the 1880s. Weismann demonstrated that somatic cells cannot

⁵³ Charles Darwin, *The Descent of Man* (New York: Penguin Books, 2004), 264.

⁵⁴ Darwin, *The Origin of Species*, 137.

⁵⁵ Garland Allen, *Life Science in the Twentieth Century* (New York: John Wiley & Sons, Inc., 1975), 13, 45.

influence germ cells, thereby discrediting the inheritance of acquired traits.⁵⁶ Mendel later added to the argument against pangenesis when his experiments became known in 1900. They further demonstrated that blended inheritance was by no means a 'law' of heredity. Without today's understanding of genetics, Darwin's 'laws of inheritance,' is, by his own admission, confused and speculative.

4. *The Descent of Man* and Sexual Selection

Darwin would have been better off not discussing inheritance as he was ignorant of the way in which variations occur, and hence pangenesis was mere speculation. However, he could not avoid it as the inheritance of variations which made one better adapted was central to his theory. However, he did manage to avoid other topics which were also just as difficult to explain, among them the origin of life itself, the origin of the cosmos, and the origin of human beings. However, he implied at the end of the *Origin* that his theory could be applied to humans. Darwin was wise in stopping short of discussing human origins. While most naturalists accepted some form of evolution in the 1860's, most stopped short of claiming that it accounted for human origins, and instead argued that the higher faculties were a difference not in degree, but in kind, from the animals. Fellow naturalists of Darwin argued that the higher faculties of humans, such as morality and rationality, could only be accounted for by an act of divine creation.⁵⁷

⁵⁶ Mayr, *One Long Argument*, 121-2.

⁵⁷ Charles Darwin, *The Expression of the Emotions in Man and Animals*, introduction by Joe Cain (New York: Penguin Books, 2009), xiv-xxi.

It is against this compromise position that Darwin aimed his arguments in *The Descent of Man*, first published in 1871, in an attempt to demonstrate that humans descended from animals and no special creation by God was needed. In other words, human origins could be derived from the strictly natural process of natural selection acting upon random variations. While his argument is aimed against the divine origin of humans, this does not make Darwin a naturalist, as he left open the question as to whether or not God was the author of the principles governing these natural processes. His overall strategy is to show that animals are not the brutes we think they are, and they possess many of the same behaviors and capabilities that humans do, only in primitive form. He does so in an attempt to make descent from animals appear plausible. He compares and contrasts numerous species, telling anecdotes and stories that demonstrate that animals and insects are much more complex and intelligent creatures than we often give them credit for. He also tries to show that humans and animals share many homologous structures, both in our bones and our behavior.

In turning his sights on humans, his first task is to determine if humans constitute one species or several. In the *Origin* Darwin states that he looks upon the term ‘species’ as referring not to types or kinds, since species can change over time, but as merely names which apply to similarities among individuals.⁵⁸ In this he is following the Morphological Species Concept, which categorizes species on the basis of similar body structure. However, he also is aware that many naturalists use the ability to interbreed to categorize individuals (the Biological Species Concept). As a result, he asks whether the bodily differences between the races of man warrants classification as subspecies, or are

⁵⁸ Darwin, *The Origin of Species*, 52.

similar enough to make them all members of the same species. He also spends several pages in Ch. 7, 'The Races of Man,' discussing whether or not mulattoes or hybrids of different races are fertile or not, something which we no longer question, but in Darwin's time there were not many scientific studies on. He concludes that all the races appear able to interbreed with varying success, thus suggesting a single species rather than multiple ones. He ultimately sides with the monogenists, or those who believe all races share a common descent from a single origin, which he speculates as being Africa.⁵⁹ In doing so, he rejected polygenism, or the idea that races descended from different ancestral species of apes or stemmed from multiple origins in other locations than Africa. He also rejected Co-Adamism, the belief that the races are the result of separate divine creations of other humans at the same time as Adam.

Having opted for the unity of the human races as one distinct species, he is now left having to explain why racial differences exist. He begins by recognizing the fact that "Man differs conspicuously from all the other Primates in being almost naked."⁶⁰ Not only does this characteristic also provide support for a single species, since the similarity is universal, but it leads to a more interesting question as to why humans lack hair? What evolutionary advantage do humans obtain through natural selection in being hairless? One advantage natural selection bestows upon this trait is that it is easier to find and eliminate ticks and other parasites. It might be affected by the type of climate one lives in, as it is easier to cool the body with less hair in a hot environment.⁶¹ However, Darwin notices another reason for humans' lack of hair. He writes, "the view which seems to me

⁵⁹ Darwin, *The Descent of Man*, 196-203, 208.

⁶⁰ *Ibid.*, 36.

⁶¹ *Ibid.*, 50, 77, 84.

the most probable is that man, or rather woman, became divested of hair for ornamental purposes.”⁶² In other words, in our evolutionary history, women preferred men who lacked hair, and mated with them more often than their hairier counterparts, thus giving rise to less hairy offspring. Thus he would consider hairiness, or the lack thereof, a secondary sexual characteristic, and not just the result of natural selection. Similarly, he spends several pages discussing why beards are not found among some races of men, concluding that sexual selection must account for the difference.⁶³

It is in attempting to explain these racial differences that Darwin recognizes another mechanism at work in evolution apart from natural selection – which he calls ‘sexual selection.’ He realizes that sexual selection plays a role not only in human evolution, but also in the animal kingdom. He states, “I perhaps attributed too much to the action of natural selection or the survival of the fittest...I did not formerly consider sufficiently the existence of structures, which...are neither beneficial nor injurious and this I believe to be one of the greatest oversights.”⁶⁴ Natural selection favors those variations which confer a survival benefit upon the individual. But sexual selection favors secondary characteristics which may offer no survival benefit to the individual whatsoever, but are chosen for by members of the opposite sex for no other reason than that they find them appealing. The tail of a peacock is the most common example of a trait chosen through sexual selection, as the tail offers no survival value to the peacock, and, if anything, draws the attention of predators and hinders the peacock from eluding

⁶² Ibid., 78.

⁶³ Ibid., 622-626.

⁶⁴ Ibid., 81.

them. Natural selection alone would cull out such burdensome features, but because of sexual selection they are a favored trait.⁶⁵

Sexual selection can occur in two ways. The first is through female preference or choice. If natural selection is survival of the fittest, sexual selection is survival of the prettiest. Here the female prefers those males which are more aesthetically pleasing to them, such as the peahen preferring those peacocks with more elaborate tails. The second is by favoring those variations which give males an advantage over other males in the competition for mating rights with females. Large horns in ruminants may not necessarily be a trait that female ruminants prefer, but it does allow those males who have them to outcompete those who lack them. Sexual selection based on female choice is called 'intersexual selection.' Sexual selection based on competition among members of the same sex is called 'intrasexual selection.'⁶⁶ Species in which sexual selection plays a role may see large differences between male and female individuals. This is called sexual dimorphism. Walruses can weigh three times as much as the females, as large size amongst males is a factor in driving off rival males and protecting a harem (intrasexual selection). The brilliant plumage of male birds is preferred by females, perhaps because brilliant colors are aesthetically more pleasing to females, or stand as a sign of good health (intersexual selection).⁶⁷

Darwin even argues that the evolution by means of sexual selection may have played a role in the development of our mental, moral, and aesthetic values. Darwin argues that our higher mental faculties might have evolved through sexual selection in

⁶⁵ Ibid., 483-487.

⁶⁶ Mayr, *What Evolution Is*, 138.

⁶⁷ Ibid., 139-40.

that women preferred men who could write poetry, or use language, or show sympathy for others, or sing songs. He spends a great deal of time showing how these traits are displayed in a more primitive form in other animals, such as birds, apes, and dogs.

However, Darwin has been accused of anthropomorphism because he appears to attribute to animals and insects the ability to judge and choose mates on the basis of aesthetic qualities and choice. It might be reasonable to assert that human races have different aesthetic values and thus prefer different types of beauty in choosing sexual mates, but can the same be said for birds or insects?

While many of Darwin's conclusions in *The Descent of Man* are drawn from analogies between lower animals and humans (as sexual selection functions in the animals, so should it in humans), and therefore appear speculative, the findings of modern evolutionary anthropologists have provided support for them, particularly Darwin's account of human origins. Based upon morphological homologies in bodily structure between humans, apes and gorillas, Darwin speculated that humans most likely originated in Africa. He argues, "It is therefore probable that Africa was formerly inhabited by extinct apes closely allied to the gorilla and the chimpanzee; and as these two species are now man's nearest allies, it is somewhat more probable that our early progenitors lived on the African continent than elsewhere."⁶⁸

Numerous fossil finds since Darwin's time appear to have confirmed his hunch. The only known human fossil finds in Darwin's time were Neanderthal fossils found in 1856 in a German cave in the Neandertal valley. But it was the discovery of an *Australopithecus africanus* (meaning 'southern ape') skull by Raymond Dart in 1925 that

⁶⁸ Darwin, *The Descent of Man*, 182.

finally provided hard evidence for Darwin's speculation. This skull is over 500,000 years old, but further fossil finds established that the *australopithecine* line goes back over 2 million years. In the last million years, there have been at least four human lines: *Homo erectus*, who may have been the ancestor of *Homo heidelbergensis*, who is considered the ancestor of both *Homo neanderthalensis* and *Homo sapiens*.⁶⁹ Further fossil finds in the 1970's, like that of Lucy, a largely complete *Australopithecus afarensis* skeleton found in the Rift Valley in Ethiopia by Donald Johanson, dating back roughly 3.2 million years ago, provided additional support for the out of Africa hypothesis. The oldest fossil finds of a hominid ancestor that might have been bipedal, are those of an *Ardipithecus ramidus* skeleton found in Ethiopia, dating back 4.4 million years ago.

The addition of the term 'recent' to Darwin's out of Africa model (RAO, or recent African origin) is largely due to the mapping of the human genome and other genetic and DNA evidence like mitochondria. This first migration out of Africa was by members of the *Homo erectus* species, who expanded into Southern Asia around 1.75 million years ago, but died out about 173,000 years ago and were replaced by *Homo Sapiens*. It is now believed that all humans alive today descended from a small band of humans, perhaps as small as 150, who migrated out of Africa roughly 50-55,000 years ago.⁷⁰ Based upon DNA mapping of cell mitochondria, researchers believe that all humans today descend from 'Mitochondrial Eve,' who might have lived between 135,000 and 200,000 years ago in Africa.⁷¹ Similarly, all Y chromosomes in men can be traced back to a single male,

⁶⁹ Chris Stringer, *Lone Survivors, How We Came to be the Only Humans on Earth* (New York: St. Martin's Griffin, 2012), 22, 30-1.

⁷⁰ Nicholas Wade, *Before the Dawn, Recovering the Lost History of Our Ancestors* (New York: Penguin Press, 2006), 75-7.

⁷¹ Chris Stringer, *Lone Survivors* (New York: St. Martin's Griffin, 2012), 24, 180.

‘Adam,’ estimated to have lived between 80,000 to 142,000 years ago in central or northwestern Africa.⁷² These findings, mostly made in the last decade, have established the RAO model as the orthodox model of human origins.

5. The Eclipse of Darwin: Alternatives to Natural Selection as the Source of Species Origination

Darwin’s thought is frequently characterized as revolutionary. The phrase ‘the Darwinian revolution’ is bandied about, as if to simply record the obvious fact that Darwin completely changed the way we look at the world. Just as Copernicus effected a revolution in astronomy, and Newton one in physics, so Darwin did in biology. He challenged and overthrew a scientific paradigm of his age. However common this understanding of Darwin’s thought may be, it is mistaken. Many of Darwin’s insights and central ideas were not generally accepted until roughly 80 years after the publication of the *Origin*. That is when the modern evolutionary synthesis occurred. Only after that time might it be claimed that a scientific revolution in biology had occurred. The period prior to the modern evolutionary synthesis is therefore referred to by Peter Bowler as ‘the eclipse of Darwinism,’ and by Stephen Jay Gould as ‘the marginalization of Darwinism.’

Darwin was not the first person to advance the theory of evolution. He was simply the first to offer a serious explanation of how the process of evolution occurred, namely, by means of natural selection. In 1844, Robert Chambers published his *Vestiges of the Natural History of Creation*. He argued that organisms evolved in a linear, abrupt way similar to saltations, or sudden leaps or changes. However, he failed to specify a

⁷² Ibid., 181.

mechanism as to how this occurred, other than perhaps through divine intervention. The negative reaction of the scientific community to *Vestiges* impelled Darwin to carefully form his arguments and tighten his evidence for natural selection before going public. As a result, Darwin's book, unlike Chambers, had a much more positive reception.

However, while Darwin encountered relatively little difficulty in convincing others to accept the general concept of evolution, he had a much more difficult time convincing them that natural selection was the mechanism by which it occurs.

Even then, Darwin's argument for natural selection failed to convince everyone. While many of the anti-selectionists during the eclipse thought that natural selection occurred, they believed it played a minor role in evolution, serving a primarily negative function of eliminating the unfit (an "executioners role"). They believed natural selection was incapable of playing the positive role of producing variation and new species.⁷³ Even today, not all evolutionary biologists agree that natural selection is the sole process by which evolution occurs. In addition to sexual selection, genetic drift can also produce a change in the gene content of a population over time when some variations become more widespread than others through no other means than chance (rather than through the action of natural or sexual selection).⁷⁴ This is especially pronounced when a gene population becomes isolated and there are few founders, thereby limiting future generations to those variations which the founders possess. Gould calls this 'Founders drift.'⁷⁵

⁷³ Gould, *The Structure of Evolutionary Theory*, 14-5.

⁷⁴ Mayr, *One Long Argument*, 119, 180, 186.

⁷⁵ Gould, *The Structure of Evolutionary Theory*, 735-7.

But Darwin did not understand even the very basic facts about why species displayed variation because he had no understanding of DNA or genetics. It was not until Gregor Mendel's insights were combined with Darwin's, and a new understanding of genetics was added to the mix in the 1940s and 50s, that biologists effected what is called the modern evolutionary synthesis. In fact, without the ability to explain variation and inheritance, what exactly Darwin meant by 'evolution by means of natural selection' was not at all clear during the eclipse.

While a few biologists immediately adopted Darwin's view, many rejected it. Ironically, Darwin's chief defender, T.H. Huxley, nicknamed 'Darwin's bulldog,' did not accept natural selection as the driving force of evolution. Many evolutionists proposed alternative mechanisms. Theists, Essentialists, neo-Lamarckians, Geoffroyists, Orthogenesisists, and Saltationists all proposed alternative mechanisms, which will be discussed below. During the 1920s and 1930s virtually all major works on evolution were antiselectionist.⁷⁶ One biology textbook has argued that Darwin basically "went too far, too fast."⁷⁷ Darwin was forced to speculate as to how variations were inheritable. Although Mendel was conducting his work on genetics with pea plants at the time that Darwin published the *Origin*, the importance of Mendel's work went unrecognized for close to 50 years. Of all the alternative mechanisms proposed to account for variation during the eclipse, Vernon Kellogg in 1907 identified three as the most significant: Lamarckism, orthogenesis, and saltationism.⁷⁸ All three affirm the negative role natural selection plays, but deny that it is capable of playing any positive role beyond the

⁷⁶ Ernst Mayr and William B. Provine, eds., *The Evolutionary Synthesis: Perspectives on the Unification of Biology* (Cambridge: Harvard University Press, 1998), 3.

⁷⁷ Nancy Pruitt and Larry Underwood, *BioInquiry* (Hoboken, NJ: John Wiley & Sons, 2006), 60.

⁷⁸ Gould, *The Structure of Evolutionary Thought*, 164.

microevolutionary scale. They argue that small microvariations, while real, do not constitute enough of a change to be the source of new species on the macro-level, even when accumulated through natural selection.

5.1 Lamarckism

During the eclipse many believed that it was Lamarck (1744-1829), not Darwin, who was the true father of evolution. His work represented the first comprehensive attempt to prove that all living things descend from primitive ancestors.⁷⁹ His central belief is in the “inheritance of acquired traits,” i.e., in the view that a species could change to adapt to its environment, and pass on an acquired trait to its young. The example commonly used to illustrate this point is the giraffe’s long neck. In stretching its neck muscles to reach higher leaves on trees, a giraffe naturally extends its neck, and in the process changes itself into a giraffe with a longer neck. Similarly, a weight lifter will change his body form through exercise, and pass on this change to his offspring. Today we know this view is false, but in Darwin’s time it was not known to be so. Prior to the discovery of melanin, in Darwin’s time it was believed that people in Africa had dark skin color because they had inherited ever-darkening tans of their ancestors.⁸⁰ If this were true, the children of pirates would be born with more scars on their faces than the children of non-pirates, and Jewish children would be born circumcised. But they are not.

⁷⁹ Peter J. Bowler, *Evolution, the History of an Idea* (Berkeley, CA: University of California Press, 2003), 86.

⁸⁰ Ernst Mayr, *What Evolution Is* (New York: Basic Books, 2001), 81.

One can see Darwin wrestling with this problem in the *Origin*. What is the effect of a biological change, due, for example, to muscle use (or disuse)? Can traits acquired through use and disuse be inherited? Darwin felt that birds living in water grow webbed feet, whereas domesticated waterfowl will have stronger legs based on use and disuse. Could variations, such as dwarf plants on an alpine summit, simply be the result of the external environment?⁸¹ Darwin's theory of heredity by pangenesis is open to the inclusion of the Lamarckian notion of the inheritance of acquired traits. Because the gemmules circulate through the blood, they can be affected by bodily changes. Gemmules that have been affected can make their way to the reproductive organs where they can be transmitted to offspring. As a result, bodily changes could be inherited by future generations. This makes Darwin, like Lamarck, an adherent of soft inheritance. Soft inheritance holds that acquired characteristics can be inherited and blended in offspring, whereas hard inheritance holds that the traits of offspring are unaffected by environment. Darwin incorrectly sided with Lamarck and soft inheritance on this issue.

Ernst Mayr believes that August Weismann (1834-1914) is the foremost evolutionist, other than Darwin, of the nineteenth century. Weismann began his career believing in soft inheritance. But in an attempt to determine whether acquired traits were inherited, Weismann cut off the tails of 901 mice over the course of 19 successive generations. He failed to obtain a single mouse without a full-length tail. Mayr thus credits Weismann with the refutation of soft inheritance, thereby paving the way for Mendelian genetics and hard inheritance.

⁸¹ Darwin, *The Origin of Species*, 46.

But what made Weismann's conversion final was his observation and that of cytologists, that future germ cells "are set aside after the first mitotic divisions of the developing embryo and no longer have any physiological connection with the body cells."⁸² The later distinction between genotype and phenotype is analogous to Weismann's division between germ plasm and soma, or bodily cells. The genotype will later be identified with an organism's genetic makeup, which is relatively immune from the environment (except from things like radiation, which can cause mutations), while the phenotype is the individual's physical character and is the result of interaction between the environment and the genotype.⁸³ Mayr holds that the publication of Weismann's essay, *On Heredity*, in 1883, marks the beginning of Neo-Darwinism, i.e., Darwinism without the inheritance of acquired characteristics.⁸⁴

5.2 Orthogenesis

Whereas Lamarck thought that inheritable traits were influenced by external factors, others saw internal processes at work. Those who held to Orthogenesis believed that there was an internal direction which guided and shaped the evolutionary process. The term itself literally means "straight (line) generation."⁸⁵ Whereas Darwin believed evolution is based on the selective pressures of the environment shaping the random variations that organisms display, adherents to orthogenesis believed the process was guided and directed, rather than random.⁸⁶ Orthogenesis is associated with embryology

⁸² Ibid., 121.

⁸³ Peter J. Bowler, *The Mendelian Revolution, The Emergence of Hereditarian Concepts in Modern Science and Society* (Baltimore: Johns Hopkins University Press, 1989), 123.

⁸⁴ Mayr, *One Long Argument*, 110.

⁸⁵ Gould, *The Structure of Evolutionary Theory*, 352.

⁸⁶ Bowler, *Evolution, The History of the Idea*, 247.

and homologous structures. It looks for patterns in the development of an embryo and in the structures of all living things in order to determine where such development is naturally headed. Orthogenesis is based upon Haeckel's biogenetic law of recapitulation, which is that the developing embryo ontogeny recapitulates phylogeny, meaning that as the embryo develops, it adds new, more complex structures onto previous ontological structures.⁸⁷ Each embryo has the potential to take its development to the next level of complexity through a kind of quantum leap, by which it evolves along an internal channel into a higher form on the chain of Being. Thus as species develop and work their way 'up' the taxonomic system, they are driven from one type to the next, from less ordered to more ordered, by an "intrinsic finalistic principle" of improvement.

Orthogenesis appears teleological because it is progressive; it claims that organisms evolve in an orderly, purpose-driven direction. Although the major orthogenesisists, Eimer, Hyatt, and Whitman, claimed to reject teleology, orthogenesis was appropriated by those who sought to maintain "divine superintendence of the evolutionary process."⁸⁸ Orthogenesis is ripe for this interpretation because it is directional. Species advance upward, eventually arriving at human beings. Darwin, on the other hand, claims that species branch out, many traveling down dead-end streets that lead nowhere. However, the orthogenesisists are similar to Darwin in that they saw the pre-determined internal channels or lines along which organisms evolve as having physical causes, not supernatural ones. But because they had no concrete evidence to support their claims, other than the pseudo-science of embryology, these 'internal channels' remained vague and elusive, although no more so than Aristotle's concept of a

⁸⁷ Gould, *The Structure of Evolutionary Theory*, 353.

⁸⁸ Bowler, *The Non-Darwinian Revolution*, 92.

final cause. As a result, orthogenesis resembled traditional teleology enough to give rise to ‘theistic evolutionism,’ for orthogenesis seemed to demonstrate that the existence of rational beings like humans is the natural outcome or final goal of evolutionary history. Orthogenesis met a generally warm reception because it incorporates reason as the outcome of the evolutionary process, which is a cornerstone of the anthropocentric worldview, and a core belief of the pre-Darwinian worldview. In fact, Mayr argues that it was Kant’s acceptance of teleology that influenced German evolutionists along the lines of orthogenetic thought.⁸⁹ Since Darwin’s denial of teleology and directionality made the appearance of man a random event that need not have occurred, many evolutionists as a result rejected his principle of natural selection.

5.3. Saltationism

If anyone today were asked what the evidence for evolution is, he or she would probably point to the fossil record. The fossil record seems to present the most tangible evidence for the evolution of species over time. Why then does Darwin not discuss the fossil record until chapters nine and ten of the *Origin*? The answer is that the fossil record in Darwin’s lifetime was very incomplete. Darwin himself states that “the geological record is extremely imperfect; that only a small portion of the globe has been explored with care; that only certain classes of organic beings have been largely preserved in a fossil state.”⁹⁰ In Darwin’s time, the most ancient human fossil known was a Neanderthal skull discovered in Germany in 1856. At that time, it was viewed as a

⁸⁹ Mayr, *What Evolution Is*, 82, 288.

⁹⁰ Darwin, *The Origin of Species*, 273.

“deformed or degenerate example of a modern human.”⁹¹ In addition, there was no radioactive carbon dating at the time to determine its age. So an appeal to the fossil record might have raised more problems than it solved for Darwin’s theory. Questions which might have been asked include: Why has no one discovered any fossils for the transitional organisms Darwin claims once existed? Why is there a sudden appearance of a great many fossils in one period, the Cambrian explosion, but no fossils from the prior period (no pre-Cambrian fossils)?

The fact that the fossil record seems to suggest the sudden appearance of life during Cambrian times might itself suggest that life appeared suddenly all at once, rather than gradually, as Darwin maintains. In addition, the fossil record is disjointed, with gaps rather than continuity: older life forms suddenly disappear, and are quickly replaced by newer ones. These facts seem to suggest that evolution proceeds abruptly, with sudden changes, or ‘saltations’ (from the Latin word ‘saltus,’ or leap). However, saltations appear to violate one of the ‘laws’ that Darwin claims governs evolution. According to Darwin, organisms evolve gradually through the accumulation of minute changes. There are no abrupt or dramatic changes. Darwin calls this “the canon of ‘Natura non facit saltum,’” a doctrine adhered to by Leibniz and Linnaeus that means that nature makes no leaps, no jumps, no saltations.⁹² This is perhaps the reason that Darwin does not begin his arguments for evolution in the *Origin* with a discussion of the fossil record. In fact, Darwin himself notes how difficult it is for an invertebrate to be turned into a fossil.

⁹¹ Donald C. Johanson and Maitland A. Edey, *Blueprints, Solving the Mystery of Evolution* (Boston: Little, Brown and Co., 1989), 97.

⁹² Darwin, *The Origin of Species*, 175.

To counter the possible evidence that the fossil record might provide for saltationism, Darwin repeats, in a mantra-like manner, that the “process of modification must be extremely slow.”⁹³ Saltationism asserts that species make sudden transitions from one kind or type to another. Darwin asserts the accumulation of small, gradual changes via natural selection. Such a theory requires an old earth, not a young earth. Darwin here extends Lyell’s uniformitarianism to the biological world. Change is gradual; nature proceeds through small variations over long periods of time. These small changes eventually result in big changes. He repeats this point in many places:

I do believe that natural selection will always act very slowly, often only at long intervals of time, and generally on only a very few of the inhabitants of the same region at the same time.⁹⁴

Natural selection can act only by taking advantage of slight successive variations; she can never take a leap, but must advance by the shortest and slowest steps.⁹⁵

As natural selection acts solely by accumulating slight, successive, favourable variations, it can produce no great or sudden modification; it can act only by very short and slow steps.⁹⁶

However, the physicist William Thomson (the later Lord Kelvin) argued in 1868 that the age of the earth was less than 100 million years. He reached this conclusion by using the principles of thermodynamics to calculate that it would not take longer than 100 million years for a body the size of the earth to cool down from a molten state. Darwin thought that his theory required a much greater length of time than this, but he had no way to counter the physicist’s arguments. He simply felt that Kelvin was wrong.⁹⁷ In the

⁹³ Ibid., 275.

⁹⁴ Ibid., 95.

⁹⁵ Ibid., 163.

⁹⁶ Ibid., 371.

⁹⁷ Bowler, *Evolution, The History of an Idea*, 235.

end, Darwin proved correct, because radioactivity provides a source of heat that Kelvin was unaware of. At the time, however, Kelvin's arguments, along with Fleeming Jenkin's demonstration in 1867 that pangenesis does not work, drove people away from Darwin's theory and into the arms of the saltationists. The virtue of saltationism is that it allows for quick sudden leaps of the type found in the fossil record, and these sudden leaps could be made within Kelvin's time frame. Better still for saltationism, Mendel's laws of inheritance later paved the way for the discovery of modern genetics. Subsequent saltationists saw genetic mutations as the basis of these jumps. The evidence seemed to suggest that nature does indeed make leaps.

The fortunes of saltationism rose as those of the Lamarckians declined.

Saltationism is almost synonymous with a belief in macro-level genetic mutations.

Lamarckism seemed a refuted theory after Weismann's experiments in the 1880s proved fatal to soft inheritance, and hard inheritance appeared to be proven by the rediscovery of Mendel's laws in 1900. The person most responsible for popularizing saltationism was also one of the rediscoverers of Mendel's 1865 paper, Hugo de Vries (the other two were Carl Correns and Erich Seysenegg). De Vries believed that large scale mutations effected jumps in evolution, jumps that produced new species. Thus saltations occur through genetic mutation at the macro-level. Small mutations that accumulated over time on the micro-level could result in variation but were not sufficient to produce complex organs such as the eye. The appearance of such a complex organ on the biological scene necessitated complex systems coming into being all at once. De Vries is also partly responsible for coining the term 'gene' to describe the hereditary material that mutates. He rejected Darwin's theory of pangenesis, according to which gemmules are the cells

that migrate from somatic to germ cells, thus enabling acquired characteristics to be inherited. Instead, DeVries postulated cellular units of heredity, but denied they were able to partake in intercellular movement. To avoid confusion with Darwin's units, he called his units 'pangenes,' which Johannsen later shortened to 'genes.'⁹⁸

6. The Rediscovery of Mendel

It is commonly held that Darwinism was made complete by the discovery of modern genetics. It is assumed that Darwin provided most of the components of evolutionary theory, and the missing components were obtained when Mendel's laws of inheritance were rediscovered in the spring of 1900. This is incorrect. Darwinism technically refers to descent through modification primarily by means of natural selection. Darwin sees adaptation or fitness as resulting from environmental pressures selecting which variations are beneficial or injurious and rewarding the former with survival and reproduction, while consigning the latter to the dust heap of history. Darwin is adept at explaining how natural selection occurs, but fails to provide an adequate account of how or why variation occurs and how variations are inherited. He proposes the theory of heredity by pangenesis, or blended inheritance, to explain how variations are passed on to offspring. But as noted above, this theory is a 'black box,' a device needed to perform a certain empirically verifiable function, but whose inner workings are unknown.

⁹⁸ Gould, *The Structure of Evolutionary Theory*. 422-4.

It was assumed, at least by Darwin, that once the ‘black box’ of variation and inheritance was opened up and its operations revealed, that the needed pieces of Darwin’s puzzle would be supplied and the scientific revolution complete. But this is not what happened. Mendel did not really open up the black box of genetics and reveal how it works. He merely discovered various patterns of inheritance. For his discovery, Mendel has been called the ‘prophet’ or ‘pioneer’ of genetics. But this too is to grant more to Mendel’s discovery than he stated, since Mendel knew nothing of genes, chromosomes, or DNA. He simply ascribed inherited traits as ‘units’ or ‘factors’ which were passed on unchanged to the next generation.⁹⁹ It could be argued that Mendel’s ‘units’ were just another ‘black box’ left to be opened by later scientists.

Mendel began experimenting with the common pea plant *Pisum sativum* at roughly the same time that Darwin was writing the *Origin*. He published his results in 1866, but they were not noticed until 1900. According to Darwin’s theory, if pea plants flowers come in two colors, white and purple, cross breeding the white with the purple flowered plant would result in an intermediate color, such as mauve. However, this does not happen, as Mendel demonstrated. Mendel cross-pollinated purebred pea plants that exhibited seven different traits which were passed consistently onto their offspring: flower color (purple or white), flower position (axil or terminal), stem length (long or short), seed shape (smooth or wrinkled), seed color (yellow or green), pod shape (inflated or constricted), and pod color (yellow or green).¹⁰⁰

⁹⁹ Bowler, *Mendelian Revolution*, 94-5.

¹⁰⁰ Nancy L. Pruitt and Larry S. Underwood, *BioInquiry, Making Connections in Biology* (Hoboken, NJ: John Wiley & Sons, Inc., 2006), 63-7.

When Mendel cross-pollinated pea plants which are heterozygous rather than homozygous, i.e., having two different rather than identical alleles for a given gene, he discovered their offspring inherit their traits in a quantifiably predictable way. For instance, when Mendel cross bred a tall plant with a short plant, he determined that the first generation would all exhibit the dominant characteristic, in this case, they would all be tall. But in the second generation he found that for every three plants which demonstrated the dominant trait, one would exhibit the recessive trait. So for every three tall plants, he would get one short one. This 3:1 ratio not only applies to pea plants, but to inheritance across the board; it is a universal law of inheritance. As a result, it became clear to Mendel that hereditary units are not blended. Rather, each parent contributes his or her own hereditary units to the next generation, which may not show up until the second generation.

Later geneticists would discover plants are heterozygous because they have two different rather than identical alleles for a given gene. Each parent contributes his or her own allele, or gene, for each trait, which has been derived from either one of their parents during sex cell formation, or meiosis.¹⁰¹ If a gene is heterozygous, the gene which is not expressed can still appear in future generations. This led to the important discovery that all living things which reproduce sexually are actually more genetically diverse (their genotype) than they outwardly physically appear (phenotype).

Mendel's principles were the 'laws of inheritance' that Darwin had been seeking. But instead of these principles establishing the truth of Darwinism, they were actually used against natural selection and in support of 'saltationism.' Saltationists believed that

¹⁰¹ Neil Campbell, Jane Reece, and Eric Simon, *Essential Biology with Physiology* (San Francisco, CA: Pearson Education, 2004), 147.

genetic mutations can be large enough to result in an entirely different type of creature, a new species. Even Darwin, despite his gradualism, seems open, at times, to large, sudden changes. In some passages in the *Origin*, Darwin speculates that variation could produce “monstrosities,” and all it would take is one such “hopeful monster,” to become the father of an entirely new species.¹⁰² However, Darwin’s deeper adherence to the “canon of ‘Natura non facit saltum,’” that ‘nature does not make leaps’ – weighs heavily against this. In the first chapter of the *Origin* Darwin admits that abrupt changes occur, there are ‘monstrosities,’ what we consider today large scale genetic mutations, but he believes they are selected against, and so die off. If, however, they are not selected against, as Saltationists assert sometimes occur, then they give rise to entirely new species. In that case, natural selection and the pressures of the environment acting on small mutations is not needed for the appearance of new species.

7. The Modern Evolutionary Synthesis

As a result of these considerations, it is reasonable to conclude that the Darwinian ‘revolution’ was not a revolution in his day, or for a good time thereafter. Darwinism is revolutionary in that it served to cement consensus among scientists in favor of evolution, but it was not revolutionary in that it failed to make an adequate case for natural selection. Nor can one argue that Mendel’s findings completed the Darwinian revolution. As noted, Mendelian genetics was not immediately seen as compatible with natural selection. Rather, the actual wedding of Mendelian genetics with Darwin’s principle of

¹⁰² Darwin, *The Origin of Species*, 350.

natural selection took another 30 or more years. Only then can one truly say that a revolution had occurred. This revolution is known as ‘the modern evolutionary synthesis.’ It takes its name from Julian Huxley’s 1942 book, *Evolution, The Modern Synthesis*. Stephen Jay Gould sees the synthesis as integrating two things together: Mendelian genetics and Darwinism. This synthesis links all the various subdisciplines of biology together.¹⁰³

As stated above, pre-Darwinian thought was both typological and essentialist. In accord with the Western monotheistic tradition, each species was created by a divine creator with a specific essence that defined that species. Genesis 1:11 states that on the third day “God said, ‘Let the land produce vegetation; seed-bearing plants and trees on the land that bear fruit with seed in it, according to their various kinds.’ And it was so.” The word ‘kind’ is typological, i.e., it refers to a specific kind or type of plant. Aristotle’s thought is also typological but it is secular, arguing for a static rather than a created universe. Species are not created, but are eternal, each having a different substantial essence. They are also fixed and cannot change, thus precluding the possibility of evolution. Saltationists accept evolution, but in a way that still reflects typological thinking. One reason the modern evolutionary synthesis is revolutionary is that it rejects all typological and essentialist thought in favor of anti-essentialism.

Why is the modern evolutionary synthesis anti-essentialist? Darwin denied that species are fixed, and argued that they change and evolve if the pressures of natural selection act upon variations within a population. This is called Population Variation. Mayr argues that Darwin’s “basic insight was that the living world consists not of

¹⁰³ Gould, *The Structure of Evolutionary Theory*, 504.

invariable essences (Platonic classes), but of highly variable populations.”¹⁰⁴ What the source of these variations was and how they are passed on to offspring were questions that had to wait for the development of modern genetics and molecular biology for answers. Once those sciences were developed and combined with Darwinism, the science of population genetics was born. But this was roughly 80 years after the publication of the *Origin*. According to population genetics, each individual is genetically unique; each individual is not only unlike members of all other species, but also unlike members of their own species.¹⁰⁵ Every generation of a population contains a great deal of genetic variation, but only some of it is passed on to the next generation, because of natural selection. Only those genetic variations which are best adapted survive and get passed on.

However, if one of Darwin’s fundamental insights is that a species is not a “fixed morphological type but a population of diverse individuals,” there is a problem.¹⁰⁶ Darwin admits in the *Origin* that one of the most difficult tasks facing a naturalist is learning to distinguish one species from another, as well as all the various varieties within a species. In order to categorize individuals according to their species, doesn’t this assume an essentialist metaphysic, one that allows for distinctions to be made? The answer is no, for the simple reason that Darwin believed species change and undergo a process of transmutation from one form to another. Still, the problem remains: what constitutes a species if it has no essence? A new definition of species, one that is not

¹⁰⁴ Mayr, *What Evolution Is*, 84.

¹⁰⁵ *Ibid.*, 75.

¹⁰⁶ Bowler., *The Non-Darwinian Revolution*, 107.

typological, is needed. And Darwin, knowing nothing about genetic make-up, or DNA, cannot define a species in these terms.

His own definition of species is evasive. He states, “I look at the term species, as one arbitrarily given for the sake of convenience to a set of individuals closely resembling each other.”¹⁰⁷ What this passage makes certain is that Darwin is not an essentialist, or typologist. However, his concept of a species is not the modern biological definition either. If anything, Darwin appears to be a nominalist, holding that species are just names categorizing similarities among individuals. Ultimately, Darwin felt the issue was best left up to the taxonomists to determine the criteria by which one distinguishes between them. But in the closing pages of the *Origin* he makes it clear that the lack of immutability or permanence in species has undermined essentialism. “In short, we shall have to treat species in the same manner as those naturalists treat genera, who admit that genera are merely artificial combinations made for convenience. This may not be a cheering prospect; but we shall at least be freed from the vain search for the undiscovered and undiscoverable essence of the term species.”¹⁰⁸ Darwin’s nominalism therefore left him and future zoologists and botanists who wished to follow him, in a bind as to how to classify specimens.

What, on the other hand, is the modern definition of species? It is essentially provided by the modern evolutionary synthesis. Ernst Mayr, one of the architects of the synthesis, faced this difficulty when he was in New Guinea as a young ornithologist in the 1920s trying to classify the various species of birds there. In 1942 he came up with what is called the ‘biological species concept’ that defines a species as a group of

¹⁰⁷ Darwin, *The Origin of Species*, 52.

¹⁰⁸ *Ibid.*, 381.

interbreeding populations. This now seems obvious, because we now know that only organisms which are genetically similar are capable of interbreeding. But prior to a proper understanding of how genes and chromosomes recombine during sexual reproduction, this was not obvious. This is not to say, however, that this definition is itself definitive, as several closely related mammal species are capable of interbreeding, such as wolves and coyotes, mules and horses, lions and tigers, chimps and bonobos, as well as some monkeys, and even *Homo sapiens* and Neanderthals.¹⁰⁹

The modern synthesis of evolutionary theory with genetics occurred over a twelve year period, from 1936-1947. During that period, population genetics demonstrated that Mendelian genetics were consistent with natural selection. This demonstration was long in coming because it required understanding the mathematics of population geneticists and integrating it with the theories of the evolutionary biologists. Several notable figures who paved the way for the synthesis were Fisher, Haldane, and Wright. Their work was highly mathematical and at the time too difficult for the field naturalist to understand. But Theodosius Dobzhansky successfully bridged the gap between the field naturalists and population geneticists and effected the synthesis. Consensus among major scientists in their various fields soon resulted, consensus that natural selection is indeed the main mechanism of evolutionary change and acts upon populations of genetically diverse organisms. United by the synthesis were many subfields of biology, including genetics, cytology, botany, paleontology, embryology, systematics, morphology, and in due course, molecular biology.¹¹⁰

¹⁰⁹ Stringer, *Lone Survivors*, 34.

¹¹⁰ Mayr and Provine, *The Evolutionary Synthesis*, 1.

The modern synthesis is a true revolution in that it constitutes a paradigm shift which has achieved widespread consensus and set the agenda for ‘puzzle solving’ within ‘normal science.’ Evolutionary biology is not Darwinism. It uses a different conceptual apparatus than Darwin’s, employs the terminology of population genetics, and draws upon the findings of many fields. With the discovery of DNA in 1953, an understanding of recombination became possible. Recombination explains variation in a population due to the presence of multiple alleles of a gene. The distinction between genotypes and phenotypes is another important distinction for modern evolutionists not found in Darwin. It is, in fact, incompatible with Darwinism strictly speaking. Darwin attributed far too important a role to the environment and the phenotype. A proper understanding of how phenotypes and genotypes interact finally enabled biologists to explain the mechanism of inheritance. Such an understanding shows that evolution depends upon both genetic mutations and the selective pressures of the environment. Evolution cannot be adequately explained solely in terms of either one in isolation from the other. Thus the modern synthesis sees evolution as a two-stage process: the production of variations through genetically inherited differences, which are then subject to natural selection. Natural selection thus has an effect upon an individual’s abilities to reproduce successfully and pass on inherited traits.¹¹¹ The modern synthesis also recognizes mechanisms of evolution other than natural selection, such as “mutation, migration, random genetic drift, recombination, linkage, inbreeding, as well as others.”¹¹² To the extent that the modern evolutionary synthesis considers all of these, or some possible

¹¹¹ Jurmaine, et al., *Introduction to Physical Anthropology*, 88.

¹¹² Elliott Sober, *Evidence and Evolution, The Logic Behind the Science* (Cambridge: Cambridge University Press, 2008), 190.

combination of them, but not just natural selection by itself, to be the engine driving evolution, it also is not strictly Darwinian.

CHAPTER FOUR –
THEISM: TO BE A THEIST IS TO BE COMMITTED TO WHAT?

The Otherworld is not a myth, but a reality, and in all ages there have been souls who have been willing to brave the great adventure, and to risk all for the chance of bringing back with them some assurance of the future life.¹ – Jessie L. Weston

The fool says in his heart, ‘there is no God.’ – Psalm 14:1

A man can no more diminish God’s glory by refusing to worship Him than a lunatic can put out the sun by scribbling the word, ‘darkness’ on the walls of his cell.² – C. S. Lewis

If you board the wrong train, it is no use running along the corridor in the other direction.³ – Dietrich Bonhoeffer

The heart has its reasons which reason knows nothing of... It is the heart which experiences God, and not the reason. This, then, is faith; God felt by the heart, not by reason.⁴ – Blaise Pascal

Another source of conviction in the existence of God, connected with reason... follows from the extreme difficulty or rather impossibility of conceiving this immense and wonderful universe, including man with his capability of looking far backwards and far into futurity, as the result of blind chance or necessity. When thus reflecting I feel compelled to look to a First Cause having an intelligent mind in some degree analogous to that of man; and I deserve to be called a Theist.⁵ – Darwin

¹ Jessie L. Weston, *From Ritual to Romance* (New York: Peter Smith, 1941), 175.

² C.S. Lewis, *The Problem of Pain* (New York: HarperCollins Publishers, 1996), 46-47.

³ Eric Metaxas, *Bonhoeffer: Pastor, Martyr, Prophet, Spy* (Nashville: Nelson Books, 2010), 187.

⁴ Blaise Pascal, *Pensees and Other Writings*, trans. by Honor Levi (Oxford: Oxford University Press, 1995), 157-8.

⁵ Charles Darwin, *The Autobiography of Charles Darwin*, ed. by Nora Barlow (New York: W.W. Norton & Co., 1993), 92-93.

1. What is Theism?

The defining characteristic of theism is belief in a personal god or gods who transcend the universe yet in some way are still immanent within it.⁶ As transcendent, the divine is beyond the grasp of any science which seeks knowledge of the material universe. However, because God is active in the universe, He is not entirely unknowable. A theistic godhead may be said to be knowable through intuition, reason, personal experience in the form of divine revelation or mystical states, or on the basis of morality. Monotheism is the belief that there is only one God. Classical theism attributes certain characteristics to God, including being immutable, eternal, omnipotent, benevolent, and omniscient, the Creator and sustainer of the universe, and personal. Open theists claim that God is open to prayers and human decision-making. Some argue that in order to allow for human free will, an open theist must qualify some of the traditional characteristics of God, such as omniscience and omnipotence.

There are many types of theism in addition to the Western monotheistic tradition, such as panentheism, polytheism, henotheism, and ditheism. Pantheism, the view that god and the universe are one and the same, might be an attractive alternative because it opens up the possibility that much can be known about God, since science and theology are basically the same discipline, with the same object of study. Deism too might be an attractive possibility because it holds that God is the creator and first cause of the universe, and might have set the universe in motion to evolve according to the laws of nature.⁷ But it is a central tenet of Western theism that God hears prayers and

⁶ Peter A. Angeles, *Dictionary of Philosophy*, (New York: Harper & Row Publishers, 1981), s.v. 'theism.'

⁷ *Ibid.*, s.v. "deism."

supplications, and acts in response to these, and this agency is contrary to the remote, aloof deity of deism.

But it is the central tenets of the Western monotheistic tradition that the New Atheists claim are threatened by the findings of evolutionary theory and modern science. Hence, the scope of this study will be limited to Western monotheism. Among the theist beliefs which will need to be discussed are the following: God created the universe *ex nihilo*. Human beings are a special creation of God in that they are endowed with spiritual and immortal souls that are made in God's image. Human beings fell into sin and as a consequence disrupted their relationship with God. God is a personal being who invites worship and hears prayers and petitions and is concerned about us. God intervenes in history on our behalf. The record of God's self-revelation is found in scripture.⁸ But most important of all is the claim that God exists. Later chapters will determine if these claims are consistent with either evolution and/or naturalism.

2. The Attributes of a Theistic God

If there is a God, how do we know what God is like? On what grounds can one argue that the qualities attributed to the Western theistic vision of God are preferable to those offered by other traditions? As Richard Dawkins notes, most theists today are atheists about former theistic gods like Baal, Thor, Wotan, Poseidon, and Apollo.⁹ In what way can one say that belief in the God of Western monotheism is, or ought to be,

⁸ James Herrick, *The Making of the New Spirituality* (Downers Grove: InterVarsity Press, 2003), 32-3.

⁹ Richard Dawkins, *A Devil's Chaplain* (New York: Houghton Mifflin Co., 2003), 150. Dawkins states: "We are all atheists about most of the gods that humanity has ever believed in. Some of us just go one god further."

warranted, while belief in other theistic deities is not? Is there any objective reason as to why one should prefer one over the other? Is there any way to substantiate the theistic claim that the fundamental characteristics of God are omnipotence, omniscience, and benevolence? Can one claim to ‘know’ that God is omnipotent, omniscient and benevolent, or are these simply dogmatic assertions one must take on faith? Or can one use reason to work backwards, detective-like, from the effect to the cause, from the evidence or sensible clues to God’s having these attributes? If not, does knowledge of them lie in revelation? Are they rationally consistent with one another? Can they be known with certainty, deductively, or only inductively, i.e., based on statistical probability? Or can one reason abductively that a theistic God is the best explanation for the existence of the world, its order, human minds, moral values, human consciousness, free will, and religious experience?

The Western theistic tradition affirms the following characteristics as central to theism: “the view according to which there is a God who is the creator of the physical world and works actively in it to bring about his purposes as well as being omnipotent, omniscient, eternal (or timeless) and morally perfect.”¹⁰ These characteristics are derived from a wide variety of sources, among them natural theology, divine revelation, personal experience, sense data, and reasoning. God is said to be a personal, spiritual being much as human beings are. By personal, we mean that God is a subject, who has a conscious will, with basic powers that allow Him to act intentionally in order to freely achieve purposes. God is someone who has beliefs just as we do, but God knows all and

¹⁰ Aku Visala, *Naturalism, Theism, and the Cognitive Study of Religion: Religion Explained?* (Surrey: Ashgate Publishing Ltd., 2011), 13.

only truths.¹¹ As a person, God has the ability to communicate and can hear prayers, which an impersonal Godhead does not. One could claim that the fundamental difference between a theist and a naturalist is that the naturalist sees ultimate reality as an ‘It,’ while a theist considers ultimate reality to be a ‘Thou.’ As Martin Buber says, “the man who says *I-It*, stands before things,” whereas “man lives in the spirit, if he is able to respond to his *Thou*.”¹²

However, there is a big difference between God and human beings in the extent of these powers. In the Middle Ages, the dominant model of God was that of “an absolute monarch ruling over his kingdom.”¹³ This model is clearly Biblical in origin, as a central message of Jesus is the proclamation of the Kingdom of God. The Monarchical model is an inductive argument from analogy. Just as a King stands above his people, so God stands above the world. Just as an absolute monarch has absolute power over his people, so God has absolute power as well. However, like all arguments from analogy, there are disanalogies among the analogues. A King is still a finite human being with a body, whereas God is neither finite nor corporeal. God’s power is infinite, whereas a human’s is not. Hence God is said to be omnipotent. God has the power to create, preserve, and destroy the material universe. Human knowledge is limited, whereas God knows everything, hence is omniscient. God knows what happened on this day in 600 BC, and all the days since, whereas humans don’t. God is said to be eternal, in that he exists outside the spatio-temporal universe, and is therefore considered timeless. Yet at the

¹¹ Richard Swinburne, *Is There a God?* (Oxford: Oxford University Press, 1996), 5.

¹² See Martin Buber, *I and Thou* (New York: Charles Scribner’s Sons, 1958), 29, 39.

¹³ Ian Barbour, *Religion and Science: Historical and Contemporary Issues* (New York: Harper Collins, 1997), 306-7.

same time, God is also said to be everlasting, in that he has existed at each moment in time, in the past, present, and in the future.¹⁴

Although God transcends the universe, he is also said to be omnipresent, i.e., everywhere. This is possible because God is not only the creator of the universe, but remains actively involved in sustaining it and all the various forms found within it. Aquinas states that God, as the first, universal cause of all things, governs everything directly, although this might be through secondary causes, by means of created things exerting causal influence on other created things. As the sustainer of the universe, “every creature’s existing depends on God, so that no creature could exist even for a moment without being annihilated were the activity of God’s power not to preserve it in existence.”¹⁵ Thus the theistic God is said to be both transcendent and immanent, found in creation, but not identical to it. God has ordered the universe in such a way that the natural world is governed by laws of nature which determine the causal interactions and properties of natural objects, but God, as the author of these laws, can also act by suspending these laws and acting directly. This allows for the miraculous intervention of God into the natural world in order to accomplish some divine purpose, such as curing people of disease, or responding to prayers. In addition to these attributes, omniscience, omnipotence, and omnipresence, God knows what is right and wrong, he knows what the best kind of world for creatures like us is, and he has the ability to freely act to create and sustain such a world.¹⁶ As a result, humans owe their being and the being of the world around us, as well as its goodness, to God. Therefore, we owe God not only gratitude

¹⁴ Swinburne, *Is There a God?*, 10.

¹⁵ Thomas Aquinas, *A Summary of Philosophy*, trans. and edited by Richard J. Regan, (Indianapolis: Hackett Publishing Co., 2003), 55-58. Quote from *Summa Theologica*, I, Q. 104, A. 1.

¹⁶ Swinburne, *Is There a God?*, 11-14.

and worship, but are obligated to obey God's moral commands, whatever these are taken to be, since God is the source of all good things.

Other core beliefs of theism include the belief that humans are made in the image of God, that they have a soul that was created by God *ex nihilo*, and that the soul is immortal. Also, theism by definition states that naturalism is false, that matter is dependent upon and originates from the being of God, who is spiritual in nature and who transcends the universe. Thus theism and Naturalism are said to be inconsistent, i.e., both cannot be true at the same time. They are also contradictory; if theism is true, then naturalism is false, and if naturalism is true, then theism is false. Theists, in order to be internally consistent, must assert that naturalism is false, and vice versa.

3. Is Theism Coherent? The Limits of Language and the *via negativa*

When one says that God is eternal, or that God has always existed, is this a sufficient answer to the question, what caused God? If one says that God is timeless, i.e., outside time, then how can God be found within temporality, which the assertion of omnipresence demands? If God is omnipotent, can he build a boulder so big he can't lift it? The modern updated version of this is, can God microwave a burrito so hot he can't eat it? If he can, then there's something he can't do. If he can't, then again there's something he can't do. Either way, he's not omnipotent. In Book II, chapter 25 of the *Summa Contra Gentiles*, entitled 'How the Omnipotent God is said to be incapable of certain things,' Aquinas addresses this issue. He asks similar questions: Can God make something both black and white? Can God make the past not to have been? Aquinas

solves these questions by placing limits on God's omnipotence. God cannot do what is logically impossible, like making a round square. "He cannot make the genus not to be predicable of the species, nor lines drawn from a circle's center to its circumference not to be equal, nor the three angles of a rectilinear triangle not to be equal to two right angles."¹⁷

A similar problem arises when God is said to be omnipotent, omniscient, and benevolent. If God is omniscient, then he is said to know everything that happens in the universe. But does this mean that God knows what each of us will do in the future? Does this undermine human freedom? If God is all-good or benevolent, then God would want a universe in which there is no evil. So if God knows everything, then he would know that someone is about to commit an evil act. If God is omnipotent, he could stop this person from committing this evil. If he is benevolent, then he would intervene to prevent this evil from occurring. This is the problem of evil that is commonly raised by atheists against the existence of God: Given the reality of evil, it is inconsistent to argue that God is benevolent, omniscient, and omnipotent.

Richard Swinburne has a credible response to this problem. Just as there are limits to God's omnipotence, there are limits to God's omniscience. Just as it is impossible for me to know what another person will do tomorrow, God cannot know either. In creating human beings with limited free will, God placed limits on what God can and cannot do. However, Swinburne notes that this "is not the normal Christian (or Jewish or Islamic) view," but it does resolve the problem that the paradoxes of God's

¹⁷ Thomas Aquinas, *Summa Contra Gentiles, Book Two: Creation*, trans. by James F. Anderson (Notre Dame: University of Notre Dame Press, 1975), 73-75.

omnipotence and the problem of evil present for the theist.¹⁸ The best of all possible worlds is one in which God imposes limits on what God can do or know, but this is the price that must be paid in order to allow human beings free will and avoid predestinationism. Swinburne argues that the story of Jonah and the Ninevites supports his position. Jonah is told by God to tell the Ninevites they are about to be destroyed. When they repent, God changes his mind, but Jonah gets upset with God for now his prophecy did not come true. The story seems to suggest that God did not know the Ninevites would repent, thereby demonstrating God's omniscience does not include knowledge of the choices free beings will make. Swinburne's theology is thus labeled a 'kenotic' theology in that it emphasizes "God's voluntary self-limitation," and downplays claims that God is omnipotent in the absolute sense.¹⁹ John Hick's theodicy is kenotic as well, in that God limits his power so as to allow for human freedom, which may give rise to immorality and evil.²⁰

Another way to avoid the charge that the traditional theistic attributes of God are inconsistent is by making the distinction between the Kataphatic and Apophatic. The Kataphatic approach to spirituality makes full use of words and images to describe God. God is infinite, omnipotent, omniscient, just, perfect, creator, liberator, savior, and redeemer. However, this approach runs the risk of applying finite human concepts onto a being that is infinite and stands beyond the sensory temporal world. For example, we frequently refer to God as He. But God has no body and is supposed to transcend gender. As a result, some believe we cannot say anything positive about what/who God is, only

¹⁸ Swinburne, *Is There a God?*, 7-8.

¹⁹ Barbour, *Religion and Science, Historical and Contemporary Issues*, 358.

²⁰ *Ibid.*, 315.

what God is not. This is the Apophatic ('to deny') approach to spirituality, which stresses the mystery of God and advocates passively meeting God in silence. Since God transcends the spatio-temporal world, an intellectual approach to God using the concepts and metaphors of this world is inadequate.²¹ Kant would agree, since "thoughts without content are empty."²²

The process of stripping all concepts and metaphors away from God is sometimes called the *via negativa*, or the negative way, or 'the way of denial.' It is advocated by philosophers like Maimonides, and mystics such as Dionysius and St. John of the Cross, who had experiences of God they claimed to be ineffable, or beyond description. The *via negativa* states one cannot predicate anything positively about God, since God's being is beyond human comprehension. Instead, all one can say is what God is not. Instead of saying that God is Eternal, all we can say is that God is neither temporal nor created. Instead of saying God is omniscient, all we can say is God is not ignorant. Instead of saying God is omnipotent, what we should say is God is not powerless. Instead of saying God is benevolent, all we can say is God is not malevolent.

4. The Origins of Theism: Religious Realism vs. Constructivism

Why are people religious? Why do such things as religious phenomena exist? Are they truly of divine origin, or merely a human invention? If the latter, then how can one explain their almost universal and transcultural presence? Why do some people have

²¹ Bradley P. Holt, *Thirsty for God* (Minneapolis, MN: Fortress Press, 2005), 74-5.

²² Immanuel Kant, *Critique of Pure Reason*, trans. by Norman Kemp Smith (New York: St. Martin's Press, 1965), 93. A 51 (1781 ed.) or B 75 (1787 ed.). Other translations read "thoughts without intuitions are empty."

faith in God, while others don't? Religious people claim they are religious because they believe there is a supernatural world beyond the natural order of things, and like Plato they consider this transcendent world more real than the world of space and time. They believe knowledge of the transcendent world is possible because occasionally it intervenes and penetrates our world. Thus people who are religious often claim they are religious because they are responding to a divine reality. Western theists claim that their vision of God and God's attributes is preferable to other claims because their claims are 'truer' to the way ultimate reality actually is. Such people are termed 'realists,' because they believe that their object of study, namely God, exists independently of the human mind. The term 'God' denotes an actual being whose existence is independent of our knowledge. Thus the monotheistic realist claims he is a monotheist because this is in fact the way things are. So the realist answer to why there is religion is that religion has arisen in response to an actual divine being, and there have been those who have penetrated the veil separating God from the spatio-temporal world and experienced God, and are trying to share their experience of God's self-disclosure with others. So a religious realist claims he or she derives his concepts about God because this is the way things are, there is a God, and that God has made himself known. In other words:

Statements about the existence and nature of God are true if and only if there is a divine being with such properties. Statements about actually experiencing the Transcendent are true if and only if there is a Transcendent to be experienced. The claim that God hears prayer is true if and only if there is a God who answers prayer. The claim that humans exist after death is true if and only if humans do in fact live subsequent to their death.²³

²³ Michael Peterson, William Hasker, Bruce Reichenbach, David Basinger, *Philosophy of Religion: Selected Readings* (New York: Oxford University Press, 2014), 8.

Nonrealists, constructivists, and anti-essentialists argue religious pronouncements do not correspond to external realities; religious language and religious concepts are simply constructions of human beings and their societies. So the meanings of religious words are based in the peculiar linguistic practices and social conventions of society. Religion is simply a human creation, and religious language is rooted not in a transcendental experience of the divine, but in human practices and beliefs. Religion is simply a natural, rather than supernatural, event. For Nietzsche, religion and morality are the inventions of the oppressed as a way to turn the tables on their oppressors. In this life we're down, but in the next life, we will be up and you will be down. For Freud, religion is simply the projection of our infantile need for security and moral authority onto a heavenly father figure. For Durkheim, religion arises not in response to cosmic forces, but out of a sociological need for individuals to behave and comply with the norms of society.²⁴

William James defines religion as "*the feelings, acts, and experiences of individual men in their solitude, so far as they apprehend themselves to stand in relation to whatever they may consider the divine.*"²⁵ Note that the emphasis in James is on 'perceived divinity,' not divinity itself: one apprehends oneself to stand not necessarily in relation to the divine itself, but to "whatever they may consider the divine." However, this is not how the mystics experience the sacred. Mystical states present themselves as states of knowledge in which the mystic claims he or she 'knows' the experience comes from and is of God.²⁶ Mystics claim their experiences are more than just 'beliefs,' and

²⁴ Ibid., 6.

²⁵ William James, *Varieties of Religious Experience*, (New York: Barnes & Noble Classics, 2004), 39.

²⁶ Ibid., 329.

on the whole are anti-naturalistic. However, while mystics claim to have crossed the line from constructivism into realism, from belief into reality, because the experience is subjective and cannot be transmitted either conceptually or experientially, it is difficult for the non-mystic to evaluate their claims on an objective basis.

5. Natural Theology and Reason: Arguments for the Existence of God

In the *Confessions*, Augustine believes the existence and nature of God can be discerned in three ways: by a direct vision or mystical experience, by faith or belief in the testimony of others who have experienced God's self-revelation either through the prophets of the Bible or the person of Jesus, and by reason attempting to come to terms with the natural desire for God that he feels is implanted in our hearts.²⁷ Augustine believed natural knowledge of God was possible by studying creation because the world has been ordered by God and reflects God's mind. He argues that the existence of things themselves demand an explanation, crying out "We did not make ourselves, but he who endures forever made us."²⁸ This type of knowledge is open to all, but the faith that Scripture is the Word of God is a gift from God and thus open to fewer people. Fewer still are those people who have experienced God through a mystical experience.

Since the faculty of reason is supposedly universal amongst all humans, the arguments for God's existence are usually considered first by philosophers. But what does it mean to be rational? Does it simply mean the ability to construct sound, valid

²⁷ This is evident in Books 7, 8, and 9, detailing the events leading to Augustine's conversion. Book 9, Chapter 10 discusses an alleged mystical experience Augustine and his mother had at the port by Ostia shortly before her death.

²⁸ Augustine, *Confessions of St. Augustine*, trans. by John Ryan (New York: Doubleday Pub., 1960), 185.

arguments? Are the arguments for God's existence valid? Good arguments involve two things: collecting as many facts as possible, and then making good inferential claims based on the facts. Given credible premises, reason allows us to determine whether an argument for God's existence is sound or not. The problem here is determining what constitutes good evidence, and whether or not logical necessity is enough to guarantee the existence of a being that supposedly transcends space and time.

There are plenty of proofs attempting to demonstrate that God exists. But beyond God's existence, what is God like? Can we know that as well, or can we only be said to 'believe' that God exists, and 'believe' that God has such and such qualities? As noted earlier, the relationship between reason and faith parallels that of science and religion, evolution and theism. The fundamental stance of the New Atheists and various naturalist philosophers who abide by the creed of scientism is that science disproves religion, and evolution disproves theism. Their overall take on the relationship between philosophy and religion is that philosophy should come under the domain of science and adopt its methods. Their stance on the relationship between reason and faith is that the two are incompatible. This is actually only one of several possible ways that the relationship between reason and faith may play out. Rem B. Edwards lists six possible ways to relate them.

1. The subordination of philosophy to theology (Aquinas)
2. The subordination of theology to philosophy (Hegel)
3. The elimination of theology in favor of philosophy (theistic Rationalism – Locke, and atheistic Rationalism – Dewey)
4. The elimination of philosophy in favor of theology (Fideism, Crisis Theologians – Barth, Brunner)
5. The elimination of the 'subject matter' from both philosophy and theology (Logical positivism)

6. The equating of philosophy and theology as competing historical, rational belief systems (Royce, Niebuhr)²⁹

While each of these positions will in one way or another be discussed at some point below, for now let us consider the first one, that of Aquinas. The traditional view that knowledge consists of justified true belief requires beliefs to be justified. Without good reasons for faith, faith in God appears to be unjustified and irrational. Aquinas sees in philosophy and natural theology a preamble to faith. The First Vatican Council agreed, stating “that truth comes from the same God and cannot be contradictory.”³⁰ The truths of reason must align with the truths of revelation. However, while Aquinas believes that philosophy and reason can be used to prove the existence of God, that only gets one so far. Therefore what reason can’t know about God must be revealed. Thus faith perfects reason; the imperfect wisdom of philosophy is made perfect by the grace of God. That God exists can be demonstrated by reason; that God is triune in nature, that God created the world *ex nihilo*, that humans have been tainted by original sin, that the soul is immortal, and that sacraments bestow grace, all must be disclosed by God.

Aquinas argues:

There is a twofold mode of truth in what we profess about God. Some truths about God exceed all the ability of the human reason. Such is the truth that God is triune. But there are some truths which the natural reason also is able to reach. Such are that God exists, that He is one, and the like.³¹

This position is attractive because it allows the theist to give reasons for his or her beliefs. It may not be enough to convince the naturalist, the positivist, or the strong rationalist who demands deductive certainty for every belief, but it at least operates

²⁹ Rem B. Edwards, *Reason and Religion* (New York: Harcourt Brace Jovanovich, Inc., 1972), 71-2.

³⁰ Richard McBrien, *Catholicism* (New York: Harper Collins, 1994), 116.

³¹ Aquinas, *Summa Contra Gentiles*, 1:3, 63.

within the framework that it is possible to give good reasons for faith, and does not see the two as necessarily conflicting. Since some religious truths can be known by reason, then there is a common ground in which philosophy and religion overlap. As a result, let us consider briefly some of the well-known arguments for the existence of God.

5.1 Existential Argument

Augustine makes an argument for the existence of God that one could call existential, one based on disordered love. Virtue for Augustine consists in the proper ordering of love. If one does not value or love God as our greatest good, then one will be dissatisfied, since earthly goods cannot satisfy one as God does. At the beginning of the *Confessions*, Augustine states, “Thou has made us for thyself, O Lord, and our hearts are restless until they find their rest in thee.”³² This statement suggests humans have a spiritual need, akin to a thirst, that can only be satisfied by God. Thirst and hunger suggest that we are not self-sufficient, that we are dependent upon God the way we are dependent upon water and food.³³ Augustine doesn’t give an immediate explanation as to why he believes humans are in a naturally restless state. However, given his Neoplatonic interpretation of faith, this statement may offer up a psychologically compelling reason as to why humans seek God. Plato sees the sensible world as less real than the intelligible world, because the physical world of particulars is caught up in Heraclitian flux. The

³² Augustine, *Confessions of St. Augustine*, trans. by Henry Bettenson (New York: Basic Books, 2003), Book I.

³³ Holt, *Thirsty for God*, 11.

intelligible world, on the other hand, with its mathematical truths and Forms, are immune from change. How can one be happy in a world of constant change?

Socrates famously stated in the *Apology* that the practice of philosophy involves learning how to die. Why? Philosophy is concerned with cultivating the mind, that part of us which is eternal, rather than the pleasures of the body, which are not. Socrates saw the body as temporal, changing. By focusing on the mind, he was focusing on those parts of him which he considered eternal and unchanging. Augustine makes a similar comment in the *Confessions*, “I sought a happy life in the land of death but it was not there.”³⁴ This restless dissatisfaction with the world propels one to seek that which does not change, which, in the Neo-Platonic Christian worldview, is God. God alone is permanent. When God reveals his name to Moses, he simply states, “I AM,” meaning my essence is to be. Aquinas makes a similar claim, that true happiness in this life is not possible. The best that this life offers is an imperfect happiness, because this world lacks the fullness of God’s being. True happiness can only be achieved in a beatific vision of the divine, which cannot occur until the next life. Thus this might be considered an existential argument for the existence of God, similar to Kierkegaard’s idea that it is not reason but psychological angst, or despair over sin that forces one to make the leap of faith into the category of the religious, as Christianity offers forgiveness of sins.³⁵

5.2 Ontological Argument

³⁴ Augustine, *Confessions*, Book IV.

³⁵ Soren Kierkegaard, *The Sickness unto Death*, trans. by Howard V. Hong and Edna H. Hong (Princeton: Princeton University Press, 1983), 166-7.

The Ontological Argument also follows the Neoplatonist tradition by beginning in inwardness. Saint Anselm gives the classical version of the Ontological argument, though it was Kant who gave it that name. From the outset it is ambiguous as to what Anselm's goal is. He states at the beginning of the *Proslogion*, "I do not seek to understand in order to believe; I believe in order to understand. For I also believe, 'Unless I believe, I shall not understand.'" This sounds like what he is doing is continuing in the Augustinian tradition of faith seeking understanding, of reason being subordinate to the faith. But then he states in the *Preface* that it is his aim to find a single argument that will prove that God exists, that God is the highest good, and that all other beings are contingent upon God. Now this is a different aim. This sounds not like a soft rationalist trying to simply understand one's faith, but a strong rationalist trying to use reason to prove the existence of God. Perhaps his aim is the latter, but if it doesn't work, he is hedging his bets by also saying it could simply be the former. His argument is simple, and can be stated in a few simple sentences. God is "that than which none greater can be thought." God, as the most perfect being, must exist. Why? Because if God existed only in our mind and not in reality, than we could think of a greater being than that, namely one that did exist. Thus a most perfect being that lacks the predicate of existence, is by definition not the most perfect being imaginable, as a more perfect being can be imagined, namely one who does possess the predicate of existence. It is claimed that Anselm derived the inspiration for this definition of God from Augustine, who believes God is the Ground of Truth, the eternal and all-perfect Being, "something than which nothing more excellent or more sublime exists."³⁶

³⁶ Frederick Copleston, *A History of Philosophy* (Garden City, NY: Image Books, 1985), 2:70.

Does the argument work? Kant's critique of the Ontological argument is aimed explicitly at Descartes' version of it, rather than Anselm's. Descartes explicitly mentions the property of existence, stating that he cannot conceive of a God who does not exist anymore than he can conceive of a mountain that does not have a valley. Hence existence is a necessary property for a most perfect being. Most consider the two arguments sufficiently similar so that Kant's objection applies to both. Kant's objection to the argument is that it assumes that existence is a property that a most perfect being must have. Kant says existence is not a property of things, but rather its precondition for having properties.³⁷ A dollar bill has lots of properties, but if did not exist, it would have no properties. Hence, rather than being a property, existence is the basis for having properties. God as the most perfect being might logically entail existence, but this is an analytic statement and only demonstrates logical necessity, and cannot make the kind of existential declarations that synthetic statements do.

Alvin Plantinga does not think that Kant's refutation of Anselm's argument succeeds, for he believes Anselm does not explicitly consider existence a predicate in his concept of 'the being than which none greater can be conceived.'³⁸ Plantinga updates the argument by incorporating modal logic into it, thus reformulating it as a modal ontological argument. Restated, it says that in all possible worlds, God as a necessary being, must exist. Plantinga's updated version of the argument is an improvement over Anselm's and Descartes', and shows that the Ontological Argument may survive Kant's critique. While it still might not convince the naturalist, it at least demonstrates that

³⁷ Kant, *Critique of Pure Reason*, 504 (A 598, or B 626).

³⁸ Alvin Plantinga, "Kant's Objection to the Ontological Argument," in *The Journal of Philosophy*, Vol LXIII, Oct., 1966, pgs 537, 543. See also, *God and Other Minds*.

theism can be formulated in a rationally acceptable manner and that Kant's objection is not necessarily fatal to it.

Paul Tillich dislikes using the word 'existence' at all in talking about God. God does not exist in the way that beings in the world exist, and to try to talk of God as existing seems to relegate God to just another being alongside all the other beings of this world. Instead, Tillich sees God as the 'ground of being,' stating "God is being-itself, not a being."³⁹ This could be seen as a way to overcome the 'existence is not a predicate' objection. However, the problem with such a formulation of this concept of God is that God, as the personal subject of traditional theism, is thereby cast aside. Nietzsche's proclamation that 'God is dead' means only that the supernatural monarchical God of theism has died, but God as the 'ground of being,' could well remain alive and well. God's existential status is somehow preserved, but at the cost of changing one's notion of who God is. Tillich's characterization of faith as "the state of being ultimately concerned"⁴⁰ also raises problems. It seems that just about any object of 'ultimate concern' could be deified, including one's dog, one's wife, Mr. T, or the human race itself, not just being.

5.3 Cosmological Argument

If Anselm's argument begins *a priori* with premises known independently of sense experience, and then works outward to existence, Aquinas's arguments follow the Aristotelian tradition and reverse the movement; they begin not from within but from

³⁹ Paul Tillich, *Systematic Theology* (Chicago: University of Chicago Press, 1951), 237.

⁴⁰ Paul Tillich, *Dynamics of Faith* (London: George Allen and Unwin, 1957), 1.

without. Their starting point is sense experience, from various features of the world known empirically. From these God's existence is inferred. Aquinas's five proofs of God's existence are found in Article Three of the *Summa Theologica*, and following Aristotle's epistemology, all five are *a posteriori*. The first three are versions of the Cosmological argument, in that they argue from some observed contingent feature of the universe to God being responsible for this feature. The first argument is from motion. It begins with the observation that in the world some things are in motion. Whatever is in motion is put in motion by something else. If you follow the cause of motion back far enough, you eventually come to God. This is somewhat similar to Aristotle's version, but for Aristotle God causes motion without being moved, because matter, constituting potentiality, seeks God's pure actuality.

Aquinas's second argument is from causality. It states that all effects must have causes. This is known as the principle of efficient causality, and Aquinas thinks it is known *a posteriori*, although technically it exceeds empirical claims. Thus Kant claims it is actually a synthetic *a priori* proposition.⁴¹ If we have a sculpture, we must have a sculptor. If we have an effect, we must have a cause. The universe is an effect. Therefore it is rational to infer God as its efficient and first cause. Aquinas's third argument is from possibility and necessity. It states that our existence is not necessary. Nothing demands that any of us exist. Given our existence, however, our parent's existence is necessary. But it cannot be 'parents' all the way down in an infinite series. The series must terminate in a necessary being in order to explain our existence. The existence of a necessary being is required to explain the existence of possible beings.

⁴¹ F.C. Copleston, *Aquinas* (New York: Penguin Books, 1991), 31.

5.4 Teleological Argument

Aquinas's fourth and fifth arguments are considered versions of the teleological argument, in that they argue that certain features of the universe appear to show design or purpose, and need God in order to explain this order. The fourth argument states that there are degrees of perfection, gradations of 'more' and 'less' perfect, found in all things. Our ideas of good or bad presuppose a standard of perfection against which to judge them. God is this standard. Aquinas's last argument states that nature displays order, and that nature moves towards certain ends. There must be an intelligent being who ordered the world and directs natural objects toward their ends. This orderer is God.⁴²

William Paley follows in the footsteps of Aquinas's argument based on order, but he makes his case on the basis of an analogy. Imagine crossing a heath (not a beach, as some often tell the argument) and coming across a stone. This is quite different from coming across a watch. Why? One is simply a natural object, whereas the watch shows evidence of order or design and hence is a human artifact. Though one never witnessed the watchmaker who constructed it, it is safe to infer that there was one, for watches do not just put themselves together in nature. Similarly, Paley states, "every indication of contrivance, every manifestation of design, which existed in the watch, exists in works of nature; with the difference, on the side of nature, of being greater and more."⁴³ Paley uses as an example of complex design, an eye. If we are justified in inferring that there

⁴² Thomas Aquinas, *Summa Theologica*, in *Introduction to St. Thomas Aquinas*, ed by Anton C. Pegis (New York: Modern Library, 1948), 24-27.

⁴³ William Paley, *Natural Theology* (Charlottesville, VA: Ivis Pub., 1986), 17-18.

was a watchmaker for the watch, surely we are just as justified in inferring that there was an intelligent designer and artificer for the eye, even if we have never witnessed this creation. Just as we make a distinction between the stone and the watch, one having a natural explanation the other does not, similarly based on the complexity of the eye, we too should reject a purely natural explanation.

There are two critiques of the teleological argument that some claim are fatal to it. Just as Kant was said to have killed the Ontological argument, David Hume and Darwin's critique are said to have killed the Teleological Argument. However, just as there are good counter-arguments against Kant, there are also good counterarguments against Hume and Darwin. David Hume argues that there is a significant enough disanalogy in the two analogues (watchmaker and worldmaker) to argue the conclusion is a weak inference and hence not justified. We have seen watchmakers make watches, and many watches have been made by many watchmakers. But there is only one world (presumably, given that we reside in a universe and not a multiverse), and we have never witnessed any worldmakers. Hume, under the guise of Philo, asks, "Have worlds ever been formed under your eye?"⁴⁴ No, so one cannot reason from a process one has witnessed, to a process one has not. In addition, the analogy implies that just as there are lots of watchmakers who improve upon the earlier efforts of other watchmakers, so too there must be lots of earlier worldmakers. Hence the argument may support polytheism rather than monotheism. Thus it does not follow that the inference that is warranted based on the order of the watch, is also warranted based on the order found in the universe.

⁴⁴ David Hume, *Dialogues Concerning Natural Religion* (Indianapolis, IN: Hackett, 1980), part II.

The second critique is Darwin's mechanism of natural selection, which does provide a way in which complex organs like the eye can come about in a natural process without the aid of an intelligent designer. From this perspective there is no difference between the rock on the heath, and the eye. They both have strictly natural origins. But it is not enough to simply say that Darwin proved that the watchmaker is blind, as Richard Dawkins argues in *The Blind Watchmaker*. Dawkins, after all, is not the all-knowing and all-seeing master of the universe who has issued the final verdict on the matter, and so can declare the matter decided once and for all. Michael Behe has taken up the position of Asa Gray in an intellectual rerun of the Gray & Lyell vs. Darwin debate over whether or not evolution is guided. Behe, a molecular biochemist, argues that molecular structure is too complex to have evolved naturally. He argues that Darwinian theory is extremely successful, but "in science, a successful theory is not necessarily a correct theory."⁴⁵ Newton's model correctly predicts the outcome of many experiments, but it does not explain what gravity is. His model was corrected by Einstein. Similarly, the Darwinian model cannot explain the biochemical complexity of cells, tissues, organs, and organisms. Behe's argument is just one of many attempts to reformulate the argument from design in such a way as to overcome Dawkins' claim that Darwinism has refuted it.

Darwin created the 'black box' of 'pangenesis' to explain heredity, but he did not understand the mechanisms by which variations occur, or why they are passed on. What is a 'black box'? Behe states it is a "term for a device that does something, but whose

⁴⁵Michael Behe, "*Molecular Machines: Experimental Support for the Design Inference*" 1998, in *Philosophy of Religion*, ed. by Louis Pojman and Michael Rea (Boston: Cengage, 2007), 457.

inner workings are mysterious.”⁴⁶ Modern biochemistry is a fairly recently developed field, and it is currently opening up Darwin’s black boxes. Behe claims it reveals a molecular world which is too complex to be explained by Darwin’s mechanism of natural selection. Furthermore, Behe notes that one field of science was not included in the modern evolutionary synthesis, molecular biochemistry, because it did not yet exist. Behe claims that the facts revealed by his field are not explained by the other ‘non-molecular’ sciences that fall under the umbrella of the Neo-Darwinian synthesis.⁴⁷

In order to explain why he thinks modern biochemistry resists explanation by natural selection, Behe uses an easy-to-understand example – a mousetrap. A mousetrap has five working parts: a flat wooden platform, a metal hammer, a wire spring, a catch release, and a holding bar. If any one of these five components is removed, the trap will not function. Similarly, cilium are hair like organelles on the surfaces of many plant and animal cells that need sliding filaments, connecting proteins, motor proteins, tubulins, dynein, and nexin in order to function. Apart from their proper places in the whole, none of these elements contributes to the survival value of an organism, i.e., individually they provide the organism no benefit. It is only when they come together as a whole that they contribute to survival value. Darwin’s theory does not demonstrate how each element could be produced. All of these complex parts have to come into existence at the same time for the system to function, an occurrence which is highly unlikely. Just as an intelligent designer is necessary to bring all the parts together in a mousetrap, so an intelligent designer is needed to bring all the molecular parts together for any complex biological organelle, be it a eukaryotic cell, a cilium, a bacterial flagellum, or an eye.

⁴⁶ Michael Behe, *Darwin’s Black Box* (New York: Free Press, 1996), 6.

⁴⁷ *Ibid.*, 24-25.

Darwin famously said in the *Origin*, “If it could be demonstrated that any complex organ existed, which could not possibly be formed by numerous, successive, slight modifications, my theory would absolutely break down.”⁴⁸ Behe thinks he has given several examples, not of organs but of ‘simple’ cells that too complex to be explained by natural selection. An intelligent designer, as William Paley’s argument suggests, is needed. Behe calls intelligent design, or the purposeful arrangement of parts like a mouse trap, ‘the elephant in the room’ no one considers, because ‘detectives must get their man,’ so they never consider elephants.⁴⁹ A supernatural designer is the elephant in the room because the methods of science only allow for natural causes to be postulated. But Behe argues it is the only conclusion that one can justifiably draw from the data.

5.5 Fine-Tuning Argument

“Fine Tuning” is another reformulation of the Argument to Design updated by recent science. It takes several forms, as several people have advanced different arguments, based upon various fixed constants in nature. These constants are arbitrary. No one knows why they are what they are. It is logically possible that the force of gravity could be stronger or weaker than what it presently is. Martin Rees, a Cambridge astrophysicist and former president of the Royal Society, has published several books on the topic.⁵⁰ In his 1999 book, *Just Six Numbers*, he examines in detail six constants that

⁴⁸ Darwin, *The Origin of Species*, 159.

⁴⁹ Behe, “Molecular machines,” 464.

⁵⁰ Dawkins, of course, tries to argue that Rees’s argument is somehow an argument for naturalism: he says Rees “told me that he goes to church as an ‘unbelieving Anglican...has no theistic beliefs, but shares the

appear to be fine-tuned in such a way so as to allow for the formation of life. If any of the constants were tweaked in either direction, life as we know it would not be possible. This suggests that an intelligent mind ‘dialed in’ the properties of matter with the intention that life might arise. Robin Collins, in ‘A Scientific Argument for the Existence of God,’ offers up his version of the argument, giving five examples:

1. If the initial explosion of the big bang had differed in strength by as little as one part in 10^{60} , the universe would have either quickly collapsed or expanded too rapidly for stars to form.
2. If the strong nuclear force that binds protons and neutrons together had been stronger or weaker by as little as 5% life would be impossible.
3. If gravity had been stronger or weaker by one over 10^{40} then life-sustaining stars like the sun could not exist.
4. If the neutron were not about 1.001 times the mass of the proton, all protons would have decayed into neutrons or all neutrons would have decayed into protons.
5. If the electromagnetic force were slightly stronger or weaker, life would be impossible.⁵¹

6. Revealed Theology and Faith: Scripture and Miracles

It is rare that anyone is ever converted to theism by rational proofs. They appear to be sound according to those who have faith, and unsound according to those who lack faith. There is also dissatisfaction with some in adopting a rational approach to God. Pascal believed that no rational evidence for God could be given. How does one come to faith then? Pascal’s advice is to attend religious practices with those who have faith, and like a cold, faith is contagious and you might come down with it. Pascal also famously

poetic naturalism that the cosmos provokes in the other scientists I have mentioned.” *The God Delusion*, p 35.

⁵¹ Robert Collins, ‘A Scientific Argument for the Existence of God,’ in *Philosophy of Religion, An Anthology*, ed. by Louis P. Pojman and Michael Rea (Belmont, CA: Thomson Wadsworth, 2003), 75.

had a mystical experience of God, which he described in the following peculiar way: “from about half past ten at night to about half an hour after midnight, FIRE. God of Abraham, God of Isaac, God of Jacob, not of philosophers and scholars. Certitude, heartfelt joy, peace. God of Jesus Christ.”⁵² He believed the God that philosophers talk about, is not the God he experienced, but rather the God of the Bible, the God of Revelation. There are three ways of looking at Revealed theology and Scripture vis-a-vis philosophy: it complements the philosophical approach but sees philosophy as subservient to revealed truths; revealed theology should be subordinate to philosophy; and revealed theology eliminates philosophy altogether, seeing it as speculative.

The last position is sometimes referred to as fideism, having faith on the basis of revealed theology alone, independent of reason. Tertullian famously stated, ‘What has Athens to do with Jerusalem?’ And, “the Son of God has died; it is by all means to be believed, because it is absurd.” While Tertullian’s statements appear to demonstrate that faith and reason are incompatible, this is not what Tertullian means. He himself was supposed to have been a lawyer, and much of his writing is considered apologetic. By these statements, he was simply arguing that one should not confuse philosophy with revelation. If this is the way God chose to reveal Himself, who are we, using only human tools, to argue?⁵³

The fiftieth of Luther’s 97 theses (not to be confused with his 95 theses protesting indulgences) states that “Aristotle is to theology as darkness is to light.” When it came to his eternal salvation, he placed all his chips on Jesus, not on a pagan philosopher who

⁵² Blaise Pascal, *The Mind on Fire; An Anthology of the Writings of Blaise Pascal*, ed. by James Houston (Elgin, IL: David C. Cook, 2006), 43.

⁵³ Justo L. Gonzalez, *A History of Christian Thought, Volume I* (Nashville: Abingdon Press, 1989), 174-5.

was skeptical of the existence of the soul or a Creator God. Luther also stated that “reason is a whore, the greatest enemy that faith has,” since it could be made to argue whatever one wanted it to. Reason was affected by the fall to such an extent that it was too opaque to comprehend God. Kierkegaard believed that Christianity was based upon a paradox that the infinite perfect God became mortal, taking on flesh and dying a sinner’s death. The Crisis Theologians, Karl Barth and Brunner, believed that whenever times of great turmoil and trouble arose, God would intervene and reveal his will. Why do some believe that Scripture is God’s self-revelation, while others don’t? Augustine believed that faith, or the belief that God is revealed in and through the person of Jesus, is a gift given by God.

The Bible ‘reveals’ a monotheistic god who is actively involved in the lives of the ancient Hebrews, who demanded ethical conduct of the people that he entered into a covenant with, and rewarded and punished these people depending upon their obedience to His commands and the commitment of their faith.⁵⁴ God is thus portrayed as forming bonds with individuals and entering into covenants with them. This is important because the Revealed Word tradition discloses a God who is fiercely protective of his chosen people, guards them against attack, and listens to their prayers and petitions. He rescued them out of slavery in Egypt and guided them through the Wilderness by a white column of light at night, and a cloud during the day, and fed them with manna from heaven. In other words, the people of Israel owe their existence as a people to God’s protective power. This is the complete opposite of the survival of the fittest by means of natural

⁵⁴ See Deuteronomy, chapters 26-29.

selection. It is survival of the faithful by means of supernatural intervention, guidance, and protection.

The central claim of the New Testament is that God took on human form. How are we to evaluate this claim? According to legend, Alexander the Great asked an Indian holy man “How can one become a god?” The answer he was given was: “by doing something a man cannot.” Whether one believes Jesus was divine or not, one cannot deny that more than any other man who has ever lived, Jesus, it is claimed, did things no ordinary mortal could. Thus the appeal to his divinity as witnessed by the testimony of Scripture, which records his alleged miracles: a Virgin birth, healing the sick and lame (lepers, withered hands, hemorrhaging woman – some just by being touched), eyesight to the blind, casting out demons, walking on water, commanding the wind and rain to stop, changing water into wine, feeds five thousand with two fish and five loaves of bread, reads minds (Samaritan woman at the well), knows the future, heals the soldier’s ear Peter strikes off, raises others from the dead, and is himself raised from the dead. In the Gospel of Mark, the first person to recognize Jesus as more than human is a man with an unclean spirit, who cries out, “What have you to do with us, Jesus of Nazareth? Have you come to destroy us? I know who you are, the Holy One of God.” (Mark 1:24)

Jesus himself makes claims to be preexistent, “I tell you the truth, before Abraham was born, I am.” (John 8:58) Jesus also appears to possess a wisdom that is beyond ordinary human ability. He tells parables which suggest that he had firsthand knowledge of God, Heaven, and the afterlife. As a result, “They were amazed, because he taught them as one who had authority.” (Mk 1:22) He seems to know who is saved and who is not, and gives examples, such as the rich man and Lazarus. Jesus also claims

to possess the authority to forgive sins, which the Pharisees believed only God could do. Did Jesus think he was divine? In John 10:30, Jesus states: “I tell you, the Father and I are one.”

Given the claims about the divinity of Jesus, C.S. Lewis claims we are faced with a trilemma. Either Jesus is lying, or Jesus is crazy, or he is telling the truth.⁵⁵ No sane rational mere mortal would go about making the claims Jesus makes. In the Gospel of Mark, Jesus is asked by high priest at this trial, “Are you the Christ, the Son of the Blessed One?” Jesus responds, “I am.” (Mark 14:61-61) So Jesus is either telling the truth, or he is crazy, or he is lying. These are our options, either Jesus is blaspheming by claiming supernatural power, or he is the Christ, although it is also possible Jesus was simply mistaken. The problem is, Jesus is a good person, a morally upright person. He also appeared to be quite sane. If anything, Jesus comes off as a very wise, warm, empathetic, and socially concerned individual. So it is difficult to “conclude that Jesus was a liar or a lunatic. The only alternative is that he was the Christ, the Son of God, as he claimed.”⁵⁶ The Scriptures also attribute to Jesus those attributes previously stated to belong to the theistic God. “Jesus is presented as being self-existent (Jn 1:4, 14:6; omnipresent (Mt 28:20, 18:20); omnipotent (Rev 1:8; Luke 4:39-55; 7:14, 15; Mt 8:26, 27); and possessing eternal life (1 Jn 5:11, 12, 20; Jn 1:4).”⁵⁷

Is it rational to believe the claims in the Bible, particularly those made in the New Testament? Is it rational to think that God was born of a virgin? Is it rational to think that a man walked on water? Is it rational to think that a man rose from the dead?

⁵⁵ C.S. Lewis, *Mere Christianity* (New York: Macmillan Co., 1960), 40-41.

⁵⁶ Josh McDowell, *More than a Carpenter* (Wheaton, IL: Tyndale House Publishers, 1977), 33.

⁵⁷ *Ibid.*, 11.

Tertullian said precisely because it is absurd, he chose to believe.⁵⁸ Whether or not Jesus is God, and whatever the Bible and the various Christian traditions say about Jesus's divinity, belief is ultimately up to the individual. Kierkegaard says there are no objective criteria by which a person can make up his or her mind. There is either faith or offence. Even the people who lived at the time of Jesus and experienced him firsthand had no advantage over those who lived later. Hence the disciple at secondhand has no advantage over the disciple at firsthand who saw Jesus. That Jesus is divine is a belief, and all that one can see with one's eyes is that Jesus was a man.⁵⁹ One can only see Jesus's divinity through "the eyes of faith."⁶⁰ Not everyone who saw Jesus was convinced of his divinity, as is evident by his rejection by the Jewish authorities, and his trial and execution.

To dismiss the Bible or the Koran by claiming it was written in a pre-Scientific period is to miss the point. Scripture claims to be the record of divine self-revelation, which can occur in any period at any time. The conditions of existence were just the same for men living in first millennium BCE as they are today. They faced the need to eat, sleep, and fight off disease and death, just as much as we do. The only difference is that we have refrigerators, McDonald's, and internet porn, and they didn't. This is hardly a game changer in anyone's playbook. Also, if supernatural beings and causes lie outside the ability of science to investigate, because they are non-natural and science concerns itself only with natural causes, then science in this day and age is in no better a position to assess the claims of Scripture than people living in a pre-scientific age were. Science

⁵⁸ Tertullian, *De Carne Christi*. Quoted in Justo L. Gonzalez, *A History of Christian Thought, Volume I* (Nashville: Abingdon Press, 1989), 174.

⁵⁹ Soren Kierkegaard, *Philosophical Fragments*, trans. by David Swenson (Princeton: Princeton University Press, 1967), 116.

⁶⁰ *Ibid.*, 128.

concerns itself only with studying objects of creation, not with studying the creator. The central message of the Bible is that there is a loving God who created us and calls us to love one another. This seems to be a claim that lies outside the realm of scientific investigation, since science limits itself to the investigation of nature.

7. Argument from Religious Experience and Mysticism

It is possible to remain unconvinced by the rational arguments for God's existence. However, even if the arguments are said to fail, this does not disprove theism. It is also possible to see the Bible as the product of a prescientific worldview, an interpretation of events that posits a divine being and supernatural events that today may be seen as having strictly natural causes. Wittgenstein himself expressed the opinion to Maurice O'Connon Drury that "For me too the Old Testament is a collection of Hebrew folklore." Wittgenstein also stated in *Culture and Value* that "Christianity is not based on a historical truth; rather, it offers us a (historical) narrative and says: now believe! But not, believe this narrative with the belief appropriate to a historical narrative."⁶¹ So it is possible to be unconvinced of theism by argument and also doubt the authority of Scripture by claiming it is just one of many grand metanarratives, a narrative about narratives that revolves around one grand, central idea. However, suppose one actually has a personal encounter with God. It would be hard to remain skeptical. If by an act of God, one walked outside one day and looked up into the sky and the curtain hiding God was drawn back, revealing God in Heaven surrounded by a throne of angels, it would be

⁶¹ Brian R. Clack, *An Introduction to Wittgenstein's Philosophy of Religion* (Edinburgh: Edinburgh University Press, 1999), 53.

hard to remain skeptical after that. Thus the argument from personal experience appears to be the most solid confirmation and proof for God's existence. Unfortunately, such experiences are not only rare, but may only be convincing to the person who has them.

Yet, this is what the mystics claim have happened to them. They claim to have had a firsthand, personal experience of God. Their belief that God exists is based on this claim, which is not dependent upon rational arguments, inferences, or the secondhand testimony of others who themselves claim to have experienced God. As the saying goes, 'seeing is believing,' and as a result personal experience is often the highest court of appeal in justifying one's beliefs. A mystic is someone who has 'met' God, or had some kind of encounter with divine reality. These encounters can take the form of sensory experiences or super-sensory perception in which the wall separating the self from the divine is somehow temporarily cast aside. W.T. Stace describes a mystical experience as "the apparent fading away, or breaking down, of the boundary walls of the finite self so that his personal identity is lost and he feels himself merged or dissolved in an infinite or universal ocean of being."⁶²

St. Theresa of Avila is one of the best known examples of a mystic. She had several experiences in which she claimed Jesus appeared before her. This seems to confirm religious realism, the claim that God is an objectively existing being, rather than a human construction (non-realism), who has revealed himself to various people throughout history. Teresa makes two claims for realism over non-realism. She says that the beauty of the spiritual body of Jesus, the vision of just his hands, far surpassed her

⁶² Walter T. Stace, *Mysticism and Philosophy* (New York: Lippincott, 1960), 57.

ability to imagine it.⁶³ She also says that the experiences completely transformed her life. This counts as evidence in favor of religious realism, evidence that she is not the source of these visions, and that they could only have resulted from an encounter with a supernatural being.

This type of experiential religion should be enough to convince the unbeliever of the existence of God. If God does exist, then you would expect that God should be able to pull back the curtain at any time and reveal himself to anyone skeptical of his existence. This was enough to convince the most hardened of disbelievers, Saul, on the road to Damascus, to change his tune.⁶⁴ He turned from chief persecutor of the early Christians, to chief evangelist. This divine game of peek-a-boo seems to confirm Calvin's doctrine of predestinationism. The reason that some people have faith and others don't, is that God reveals himself to some but not to others. The elect are those who are privy to God's self-revelation, while the reprobate are those from whom God remains hidden. But the ball is clearly in God's court. If God desired everyone to be a believer, God could theoretically cause everyone to have a Damascene experience. Thus a person who has been 'chosen,' in the Calvinist sense, might consider belief in God to be a 'basic belief,' as Alvin Plantinga argues, in that it is not in need of further justification. Plantinga, in fact, gives another example of a 'basic belief,' belief in the existence of other minds. However, it is hard to argue that theistic belief is basic to all. It might be basic to the believer who has some privileged access to God, or a personal encounter with

⁶³ St. Teresa, "Religious Experiences," in *The Philosophy of Religion*, ed. by Michael Peterson, et al. (New York: Oxford University Press, 2014), 43

⁶⁴ Acts 9.

God, but to those who lack such an experience, it is hard to assert that belief in God is basic.

C.D. Broad argued that religious ‘sense’ is like a sixth sense, similar to the ability to hear tones in music. At the negative end, are the tone deaf (the atheists). At the other extreme are the mystics, the founders of religion, those who are able to experience the divine. These are your Bachs and Beethovens. Most of us are in between and just enjoy the music others create. These are the lay churchgoers.⁶⁵ This analogy parallels what is commonly referred to as ‘spiritual blindness.’ In Matthew 13:15, Jesus states “they have closed their eyes so their eyes cannot see, and their ears cannot hear, and their hearts cannot understand.”⁶⁶ In other words, they may have eyes and ears, but they fail to discern any higher spiritual truth. Those who merely see with their five senses, see the natural world, but fail to see the supernatural world. They are spiritually ‘blind.’ They fail to see anything other than what their eyes show them. Jesus then says to the disciples, “but blessed are your eyes, because they see; and your ears, because they hear.”⁶⁷ The disciples are not spiritually blind; they have developed this sixth sense Broad is hinting at. However, the question is left open as to how one acquires this ‘sixth sense.’ Is one just born with it, or can one develop it? Is ‘spiritual sight’ a gift from God? The analogy fails to answer these questions.

William James, in his 1902 book *The Varieties of Religious Experience*, compiles case study after case study of individuals who have come to faith through personal,

⁶⁵ C.D. Broad, “The Argument from Religious Experience,” 1930, in *Philosophy of Religion*, ed. by Louis Pojman and Michael Rea (Boston: Cengage, 2007), 120.

⁶⁶ NIV translation.

⁶⁷ Other passages emphasize spiritual sight over natural eyesight: “we look not at what can be seen but at what cannot be seen, for what can be seen is temporary, but what cannot be seen is eternal” 2Cor4:15. Also, “we walk by faith, not by sight.” 2 Cor 5:6

transformative experiences of the divine, rather than by means of organized religion or rational argument. The variety of these experiences has a broad range, with mystical union at one end to the mere intimation of something greater than oneself at the other. James sees the common denominator of all these experiences as a sense of the “divine presence,” or “the belief that there is an unseen order, and that our supreme good lies in harmoniously adjusting ourselves” to it.⁶⁸ James attempts to adopt the attitude of a scientific psychologist and not make any kind of ontological commitment. Rather, he limits himself to “the belief” that this unseen order is real. His approach is more psychological than metaphysical, simply noting that this belief tends to categorically apply to all people who consider themselves religious. James’ approach to religion is like that of a psychological detective, empirically investigating claims of supernatural occurrences or religious ‘phenomena, in which people see, or allegedly see, this unseen order.

James’ focus is on sudden conversion experiences, often those considered ‘mystical,’ in which the seeker appears acted upon by outside forces which have a sudden transformative effect upon their entire belief system. Mystical experiences of the divine often appear to the individual who has them as a personal form of revelation. James simply gives account after account of these personal experiences which are taken either from historical sources or from the research of Edwin Starbuck, who “amassed a collection of statements” while studying the psychology of religion at Harvard.⁶⁹ The end result is, like the experiences themselves, an account of the other world that is “much

⁶⁸ James, *The Varieties of Religious Experience*, 57.

⁶⁹ Robert D. Richardson, *William James* (New York: Mariner Books, 2007), 379.

more convincing than results established by mere logic ever are.”⁷⁰ For efficiency’s sake, let us regard the following testimony as indicative of the many that James cites. The following is a record of the conversion of an irreligious French Jew in 1842 who walked into a church while waiting for a friend:

All I can say is that in an instant the bandage had fallen from my eyes...I came out as from a sepulcher, from an abyss of darkness....On entering that church I was in darkness altogether, and on coming out of it I saw the fullness of the light...I can explain the change no better than...the analogy of one born blind who should suddenly open his eyes to the day.⁷¹

Although James himself is concerned with the fruits (the effect) of the religious experience) and not the origins (God or natural causes), in many of these sudden conversions the person believes their experience to have its source in the divine. In other words, these experiences appear to be of ‘miraculous’ interventions which have God as their source. Many of these stories offer firsthand evidence for the Calvinist doctrine of ‘election.’ God chooses to reveal something of divine reality to the person, and the experience is so compelling that the person undergoes a complete transformation of the way she sees the world. Thus James’ lectures, while supposedly philosophical, almost turn into storytelling, stories which to the people who tell them are records of insights into the highest order of reality. James sees these types of experiences as the root and cause upon which theological concepts and reasoning are based. Without the experience, the theological scaffolding built upon them may appear merely hollow and without basis. “The unreasoned and immediate assurance is the deep thing in us, the reasoned argument is but a surface exhibition. Instinct leads, intelligence does but follow.”⁷²

⁷⁰ James, *The Varieties of Religious Experience*, 74.

⁷¹ *Ibid.*, 201-2.

⁷² *Ibid.*, 75.

But how do we know that what the mystic experiences is God and not simply a hallucination? James lists four marks of mystical experiences: ineffability, noetic quality, transiency, and passivity.⁷³ Ineffability would account for placing mysticism above logic and theological rationality. The second trait, the noetic quality, states that mystics ‘just know’ the experience is real. But if one has never experienced the divine, how can one know for sure it is God one is experiencing? James says they just do (or rather that the mystics say they just do). The noetic quality of these states carries with it its own self-confirmation, so that the experience possesses “a curious sense of authority.”⁷⁴ The third trait, transiency, implies that mystical states cannot be actively sustained, and do not last long (an hour at most). The last trait, passivity, states that the mystic often does nothing to precipitate or initiate the experience; often the mystic has no control over it happening. The person feels ‘grasped and held by a superior power.’ All of this provides evidence for religious realism, in that mystical experiences very much appear to have an external source. Mystics do not attribute their experiences to natural causes, nor formulate them within a naturalistic worldview.

However, each one of the traits may be questioned. There seems to be a contradiction in James’ claim that mystical states are ineffable. If this were so then James, who is not a mystic, would be unable to analyze them. There seem to be two approaches to mysticism: first, to become a mystic oneself, and second, to analyze mystical experiences objectively from a philosophical perspective, and assess their common characteristics and truth claims about reality. If mystical experiences are truly ineffable, then the philosophical approach seems destined to failure. Plantinga notes the

⁷³ Ibid., 329.

⁷⁴ Ibid., 329.

contradiction in saying that X is ineffable. In doing so, one has said something about X, which contradicts its being ineffable.⁷⁵ As Lao-tzu states in the *Tao Te Ching*, “He who knows, does not say; he who says, does not know.”⁷⁶ While the full content of a mystical experience cannot be transmitted conceptually, it does seem that something can be said about them, or else James’ whole discussion of them is reduced to nonsense. Richard Swinburne, in *The Existence of God*, does not claim that all religious experience are ineffable, but only a few intense ones. He classifies religious experiences as public or private. In public experiences, one perceives God in a common object or in an uncommon event, which one perceives as perhaps miraculous. In private experiences, one experiences God but is able to talk about it and describe it, while a more intense experience may be beyond the ability of language to fully describe. A third possibility is that the person just has a general sense of God’s presence.⁷⁷

The noetic quality of mystical states is also problematic. James claims that this quality assures the mystic that the experience is real and not an illusion. James himself states that mystical experiences present themselves as states of knowledge to the mystic and are self-confirming, but then he, a non-mystic, brackets the true origin of these states. When people hear the story of Joan of Arc, they believe that Joan took up arms against the English because of a religious experience she had. Her actions are seen as a response to a divine reality. They are not attributed to hallucinations or imagination. St. Teresa claimed that her visions of Jesus’s hands and glorified body were beyond the ability of human imagination to conjure up. This is why the experience was self-confirming to her.

⁷⁵ Alvin Plantinga, *Does God have a Nature?* (Milwaukee: Marquette University Press, 1980), 23-25.

⁷⁶ Lao-tzu, *The Wisdom of Lao-tse*, trans. and ed. by Lin Yutang (New York: Modern Library, 1976), 257, Ch. 56.

⁷⁷ Richard Swinburne, *The Existence of God* (Oxford: Oxford University Press, 2004), 299-302.

Last, James claims the mystical experiences are transient, or of short duration, and are passive, i.e., the mystic does nothing to precipitate them. Yet these claims again are not necessarily true. The writings of several mystics claim that the experience remains with them for some time. Some state that these experiences are like seeds of higher consciousness which, when planted, continue to grow and bear fruit. There are also methods of inducing mystical states. W.T. Stace classifies mystical experiences into two kinds: introvertive and extrovertive. The extrovertive experience “looks outward through the senses,” while the introvertive “looks inward into the mind.” The extrovertive experience is usually uncontrollable and occurs spontaneously; the mystic has no power over it, and often is not able to reproduce it. Extrovertive experiences contain sensory elements, but “the multiplicity of material objects – the sea, the sky, the houses, the trees – are mystically transfigured so that the One, or the Unity, shines through them.”⁷⁸

Just about every religion has methods for actively cultivating mystical states. Hindus developed the method of raja yoga to achieve union of atman, their souls, with Brahman, the monistic godhead pervading all of reality. Buddhists use the eightfold path and meditation to achieve detachment from the world, a state of Nirvana, which may involve an unconstructed, conceptually unmediated, unifying awareness of the universe which is not necessarily supernatural. Sufis claim to achieve mystic states by discarding all that is not God. Jews follow the Kabbalah, which was developed out of the unwritten, oral tradition which was allegedly revealed to Moses atop Mt. Sinai. Christian ‘orison,’ or centering prayer, may involve earnestly begging God for a glimpse of his being, or to

⁷⁸ Stace, *Mysticism and Philosophy*, 61.

help one meditate so as to become aware of higher consciousness. So it appears mystics may initiate the contact themselves by acting upon the maxim, 'seek and ye shall find.'

8. Argument from Near-Death Experiences

Does God exist? Does the soul survive death? Most people might answer, 'I don't know. I haven't died yet.' While most of us are not mystics in this life, if God exists, sooner or later all of us will become mystics. If the soul survives death, then when we die we will all experience God in the way that mystics claim to in this life. So will we have to wait until we die to find out if there is an afterlife, a loving God with characteristics such as theism portrays? No. Some people have died and then been resuscitated. All we have to do is ask them, What did you experience? Reports of near-death experiences go back as far as Plato. In the book 10, section 3 of the *Republic*, Plato tells the story of Er, a soldier who is killed in battle. He is transported to the afterlife where he watches the dead judged. Those who led a just life are allowed entrance into heaven where they obtain their reward; those who led unjust lives are led into the earth where they are punished. He was also allowed to witness souls who were to be reincarnated pick their next life before drinking from the River of Forgetfulness. However, this story may have its basis more in Plato's attempt to defend the idea that being just is its own reward.

Up until the 1970s there was really nothing in the medical literature about near-death experiences. But with the rise of modern technology, it was possible to bring many patients back from the brink of death, who might otherwise have died. Raymond Moody

was an undergraduate at the University of Virginia in the 1960's when he met George Ritchie, who was teaching psychiatry. Ritchie had a NDE (near-death experience) in 1943 when he was suffering from pneumonia while in the army. He went on to write an account of his experience in 1978 in a book titled *Return from Tomorrow*. He claims that he met Jesus, who emanated love and compassion and allowed him to see heaven and hell. The central message Jesus imparted to him is that each of us is a child of God, yet like Adam, we live as though separated from God. God calls out to each of us, as he did to Adam, "Where are you, Adam?" In order to make it into the highest realm of life after death, one must learn to love like Jesus.⁷⁹ This Ritchie sees as the message of the cross.

Moody then started teaching philosophy at East Carolina University. While discussing Plato's *Phaedo* and the arguments for the immortality of the soul, several students came forward claiming they had a near-death experience like Ritchie's. When Moody entered medicine several years later, he began collecting stories about near-death experiences. His 1975 book, *Life after Life*, is based on 150 people's accounts of their NDEs. Moody claims there are roughly fifteen common elements of NDEs: like mystics, people who have had NDEs claim that the experience is indescribable, or ineffable; objectively they hear the doctors announce that they are dead, but subjectively they still feel alive, outside their bodies looking at them, able to perceive everything that is going on around them with great clarity, yet no one seems able to perceive them; experiencing a painless state of peace and quiet; hearing some kind of whistling noise similar to the wind or beautiful music; traveling down a dark tunnel; leaving their body and the world behind; coming out into warm accepting light, meeting deceased relatives

⁷⁹ George Ritchie, *My Life After Dying* (Norfolk, VA: Hampton Roads Publishing, 1991), 142, 145-7.

and friends; meeting a Being of light, some kind of religious figure, be it God or an angel; being asked a question, what good they had done with their life (the central Socratic question), how loving they were towards others, what they liked best about life; some report seeing an instantaneous review of their life, with their thoughts and deeds somehow externalized; experiencing a border or limit which they know is such that if they cross there is no return; coming back to their bodies; telling others; describing the effect it has had on their lives; conceiving a new view of death; corroborating their experience by checking with doctors and others about the events that took place while they were near death.⁸⁰

From the reported NDEs, Moody composes a generic near death experience that include the most commonly cited characteristics:

A man is dying, and as he reaches the point of greatest physical distress, he hears himself pronounced dead by his doctor. He begins to hear an uncomfortable noise, a loud ringing or buzzing, and at the same time feels himself moving very rapidly through a long dark tunnel. After this, he suddenly finds himself outside of his own physical body, but still in the immediate physical environment, and he sees his body from a distance, as though he is a spectator. He watches the resuscitation attempt from this unusual vantage point and is in a state of emotional upheaval. After a while, he collects himself and becomes more accustomed to his odd condition. He notices that he still has a 'body,' but one of a very different nature and with very different powers from the physical body he has left behind. Soon other things begin to happen. Others come to meet and to help him. He glimpses the spirits of relatives and friends who have already died, and a loving, warm spirit of a kind he has never encountered before – a being of light – appears before him. This being asks him a question, nonverbally, to make him evaluate his life and helps him along by showing him a panoramic, instantaneous playback of the major events of his life. At some point he finds himself approaching some sort of barrier or border, apparently representing the limit between earthly life and the next life. Yet, he finds that he must go back to the earth, that the time for his death has not yet come. At this point he resists, for by now he is taken up with his experiences in the afterlife and does not want to return. He is

⁸⁰ Raymond A. Moody, *Life after Life, The Investigation of a Phenomenon – Survival of Bodily Death* (Atlanta: Mockingbird Books, 1975), 25-76.

overwhelmed by intense feelings of joy, love, and peace. Despite his attitude, though, he somehow reunites with his physical body and lives. Later he tries to tell others, but he has trouble doing so. In the first place, he can find no human words adequate to describe these unearthly episodes. He also finds that others scoff, so he stops telling other people. Still, the experience affects his life profoundly, especially his views about death and its relationship to life.⁸¹

If veridical, near-death experiences confirm that death is not the end of human life. They also appear to confirm the presence of a soul that can exist separate from the body. Near-death experiences suggest the complete opposite of Michael Silberstein's claim "the philosophy of mind is over," that reductionism has triumphed over pre-scientific Scholastic views of the mind. Nevertheless, a naturalist would dismiss near-death experiences as being supernatural by simply coming up with any number of possible natural explanations: outright fabrication, the result of hypoxia, the release of endorphins by the brain to ease the pain of death, a drug induced delusion or hallucination, or a projection based on some prior expectation.⁸²

However, it is very difficult to argue that a NDE is a hallucination because many people are able to report events that actually happened. One woman who had a NDE was not only able to describe what the doctors were doing to keep her alive, but also claimed that, as she floated up out of the hospital, she saw a blue shoe on a ledge. A social worker named Kim Clark, testified that she went and found the shoe in the exact location that the woman said it would be.⁸³ Again, in a recent book, Todd Burpo recounts how his son Colton, as a small boy of four, suffered from a case of appendicitis. Colton claimed

⁸¹ Ibid, 23-24.

⁸² Michael Sabom, M.D., *Recollections of Death, A Medical Investigation* (New York: Simon & Schuster, 1982), 166-174.

⁸³ Jeffrey Iverson, *In Search of the Dead; A Scientific Investigation of Evidence for Life After Death* (New York: HarperCollins Publishers, 1992), 67-70.

he met his great grandfather ('Pop') in heaven, whom he never met before, but when shown pictures, was able to correctly identify as his great grandfather. He was also able to tell his mother that she had a miscarriage and met his sister in heaven, which is information they had never shared with him.⁸⁴ Pim van Lommel tells the story of a five year old who went into a coma after contracting meningitis. He claims he 'died' and met a sister he never knew he had, as she died before he was born and his parents hadn't told him about her. Only when he correctly told them her name, Rietje, did his parents believe him.⁸⁵

Further evidence that NDEs are veridical is the transformative, life-changing effect they have on people, similar to those who have a mystical experience. Their fear of death is gone, and they develop a greater love for other people, and become less materialistic and concerned with financial success. Van Lommel states, "Almost all ephemeral and material things, such as a lot of money, a big house, or an expensive car, become less important. People also identify much less with their own body.... 'I can live without my body, but apparently my body cannot live without me.'"⁸⁶ Instead, people who have had NDEs say the experience made them question how well they loved others while alive. One would not expect this kind of radical transformation if these experiences were simply hallucinations.

9. Argument from Parapsychology

⁸⁴ Todd Burpo, *Heaven is for Real* (Nashville: W Publishing Group, 2011), 94-96.

⁸⁵ Pim van Lommel, M.D., *Consciousness Beyond Life: The Science of the Near-Death Experience* (New York: HarperCollins Publishers, 2011), 71-2.

⁸⁶ *Ibid.*, 55.

The argument from parapsychology is similar to the argument from religious experience; it is viewed skeptically by those who haven't experienced paranormal phenomena themselves, but to those who have, it is self-confirming. Professor David Ray Griffin of the University of Claremont provides an example which might be considered a paradigmatic paranormal event. His dean once told him the story of a couple he knew who hung a picture on a wall, only to find it the next morning on the floor. This process repeated itself over and over. The naturalist would appeal to 'natural causes,' saying that the picture just fell. However, this was ruled out because it would have broken if it had.⁸⁷ In instances like these, supernatural explanations may trump natural ones. D.D. Homes considered himself to be on a "mission to demonstrate immortality."⁸⁸ He supposedly was witnessed several times levitating, and had the ability to make an accordion play by itself.

A more recent example of the paranormal reminds one of Socrates' daimon. It tells of a person who visited the World Trade Center the day before it was destroyed and heard a 'voice' warning her of impending danger. She tells the story in such a way that the 'voice' issuing this warning appears to be external to her consciousness, and not a product of it.

I was in NYC for a trip I make for work almost every year to visit money managers on Wall St. We'd stay at either the Marriott WTC, the Plaza or the Waldorf. Every time I'd stay at WTC I'd whine because I like staying uptown better – nicer rooms, more to do at night. This time was no exception. I stayed at the WTC Marriott from 8/8 to 8/11/01. From the moment I got to the hotel, I felt this strange, overwhelming urge to go to the Observation Deck to check out the view. I felt like I had to go up there. After dinner on Thursday, 8/9, I went to the top of the WTC because I felt drawn there – no, actually pulled there. I went alone at about 9 p.m. It was

⁸⁷ Griffin, David Ray, *Parapsychology, Philosophy, and Spirituality* (Albany: State University of New York Press, 1997), 7.

⁸⁸ Arthur Conan Doyle, *The History of Spiritualism* (Amsterdam: Fredonia Books, 2003), 186-190.

a beautiful night. Clear and warm. The guy sitting there at the top of the stairs monitoring access to the roof was really nice and we had a long chat. My first thought talking to him was, "I wonder if he'll make it." The next thing that happened was when I was looking out across NYC. I got a strange, dark, oppressive 'voice' that said, "Take a look, a good look. You'll NEVER see this again! It is all going away!" It was sneering, gleeful and demonic. I felt I was in the presence of evil. Dark, cruel, evil. Oppressive evil. I thought, "This is silly, these buildings survived a bombing, what could possibly happen to them?" My rational mind took in the awesome size of the towers and thought what I was feeling was silly. I was thrown by the fact that I felt such evil. But the sneering, demonic being hovering over the WTC retorted that the buildings would be gone, GONE. I would never see this again. "Take a look, a good, long look because you'll never see this again." "Impossible," said my mind.⁸⁹

Following Williams James method of examining the consequences such encounters have had on those who have experienced them, it is possible to assess the experience itself. There are repeated stories of people moving into houses, only to find them haunted, and then fleeing the house never to come back. A house is probably the largest investment a person will make in his or her life. Why would a rational person invest such a large amount of money to buy a house, only to be driven from it? Why would this process repeat itself with each new owner? It's not rational to flee from such a large investment for no good reason. An actual encounter with a demonic presence in this case is a more likely explanation. How else does one explain stones being thrown from a corner of the room which is empty, a phenomenon frequently reported at Coalhouse Fort at the mouth of the Thames River in Tilbury, England?⁹⁰ How does a naturalist explain the video taken from a New Mexico jail closed circuit camera of what appears to be a ghost walking across a secured area, passing through several chain link fences in the process?⁹¹ How does the naturalist explain the widespread phenomena of

⁸⁹ http://paranormal.about.com/library/blstory_october02_21.htm.

⁹⁰ <http://ghostwatch.net/ghostwatch/report/41-coalhouse-fort>

⁹¹ <https://www.youtube.com/watch?v=Qw6iPBb5cqo>

dreams and premonitions people have of the future? How does the naturalist explain the seer Emmanuel Swedenborg's ability to simultaneously 'see' a fire in Stockholm that threatened his house, while he was in London, and then breathe a sigh of relief after several hours that it missed his house? How does a naturalist explain the prophecies made by Edgar Cayce, which are too numerous and complex to discuss here? The Theist claims to have an answer, and argues the naturalist does not.

10. Argument from Morality

It is a central tenet of Plato's moral realism that the Good is discovered, it is not a human construction or invention. In the allegory of the cave, one is chained from birth in a fire-lit cave. Breaking free, one finds one's way out of the cave into the sunlight.⁹² One 'discovers' the sun; it is not an invention or social construction. It is a reality independent of the individual who discovers it. In the allegory the sun stands for the Good. One discovers something that already exists, that has its own independent reality. Once you discover it, you realize you were previously ignorant. Now you can navigate the world not only by the light of the sun, but navigate the world morally, being able to judge what is right and what is wrong, by the knowledge of the good. Christian theologians like Augustine, who deny reincarnation, have claimed the Form of the Good is revealed in the Incarnation. Jesus is the embodiment of the divine Form of the Good. Jesus is the only person said to have lived a sinless life, a truly good life. One comes to know the Good not through anamnesis, or recollection, but by reading the Bible.

⁹² Republic, Bk. VII, 514a-520a.

Scripture becomes the equivalent of the immutable forms. “The grass fades and the flower withers, but the word of God stands forever.” (Isaiah 40:8)

The goal of scientific naturalism is to describe the world strictly in terms of empirical facts, with no room for values. Nature is said to be value-free. Values therefore seem to suggest a realm that is non-natural. In a purely naturalist world, how can there be values? If values cannot be found in space and time, an argument can be made that values serve as a window or corridor to the God who is the source of all value. Values may point to, or at least give credence to, a transcendent God who is the source of these values and goodness itself. While science is said to be descriptive, ethics and religion can and do make prescriptive statements. A strictly naturalistic worldview cannot tell you what you ought to do. Metaphysical naturalism cannot make normative statements about how one ought to follow this or that method in science. In a purely naturalistic worldview, all you can do is describe, you cannot prescribe. So how can you have normativity? Last, if naturalism is true, and all of human behavior is subject to the pressures of evolution and natural selection, one would think that behaviors which are only geared toward survival will be favored, and these behaviors may be very much at odds with the demands of morality.

In Dostoevsky's *The Brothers Karamazov*, Dostoevsky writes (the translations say something similar, but not exactly), “If God does not exist, then everything is permitted.” Many atheists disagree. Sam Harris and Christopher Hitchens finds atheists to be very well mannered, and attribute all violence and *auto-de-fes* to be religiously inspired. But the metaphysical naturalist cannot deny that it is hard for a naturalist to ground moral values without committing some form of the naturalistic fallacy. Kant as

well seems to agree with Dostoevsky: God is needed to ensure that the pursuit of virtue and the good is rewarded proportionately with happiness. If you remove a divine being, one who metes out justice in the afterlife, the warrant to aspire to a good lifestyle is undermined. God is like the great policeman in the sky, who sees you even when you're alone, and is needed just as much as the cop on the street. What happens if you remove the police? This occurred in Montreal in October of 1969 when the police went on strike. Anarchy, murder, and mayhem resulted. The National Assembly of Quebec had to order the police back to work. Similarly, the argument goes, if you remove God from the picture, the lack of fear of punishment in the afterlife will give rise to lawlessness. As much as naturalists don't like to admit it, revealed religion serves as the basis of much of Western morality and its legal codes, as well as the perceived enforcer who gives sanction to those laws.

In the conclusion to the *Critique of Practical Reason*, Kant writes "Two things fill the mind with ever new and increasing admiration and reverence, the more often and more steadily one reflects on them: *the starry heavens above me and the moral law within me.*"⁹³ It is our invisible self, which contains "the moral law which reveals to me a life independent of animality and even of the whole sensible world."⁹⁴ While Kant is known as the destroyer of metaphysics for his refutation of the arguments for God's existence and dismissing speculative theology, the metaphysics that underlies his analysis of morality is often forgotten. In the *Critique of Pure Reason*, free will and necessity generate the third antimony, and any attempt to prove either will result in a contradiction.

⁹³ Immanuel Kant, *Critique of Practical Reason*, trans. by Mary Gregor, (Cambridge: Cambridge University Press, 2015), 129.

⁹⁴ *Ibid.*, 129.

But in the *Critique of Practical Reason* free will is seen as one of the preconditions for morality. ‘Ought’ implies ‘can’ for Kant. He states “when the moral law commands that we *ought* now to be better men, it follows inevitably that we must be *able* to be better men.”⁹⁵ Moral obligation would be meaningless if we were not free to respond to duty. Freedom is incompatible with materialism and therefore is a rejection of naturalism (which is perhaps the reason Hegel equated the idea of Spirit with Freedom). Only a metaphysic that remains open to God can account for freedom.⁹⁶ For this reason, Kant argues that the three postulates of practical reason, or conditions which must be presupposed but are ultimately unprovable, for morality to exist are: the existence of God, the immortality of the soul, and free will.⁹⁷

The fact that we can make moral decisions, for which we are held accountable, is testament to a self that is non-spatiotemporal, a self that is beyond the world of appearances and hence bound not by the laws of nature but by the moral law. Naturalism nearly entails determinism, a point even Dennett admits. This would make holding a person responsible for their actions absurd. Even the non-reductivist, emergentist attempt to salvage some form of dualism still turns consciousness into an epiphenomenon which supervenes on brain processes and is causally inert. This violates everyone’s common sense intuition that he or she is a causal agent. As a result, the argument from both morality and freedom is one that is very difficult for the strict naturalist to overcome. It comes close to a *reductio ad absurdum* of the position. William James argues in ‘The

⁹⁵ Immanuel Kant, *Religion Within the Boundaries of Mere Reason*, trans. by Theodore M. Greene and Hoyt H. Hudson (New York: Harper Torchbooks, 1960), 46. 6:50

⁹⁶ Karl Ameriks, ‘Immanuel Kant,’ in *Columbia History of Western Philosophy*, ed. by Richard H. Popkin (New York: Columbia University Press, 1999), 500-1.

⁹⁷ Peter Angeles, *Dictionary of Philosophy*, s.v. ‘postulates of practical reason.’

Dilemma of Determinism’ that no one wants to say that the “Brockton murder was called for by the rest of the universe.”⁹⁸ Theism is able to maintain causal agency and moral realism, while naturalism is at a loss to explain them.

11. Conclusion: The Cumulative Case for God’s Existence as a Tipping Point

The logical positivist Friedrich Waismann, in his essay ‘How I See Philosophy,’ argued that philosophical arguments are not “supposed to be proofs and refutations in a strict sense. What the philosopher does is something else. *He builds up a case.*”⁹⁹ Each person, after weighing the evidence presented by the philosopher, has to come to his or her own decision. Waismann argues that no philosopher ever ends his case with, *Q.E.D.*, because no philosopher ever establishes his case conclusively.¹⁰⁰ “For this reason, no ‘computing machine’ could do the work of a judge. If the conclusion necessarily followed from its premises, no judge would be needed.”¹⁰¹ Such is the attempt to establish the case for theism or naturalism. Contrary to the claims of the New Atheists, a case can be made for theism. Any Christian on his way to Church on Sunday can give you a good reason why he is going to a Christian church, and not a temple dedicated to Zeus. That theism is nothing but fideism, or blind faith involving nothing other than a leap of faith with no evidence whatsoever to support it, makes a straw man of religious faith. The theist sees evidence everywhere, as the best explanation for why there is a

⁹⁸ William James, “The Dilemma of Determinism,” in *Philosophy, The Quest for Truth*, ed. by Louis P. Pojman and Lewis Vaughn (New York: Oxford University Press, 2014), 412.

⁹⁹ Friedrich Waismann, ‘How I See Philosophy,’ in *Logical Positivism*, ed. by A.J. Ayer (Glencoe, IL: Free Press, 1959), 372.

¹⁰⁰ ‘Quod erat demonstrandum,’ meaning ‘which is what had to be proved.’ The Urban Dictionary defines this as the mathematician’s way of saying, ‘I win.’

¹⁰¹ Waismann, ‘How I See Philosophy,’ in *Logical Positivism*, 373-5.

universe, why there are rational beings, why there are moral values, and why there is religious experience. The naturalist doesn't see any of this as evidence, or doesn't want to see it as evidence. Waismann concludes by stating, "To say that metaphysics is nonsense is nonsense. It fails to acknowledge the enormous part played at least in the past by those systems."¹⁰² It also fails to see that those systems may have been passed on down the ages because many people have found them to be a valid map of reality.

Rem Edwards believes it is the job of the philosopher to explain "as best he can why he believes what he does and why he rejects the chief alternatives to his position....Many lines of converging evidence must be put together into a coherent case."¹⁰³ Each argument adds a stone to the pile, each religious experience adds a stone to the pile, each reading of a religious person's understanding of their faith adds a stone to the pile. The more near-death experiences one reads about, or the more people one comes into contact with who claimed to have had one, the more stones added to the pile. The more one has experiences of 'thin places' where the veil separating this world from the next is less opaque, the more stones are added to the pile. The more one reads the arguments for God's existence, or reads Scripture, or experiences paranormal events which defy natural explanation, the more stones are added to the pile. One day the pile is no longer a pile. Eventually a tipping point is reached and the pile turns into a heap. Faith crystallizes. Each individual argument or experience might not convince one of God's existence. Yet taken cumulatively, they might push one towards the tipping point at which faith precipitates. A drop in temperature of a degree or two does not make it

¹⁰² Ibid., 380.

¹⁰³ Rem Edwards, *Reason and Religion* (New York: Harcourt Brace Janovich, 1972), 225.

snow. Cumulative drops of a degree or two eventually result in the temperature dropping below 32 degrees. A tipping point is reached, and suddenly rain becomes snow.¹⁰⁴

¹⁰⁴ Malcolm Gladwell, *The Tipping Point, How Little Things can Make a Big Difference* (New York: Black Bay Books, 2002), 13.

CHAPTER FIVE –
NATURALISM: DISTINGUISHING METAPHYSICAL FROM
METHODOLOGICAL NATURALISM

Science is the measure of all things, of what is that it is and of what is not that it is not.¹ – Wilfrid Sellars

The methods of science, it is claimed, ‘give us no purchase’ on theological propositions – even if the latter are true – and theology therefore cannot influence scientific explanation or theory justification. Thus, science is said to be religiously neutral, if only because science and religion are, by their very natures, epistemically distinct.² – Alvin Plantinga

By its very nature, science is obliged to leave out any appeal to the supernatural, and so its explanations will always sound naturalistic and purely physicalist.³ – John Haught

Everywhere science is enriched by unscientific methods and unscientific results... the separation of science and non-science is not only artificial but also detrimental to the advancement of knowledge. If we want to understand nature, if we want to master our physical surroundings, then we must use *all* ideas, *all* methods, and not just a small selection of them.⁴ – Paul Feyerabend

The idea of a fixed method, or of a fixed theory of rationality, rests on too naive a view of man and his social surroundings...there is only *one* principle that can be defended under *all* circumstances and in *all* stages of human development. It is the principle: *anything goes*.⁵ – Paul Feyerabend

Variety of opinion is necessary for objective knowledge. And a method that encourages variety is also the only method that is comparable with a humanitarian outlook.⁶ – Paul Feyerabend

All we can say is that scientists proceed in many different ways, that rules of method, if mentioned explicitly, are either not obeyed at all, or function at most like rules of thumb.⁷ – Paul Feyerabend

¹ Wilfrid Sellars, ‘Empiricism and the Philosophy of Mind,’ in *Science, Perception, and Reality* (London: Routledge & Kegan Paul, 1963), 173.

² Alvin Plantinga, ‘Methodological Naturalism,’ *Philosophical Analysis Origins & Design* 18:1.

³ John F. Haught, ‘Darwin, Design, and Divine Providence,’ in *Debating Design: From Darwin to DNA*, ed. by William Dembski and Michael Ruse (Cambridge: Cambridge University Press, 2004), 231.

⁴ Paul Feyerabend, *Against Method* (London: Verso, 1993), 305-6.

⁵ *Ibid.*, 18-19.

⁶ *Ibid.*, 31-2.

⁷ Paul Feyerabend, *Against Method* (London: Verso, 2010), 253.

1. How Metaphysical Naturalism differs from Methodological Naturalism

Chapter Two established the central characteristics of naturalism, and examined the different kinds of naturalism as well as discussing some current naturalists.

Metaphysical naturalism is the view that the natural world is all that exists and the central substantive feature of metaphysical naturalism is its anti-transcendentalism. As such, there are no supernatural divine beings or realm of transcendent values or ideas, no immaterial souls or spirits, and no disembodied minds.⁸ Alvin Plantinga defines ‘naturalism’ as simply “the thought that there is no such person as God, or anything like God.”⁹ Nothing is allowed for that exists outside the processes of nature and the visible world. Anything that comes to be can in principle be given a natural explanation. This holds for strict naturalists, i.e., physicalists of the reductionist type who often are eliminativists, and weak naturalists as well, i.e, those who are non-reductionists or emergentists.

This chapter will discuss how metaphysical naturalism is related to the scientific method. Methodological naturalism says that since science is the empirical study of the natural world, “scientific theories should be neutral on the question of whether a supernatural God exists.”¹⁰ Methodological naturalism, being a method rather than a metaphysic, is not necessarily incompatible with theism, or belief in a reality which transcends the physical. The scope of methodological naturalism studies the Book of Nature, not Revelation, and limits itself to the investigation of natural causes and only

⁸ Angeles, *Dictionary of Philosophy*, s.v. ‘naturalism.’

⁹ Alvin Plantinga, *Where the Conflict Really Lies* (New York: Oxford University Press, 2011), ix.

¹⁰ Elliot Sober, “Why Methodological Naturalism?” In G. Auletta, M. LeClerc, and R. Martinez (eds.), *Biological Evolution: Facts and Theories: A Critical Appraisal 150 Years after The Origin of Species*, 2011, (Rome: Gregorian Biblical Press, 2011), 359-360.

allows for explanations which are natural. Daniel Dennett uses the imagery of skyhooks (a supernatural “‘mind-first’ force or power” such as a deity that resides in the sky) to describe theism, and cranes (natural processes) to describe naturalism. Metaphysical naturalists would deny the existence of skyhooks and argue only cranes exist. Methodological naturalists would remain neutral on the existence of skyhooks, but try to explain phenomena using only cranes.¹¹

It is possible for a scientist to use methodological naturalism in his scientific studies, but adhere to theist beliefs as part of his or her larger metaphysical framework. However, if one begins within the framework of metaphysical naturalism, methodological naturalism is the only method which offers an accurate depiction of reality. Any theistic causal explanations are necessarily false. However, if one begins within the larger framework of theism, methodological naturalism may be only one of several different ways of investigating reality. In other words, if metaphysical naturalism is a true description of reality (the physical universe is causally closed), then methodological naturalism is a necessity, and the only proper way to investigate reality. If metaphysical naturalism is not a true description of reality (the universe might be causally open), then methodological naturalism is not necessarily the only proper method, and there might be non-natural events which occur in the universe which methodological naturalism cannot account for (the type of events the Bible records). There might also be non-empirical ways of knowing other than methodological naturalism (*a priori* reasoning, or intuition), or types of data and evidence that elude scientific investigation (mystical experience or the paranormal).

¹¹ Dennett, *Darwin's Dangerous Idea*, 74-83.

There are several problems facing both metaphysical naturalism and methodological naturalism. The problem for metaphysical naturalism is whether or not it is merely a dogmatic assertion, an assumption, or whether there are good epistemic grounds to favor it as the most likely ontology. This is an important issue, because “the naturalist claims to have epistemic, explanatory, and methodological superiority on his or her side, especially when naturalist positions are understood to have the authority of science behind them.”¹² So by what means does the naturalist justify their metaphysic and method so as to gain the epistemically privileged ground? A naturalist ontology cannot be justified by reason of the naturalistic method, since the reasoning is circular, as one assumes what one seeks to prove. If one from the outset limits oneself to finding only what is within one building, it is impossible to make claims as to what exists outside that building. It also leaves us with the problem of which came first, the worldview or the method?

2. Assuming Metaphysical Naturalism or Theism is true, what follows?

2.1 Can one detect God acting in the world?

Let us consider the outlook that follows from adopting either of the two alternative metaphysical starting points, naturalism and theism. What follows if we accept theism as our starting point, if we begin by assuming that theism is true? If theism is true, then metaphysical naturalism is false, as a supernatural being exists. This would be the position that Augustine, Aquinas, and Plantinga, would endorse. If the theist

¹² William Lane Craig and J.P. Moreland, *Naturalism: A Critical Analysis* (New York: Routledge, 2002), xii.

worldview is true, God is not only transcendent, but immanent, acting in the universe through primary and secondary causes. So according to this worldview, it is perfectly conceivable that God can act in the world to cause physical effects. For example, let us say in response to prayers, God miraculously cures a cancer. Now from the viewpoint of methodological naturalism, assuming it to mean that the only path to knowledge is by using the methods of natural sciences, there are only two options available. One could wrongly attribute the cure to natural causes by saying the immune system destroyed the tumor, or one could simply say the action by which the cancer vanished is unknown. In the first instance, what we have is a false negative, in that we have incorrectly attributed the cure to natural causes, when in fact the cure was by supernatural means. In the second instance, we have avoided the error of falsely identifying the cause; nor have we overstepped the boundaries of methodological naturalism. We simply stated that we do not have a natural explanation for the event; if the cure was of supernatural origin or not, that cannot be determined by the method available.

Now, let us now assume the opposing metaphysical position, that metaphysical naturalism is true. All that exists is the world of nature, and theism is thereby false. This is the position of Dennett, Dawkins, Hitchens, Harris, and the Churchlands. Once again, we have a cancer that suddenly or inexplicably disappears. Since everything is the result of natural, physical processes, let us assume that it is the immune system combined with treatment which successfully kills the tumor, and not divine miraculous intervention. If the physician, using methodological naturalism, determines this to be the cause, then he or she has correctly identified the cause. If he or she can't explain the phenomena, say because these types of cancer don't usually respond to treatment, then the physician

should exercise diagnostic humility and announce that the cause is unknown. If the physician is a metaphysical naturalist, he/she believes the cure is stated as unknown not because it might be miraculous (which is *a priori* ruled out), but because science is not yet advanced enough to detect the cause. If the physician was a methodological naturalist, but not a metaphysical naturalist, the doctor cannot state any suspicion the cure was miraculous since only natural explanations count. A third alternative is that a doctor could reject methodological naturalism and adopt a scientific methodology that was open to supernatural as well as natural explanations, and declare the only way the cancer could have gone into remission was by supernatural means. In the third example, only this doctor would be able to suggest the cause of the remission is supernatural.

If the sole difference between the methods of science, and methodological naturalism, is that the latter disallows non-natural causation, then this entails that the naturalist can distinguish between natural and non-natural processes. But this might prove very difficult. The Catholic Neo-Thomist position follows Aquinas's distinction between primary and secondary causes. Aquinas asserted that God is the initial, primary cause of the universe. God created the material elements of the world with their own nature, and their causal interaction is now governed by secondary causes, whose 'natural' causation science discovers. If the Creator is free "to act 'beyond nature' ...bringing about departures from that order," then the Creator can bypass the secondary causes and miraculously act by means of a primary cause.¹³ Methodological naturalism can be formulated so as to say that the limits of its study are confined to God's secondary, rather than primary, causes. Evolution could follow a strictly natural process, in that the

¹³ Ernan McMullin, 'Varieties of Methodological Naturalism, in *The Nature of Nature*, ed. by Bruce Gordon and William Dembski (Wilmington, DE: Intercollegiate Studies Institute, 2011), 87.

process follows only secondary causes. However, even with this view, there is a difficulty for the metaphysical naturalist, for on it, God is the sustainer of the universe. This means that without God, there would be no ‘natural’ processes at all. So in a sense, all processes are somehow divine in that they are dependent upon God. Aquinas talks of God ‘infusing’ creation with God’s own being. To the extent that the theist claims that natural secondary processes are dependent upon and derived from God’s ability to govern and sustain them, they are in some sense causally dependent upon God, since God is the author of their natures.

2.2 Primary and Secondary Causes vs. Concurrence

Ernan McMullin, an advocate of the Catholic tradition, notes that the Reformed tradition is suspicious of the Thomist and Aristotelian conception of natures, and believes they put too much of a constraint on God’s freedom. The Reformed tradition follows the voluntarism of Scotus, which states that God’s will is sovereign and not bound by rationality. The nominalist position advocated by Ockham denies the existence of essential natures in things. There is nothing either necessary or recurrent in nature, and everything exists only because it is willed by God.¹⁴ In other words, there are no secondary causes, only primary ones. One cannot distinguish between primary and secondary acts of God; they are both said to be ‘concurrent.’ Al-Ghazali is the Arabic version of Ockham, as he also denies that there are any necessary causal connections. He held that “Observation proves only a simultaneity, not a causation, and in reality there is

¹⁴ Ibid., 87.

no other cause but God...the apparent and alleged causal connections among things other than God are really due to God's direct action."¹⁵ The overall effect of this position is that the line between the natural and supernatural is blurred. So if the naturalist insists that only 'natural' processes and causal explanations are allowed, by what criteria does one distinguish 'natural' events from 'supernatural' ones? The concurrentist position says you can't. The entire universe is a burning bush or a manifestation of the creator's will. All of nature gains its being from God. Remove God's willing the universe and everything collapses.

Many people who saw Jesus while he was alive saw nothing supernatural about him. Others claimed to have witnessed him perform one supernatural event after another, or even claimed that he himself was the supernatural event. Others did not. So what one sees, natural or supernatural causality, isn't always apparent to the senses. The naturalist attributes the extinction of dinosaurs to a large asteroid hitting the earth 65 million years ago. But who's to say God didn't direct the asteroid to hit the earth? Can the naturalist rule out this possibility? If God can act through secondary causes in the way that he does in primary causes, then God could certainly cloak His causation in ways that appear 'natural' when in fact they are supernatural, and thus invisible to the methodological naturalist. If the burden of proof is on the metaphysical naturalist to prove that only the natural world exists, he would have to show that the natural cannot be supernatural. That seems like a very difficult, if not impossible, task.

Similarly, how can the naturalist determine that a variation has arisen through strictly natural processes, and was in no way guided by God, if God could act in such a

¹⁵ Julius R. Weinberg, *A Short History of Medieval Philosophy* (Princeton: Princeton University Press, 1974), 124, 122, 134.

way so as to appear completely natural? If God, foreseeing Hitler's intentions, decided to throw a heart attack Hitler's way, would the coroner be able to detect the supernatural forming of the blood clot that killed him, or merely attribute the death to natural causes? An atheist might use this as an example to show that God does not exist, because a good God would have caused Hitler to have a heart attack.¹⁶ The theist could always respond, how do you know there weren't a thousand potential Hitlers, all worse than the real one, to whom God did throw a heart attack their way, but you never knew that because they all purportedly died from 'natural' causes? If a theistic God has the ability to act directly by means of special creation, then such a God could also likely act in such a way to make supernatural causes indistinguishable from naturally occurring ones. A scientist investigating a variation would have no way of determining if the variation was caused by solar radiation generating a genetic mutation, or by a direct act of God. All that the scientist would see is that a variation has arisen, but not whether its cause was of natural or supernatural origin.

If the scientist is unable to discern the difference between a natural cause and a supernatural one, how can the criterion in methodological naturalism that only natural causes count, be justified? It can't. God could have directly caused life to begin, or, as the author of nature, God could have done so indirectly in a way that resembled the 'natural' secondary processes of the Miller-Urey experiment, with lightning strikes forming organic compounds out of a primordial soup of inorganic water, methane, ammonia, and hydrogen. Similarly, God as the author of creation could have caused the first eukaryotic cell to appear directly, or done so in such a way as to make it look like the

¹⁶ B.C. Johnson, 'Why Doesn't God Intervene to Prevent Evil?' in *Philosophy, The Quest for Truth*, ed. by Louis Pojman (Oxford: Oxford University Press, 2014), 123.

result of a random saltation in which one prokaryote absorbed another cell and turned it into its nucleus. Either way, directly or indirectly, God is the cause. The naturalist cannot therefore rule out that it was God who caused the ‘irreducible complexity’ of the eye by guided variation (primary causality), or that God willed it to happen by means of strictly natural, unguided processes (secondary causality). In other words, Daniel Dennett’s cranes could all be skyhooks, and there is no way to tell them apart.

If this is the case, then all methodological naturalism seems to be saying is that all *interpretations* of events must be labeled ‘natural,’ even though there is the possibility they are of supernatural origin. It is just that we can’t tell the difference. Naturalists might justify this conclusion by appealing to Ockham’s razor, which states that the simplest explanation is the most likely to be true. But in the case of Thales’s theory that all is water, versus the modern periodic table of elements, which states that there are roughly 118 different elements, Ockham’s razor would have you side with the wrong theory.¹⁷

The naturalist’s emphasis on the interpretation of all events as ‘natural processes’ only, i.e., as having or needing no supernatural dependence, doesn’t even get off the ground for the theist who sees God as the necessary creator and sustainer of the universe’s being. If the scientist attributes causality only to ‘nature,’ and nature is in fact part of a supernatural causal chain that began with God, then the scientist’s explanation is wrong. When the wind blows, how can the scientist be certain it is a result of the natural process of the earth’s heating and cooling of the atmosphere, and not God making the wind move? How can the scientist tell that what is merely ‘natural’ must exclude what is

¹⁷ Jim Holt, *Why does the World Exist?* (New York: W.W. Norton & Co., 2012), 70.

supernatural, when it is a logical possibility that this is a world which only *appears* to be governed by ‘natural’ processes, when in fact the whole natural process is created, sustained, and guided by a supernatural being? As a logical possibility, it cannot be ruled out. While the naturalist might respond, “we have no reason to think it is,” the fact remains, metaphysical naturalists cannot rule it out and hence cannot prove that the natural world is all that exists.

Nevertheless, strong methodological naturalism does rule it out. It seeks an empirically adequate explanation, one that is ‘neutral’ concerning the supernatural. Why? Parsimony? Ockham’s razor? Because ‘only’ allowing natural processes is a simpler explanation because it only invokes one metaphysical entity rather than two? But this might be missing the whole long causal explanation that governs the causal chain. Some philosophers, such as Descartes and Plantinga, believe that theism ensures the rationality and mathematical order of the universe, an order that would be lacking if naturalism were true. In a theist’s universe God ensures that secondary processes are ordered (although the voluntarist model might depart from this, it still results in an ordered universe). If all the order in the universe is imposed by a supernatural being and gains its being from it, the distinction between natural and supernatural causality is blurred. The point is, if this is in fact the world we live in, and the naturalist justifies the natural over the supernatural explanation using Ockham’s razor, they have used Ockham’s razor to justify a falsehood.

3. How do you justify Methodological Naturalism? Why should only natural causes count?

How does the methodological naturalist justify the claim that only natural causes should count in science? If a theistic universe is a possible universe, and a scientist wants to determine the true nature of reality, then why should the methods of the sciences only allow for natural causes? By what criteria does one rule out ‘non-natural’ causes? Is the claim that the method of science ought to be methodological naturalism, simply a dogmatic assertion made by metaphysical naturalists? This appears to be a live option. If the scientific method is determined by what scientists do in practice, then methodological naturalism cannot be considered the method of science. Isaac Newton resorted to divine intervention to correct the orbits of the planets when they deviated from their proper trajectory. Einstein found quantum theory unacceptable, stating “God doesn’t play dice with the universe.”¹⁸ If the aim of science is to discover the laws of nature, to those who believe nature is a creation of God, the aim of science is to discover the mind that created it. Isaacson states Einstein sought to know the mind of God, and saw “God reflected in the awe-inspiring beauty, rationality, and unity of nature’s laws.”¹⁹ Dawkins, of course, claims by ‘God’ Einstein meant ‘Nature.’ He cites Einstein’s statement, “I believe in Spinoza’s God who reveals himself in the orderly harmony of what exists.”²⁰ Regardless of Einstein’s personal religious beliefs, there is no denying that many scientists see nature similarly, as the product of a divine mind, and this mind can be known by the rational order and quality of the design. Darwin himself includes in the epigraph to the sixth edition of the *Origin* a quotation from Butler which reflects this line of thinking, rather than Dawkins’: ““What is natural as much requires and presupposes an intelligent agent

¹⁸ Walter Isaacson, *Einstein, His Life and Universe* (New York: Simon & Schuster, 2007), 326, 335, 392, 515.

¹⁹ *Ibid.*, 84.

²⁰ Dawkins, *The God Delusion*, 39.

to render it so, i.e., to effect it continually or at stated times, as what is supernatural or miraculous does to effect it for once.’ – Butler: *Analogy of Revealed Religion*.²¹

4. How do you justify Metaphysical Naturalism without referring to Methodological Naturalism?

Previously we assumed theism was true and examined how a scientist might investigate the world. We determined that a scientist would be unable to determine what is natural from what is supernatural, thus undermining methodological naturalism. How then can the metaphysical naturalist position be justified? Let’s say we begin by dogmatically asserting metaphysical naturalism, and then use this as a reason to exclude non-natural explanations à la methodological naturalism (since we have assumed only nature exists), and then argue that because methodological naturalism has found only natural explanations for events, this justifies our original position that the supernatural is non-existent. This reasoning is circular, and the fact remains that the original assertion was dogmatic. Methodological naturalism is simply a provisional methodology that assumes a causally closed universe, but this may or may not be the case. Metaphysical naturalism and methodological naturalism feed each other, but in a circular way that isn’t epistemically justified. If methodological naturalism is considered the determinant of what is real and what is not, how do you justify a method that is itself not the object of scientific study? Science is descriptive, not normative, and methodological naturalism is a normative statement about how science ought to conduct itself. Frank Jackson saw the only way out was to simply state that metaphysical naturalism is self-justifying, whatever

²¹ Darwin, *The Origin of the Species*, 6th edition, Epigraph.

this might mean. While dogmatic, it does seem to be the path taken by Dennett, Dawkins, et al.

The logical positivists faced similar problems when they dogmatically asserted the Verification Principle, which stated that a synthetic statement is meaningful if and only if it is empirically verifiable. The Verification Principle is designed to weed out statements like the following: “Universals exist,” or “The nothing itself nothings,” or “God guided the development of complex cells and organs,” and “contraception is immoral.” According to the Verification principle all of these statements are meaningless because they cannot be verified. But the desire to eliminate metaphysics by means of the principle produces too much collateral damage. Since many scientific theories include theoretical entities which are not observable, such as the Higgs boson and dark energy, according to the Verification principle, these theories are meaningless. In addition, not only are ethics and normative statements eliminated, but the Verification Principle itself is not empirically verifiable, hence by its own logic, it too is meaningless.

5. Rea: Metaphysical and Methodological Naturalism are Incoherent

These problems have led some theorists to claim that naturalism itself is internally inconsistent and needs to be scrapped. Methodological Naturalism is supposed to be the scientific method with limits. What are the limits? That only natural explanations count. Michael Rea believes that this criterion is added to the scientific method so as to not leave open the possibility that metaphysical naturalism could be overturned by science.²²

²² Michael Rea, *World Without Design, The Ontological Consequences of Naturalism* (Oxford: Clarendon Press, 2002), 50-65.

Metaphysical naturalists want to pledge their allegiance to the scientific method, but if they simply say, all that exists is what science says exists, this might leave them open to refutation by science. After all, the first three of Aquinas' proofs for the existence of God begin with simple empirical claims. If natural explanations are left to compete with non-natural ones, there is always the possibility that natural explanations might lose out. Perhaps substance dualism is a better explanation of near-death experiences than physicalism. The study of near-death experiences can be done scientifically, and if the studies are credible, they could provide good scientific evidence against naturalism.²³

However, if science only allows natural explanations, then non-natural or dualistic interpretations of the data are disallowed. This ensures a pre-determined victory for the metaphysical naturalists. But it does so at the cost of being circular in its justification. For these reasons and others, Rea thinks naturalism is incoherent and lacks a rational foundation. As a result, he questions naturalism as scientific orthodoxy and chooses to classify naturalism as a 'research program' rather than a 'substantive philosophical position.'²⁴ What does he mean by a research program? That naturalism is predisposed to trust "certain ways of acquiring information with respect to various topics and...distrust others."²⁵ However, like all predispositions, they may have been acquired in an unreflective and unconscious manner.

It is not difficult to see that naturalism is beset with problems. Imagine a scientist at work. Although the proper concern of a scientist is the external objects of nature, the true starting point of any scientist is their own subjectivity. A scientist begins in

²³ See *Recollections of Death, A Medical Investigation*, by Michael B. Sabom, M.D., as well as *Consciousness Beyond Life: The Science of Near Death Experiences*, by Pin Van Lommel.

²⁴ Rea, *World Without Design*, 52.

²⁵ *Ibid.*, 2-3.

consciousness, a mind that is being guided by the normative methods of the natural sciences. Next, they are confronted by a physical universe which they form a conceptual idea of and seek to investigate. So what seems to be the problem? First, there is the problem of personal identity. What is the self, the 'I' that is doing the inquiring into the nature of the universe? Is it a thinking mental substance, a divinely created soul, or just a highly developed brain? Next, there is the idea of matter. The materialist says only matter exists. Yet the experience of matter begins in thought, in the mind, in the conceptual, and seems to hint that in the thought of thinking the idea that only matter exists, there is something inherently self-contradictory. Hoffding noted the alleged internal inconsistency in advocating materialism: "Kant pointed this out...to carry out materialism is to pass beyond it. For even if we concede to it that our whole world-conception is a product of our material organization, this material organization itself is only an object of consciousness...The struggle between matter and spirit, then, ends in favor of the latter."²⁶

While emergentism might allow for minds to evolve from purely natural processes, emergentism has problems of its own, namely, its denial of causal agency. In addition, there are norms guiding scientists, telling them how they 'ought' to investigate nature. But how can 'oughts' follow from a purely natural universe, especially when science is simply supposed to be descriptive? How does one justify making prescriptive statements? Last, 'ought' implies 'can.' If naturalism is true, and causal effects are determined by prior conditions, how can I be free to follow what I 'ought' to do? For metaphysical naturalism to be consistent, it must be able to explain the universe, the

²⁶ Harold Hoffding, *A History of Modern Philosophy*, trans. by B.E. Meyer (Toronto: Dover Publications, 1955), 545-6.

origin of life, the origin of complexity, the origin of the human mind, values, normativity, causal agency, and free will. But as Michael Rea says, naturalism seems unable to do this in a satisfactory way.

6. Strong Methodological Naturalism should be replaced by a Weaker Version

Ernan McMullin thinks that the strong form of methodological naturalism, “the prescription that the only valid source of knowledge of the natural world is the natural sciences,” is unacceptable to the theist because it concedes too much sovereignty to the scientist.²⁷ McMullin lists four to five problem areas of conflict, in which the theist’s interpretation of events is likely to conflict with the scientific naturalist’s. Several of these have already been discussed, such as the origin of life, the mind/body problem, and guided versus unguided variations in evolutionary processes. McMullin adds to the list of problem areas the Fine Tuning argument, which is a science based argument which states that the various constants in physics are fine-tuned so as to allow life to emerge and therefore suggest intelligent design. The problem is that this is a scientific argument, and strong methodological naturalism disallows any appeal to supernatural causes. The scientist would have to say therefore the fine-tuning of the universe is just attributable to chance. But the theist would not. Nor would the theist want to rule out supernatural causes for the origin of the universe, of life, of complexity, and he/she would not reduce the mind to the brain, or argue that evolution occurs only by means of natural processes. Even though these areas all involve scientific matters, conceding ultimate answers to

²⁷ Ernan McMullin, ‘Varieties of Methodological Naturalism,’ in *The Nature of Nature*, ed. by Bruce Gordon and William A. Dembski (Wilmington, DE: ISI Books, 2011), 83.

them to scientists who subscribe to methodological naturalism, concedes too much disputed territory to the scientist. As a result, McMullin does not think strong methodological naturalism is worthy of support. He instead proposes two forms of qualified methodological naturalism which do not allow the scientist to be the only authority on these matters.

In his first form of qualified methodological naturalism, sciences will not have an exclusive prerogative when it comes to the knowledge of nature. Instead, they merely have “a strong presupposition of their sufficiency for the task.”²⁸ Non-scientists are not to be excluded in discussing the anomalies, or ‘difficult spots’ such as the cause of the Big Bang and the origin of life. In other words, non-natural explanations, explanations that may be open to supernatural phenomena, may be allowed. What this does is allow non-natural explanations to compete with natural ones in the method of science. This method would leave out the stipulation that only natural causes are allowed, and allow for supernatural causation if it is deemed the best explanation possible for certain problematic phenomena.

For example, a person (Jesus) walks on water. A person (a Hindu yogi) levitates. A person (Swedenborg) ‘sees’ events that are simultaneously taking place hundreds of miles away. A person (George Ritchie) dies and his soul continues on and meets Jesus. None of these phenomena is possible according to the laws of nature, and hence science must either reserve judgment or come up with a response that is skeptical about a supernatural cause: one is hallucinating, or is deluded, or there is some kind of trickery involved. But if, in all of these examples, the best explanation is that the phenomena in

²⁸ Ibid., 86.

question have a supernatural cause, then why not allow this as a possibility? Strong methodological naturalism seems to dogmatically rule out any appeal to supernatural causation, even those that compete with natural ones. But if no natural explanation can account for the origin of the universe, the origin of life, the origin of complexity, the ‘hard problem’ of consciousness, normative practices, moral values, and free will, then why shouldn’t supernatural explanations be considered? McMullin’s qualified methodological naturalism grants non-natural explanations access in these problematic areas and allows philosophers and theologians to debate them. Strong methodological naturalism, on the other hand, silences them and allows only the scientist to speak and invoke only natural processes.

7. The Possibility of a Theistic Science: Plantinga

If the first version of McMullin’s Qualified methodological naturalism weakens the strong form by allowing non-scientists to offer up non-natural explanations in problem areas, his second version seeks to expand the field of science. This version seeks to expand the field of science so as to tolerate a ‘theistic science’ one that believes the possibility of intelligent design can be investigated in a scientific way. This version seeks to change the famous ‘demarcation’ problem, of having to determine where to set the boundary line between science and non-science. McMullen notes that the historical attempt to do this has shown it to be difficult “to specify a set of necessary and sufficient conditions” that would accomplish this task.²⁹ He is less receptive to this version than the

²⁹ Ibid., 88.

previous one because traditional science has a universally agreed means for resolving controversy and assessing claims, which theism does not. McMullen thinks that ways of knowing other than solely through the empirical methods of science should not be silenced. Adherents of this position note that “the term ‘science’ in its original derivation from the Latin term *Scientia* was broader in its normal coverage than it is today. It referred to all forms of knowledge held at that time to count legitimately as knowledge, and thus was applicable in such areas as metaphysics and theology.”³⁰ This broader definition of science would allow for a theistic science, one in which supernatural explanations compete with natural ones.

The main proponent of this position is Alvin Plantinga, who calls methodological naturalism ‘provisional atheism.’³¹ Plantinga sees the danger in this, namely, the danger of indoctrinating graduate students to believe that evolution occurred in a purely naturalistic way. People, even educated people, would, in the future, then be blind to any alternative other than atheism. Plantinga thinks that scientists should be allowed to accept the best explanation for the phenomena being investigated, and for Plantinga the best explanation for the origin of the universe, life, and complexity, is the supernatural one.³² But because of their tacit philosophical method, scientists are not allowed to teach any alternative to naturalism. Being able to teach Theistic Science would at least allow students to be able to draw their own conclusions, especially in problematic areas where there is insufficient evidence. J.P. Moreland has echoed similar sentiments, as have

³⁰ Ibid., 89.

³¹ Alvin Plantinga, ‘When Faith and Reason Clash: Evolutions and the Bible,’ in *Readings in the Philosophy of Science*, ed. by Theodore Schick (Mountain View, CA: Mayfield Publishing Co., 2000), 333.

³² Ibid., 313, 333-5.

Stephen Meyer (*Signature in the Cell*) and Philip Johnson (who calls the position ‘theistic realism’ in his book *Reason in the Balance*). Under this model, parapsychology could actually be considered a science because it is open to supernatural intrusions upon the natural world, and considers supernatural explanations as valid.

Wilfrid Sellars has said, “THE aim of philosophy, abstractly formulated, is to understand how things in the broadest possible sense of the term hang together in the broadest possible sense of the term.”³³ It is ironic Sellars uses the term ‘broadest sense possible’ not once, but twice. If theism is true, God is not only one of the ‘things’ that constitute reality, but the primary cause of those ‘things.’ So if one wants to show how things hang together ‘in the broadest sense possible,’ why exclude a theory that may well contain a good explanation for those things’ existence? Methodological naturalism paints a narrow picture of how things fit together, not a broad one. What does science have to fear from broadening its method to allow for a causally open universe? If it is true that there are no non-natural explanations, then only natural ones will appear. But why rule them out to begin with? If there are explanatory gaps, the scientist shouldn’t necessarily fill them in with unknown natural processes. The scientist should reserve judgment and leave open the possibility of supernatural causes. A broader method of science doesn’t assume that the universe is causally closed. The broader method of theistic science would still include the empirical investigation into reality, but the prohibition that only natural explanations are allowed would be repealed.

In addition, a theistic science would also be open to non-empirical methods of obtaining knowledge, since theistic explanations refer to a realm which is not empirically

³³ Wilfrid Sellars, ‘Philosophy and the Scientific Image of Man,’ in *Empiricism and the Philosophy of Mind* (London: Routledge & Kegan Paul Ltd, 1963), 1.

accessible. As a result, other methods of gaining knowledge should supplement the scientific method (not replace, but supplement). Such as? A priori intuition and judgment. Introspection. Divine illumination. Orison. Centering prayer. The workings of the Holy Spirit. Religious and mystical experience. The reasons of the heart. Divine revelation. A leap of faith. Coherence theory. Vision quest. Cosmic consciousness. Raja Yoga. Moksha. Vipassana meditation. Mindfulness. Enlightenment. Achieving insight into the Buddha nature or the Buddha mind. Ground of Being. Being itself. The sixth sense. Basic belief. *A sensus divinitatis*. This broadening of methods would reject the claims of adherents of Scientism that the scientific method is the only path to knowledge, and supplement it with a host of other practices. It simply reflects the fact that if theism is true, science does not have a monopoly on truth, and the scientific method should not be authoritarian.

8. The Transition to a Causally Closed Universe

At some point science underwent a shift from a causally open universe to a causally closed universe, and in doing so, seemed to rule out the possibility of a theistic science. In other words, the underlying metaphysics and assumptions governing the conduct of science changed. The claim is at some point science adopted methodological naturalism as its method. If this in fact happened, when did it happen, and who decided that it should happen? Elliott Sober's definition of methodological naturalism is that "scientific theories should be neutral on the question of whether a supernatural God

exists.”³⁴ This is a statement on method, that only natural explanations are allowed, and not a scientific claim that supernatural causation is impossible. The early empiricist’s view of science was open to the possibility of non-natural occurrences as long as they involved physical manifestations. If experience set the boundaries for what may constitute knowledge, then any kind of experience conceivable, as long as it is observable either to oneself or others, may factor into one’s scientific vision. In simple enumerative induction one cannot *carte blanche* rule out or disqualify any kind of experience simply because it has been judged ‘non-natural.’ Aquinas’s arguments for the existence of God begin with empirical facts known to the senses, such as motion. Does methodological naturalism rule out use of God as an explanation of motion? If this is the best possible causal explanation for the universe’s motion, why should it be disallowed?

The modern ‘received view’ of the method of science has been set by the logical positivists. They sought to eliminate metaphysics from philosophical discourse by means of the Verification Principle: “a sentence had literal meaning if and only if the proposition it expressed was either analytic or empirically verifiable.”³⁵ Many philosophical problems were the result of language that transcended empirical verification. Such language was judged not as false, but as meaningless. As a result, we can identify three turns here: the turn toward linguistic analysis, of determining in what way a sentence is meaningful; a turn toward naturalism, in that meaning is determined by the set of empirical observations that count toward it; and a turn away from idealism, in

³⁴ Elliot Sober, “Why Methodological Naturalism?” In G. Auletto, M. LeClerc, and R. Martinez (eds.), *Biological Evolution: Facts and Theories: A Critical Appraisal 150 Years after The Origin of Species*, 2011, (Rome: Gregorian Biblical Press, 2011), 359-360.

³⁵ A.J. Ayer, *Language, Truth and Logic* (New York: Dover Publications Inc., 1952), 5.

that metaphysical entities that lay beyond the reach of the spatio-temporal world are eviscerated from philosophical discussion.

Some of the motivation behind the logical positivist's program was progress of science. The mechanistic view of the world was inherited from both Newton and Descartes, who were both dualists and did not rule out causal influence due to spiritual forces. Newton believed that his calculations were proof of God's occasional intervention in nature, as over time the 'numbers' were off, requiring God to come in and set the planets correctly on their paths.³⁶ Descartes' vision of a mechanistic universe seemed to suggest that the universe was a machine devoid of spiritual content, and set up by God with laws and then left to run in accordance with them. But the transition to a causally closed universe really only occurred after the law of the conservation of mass was put forth by the French chemist Antoine Lavoisier in 1774. The law of the conservation of energy was developed by several scientists, among them Robert Mayer, Ludwig Colding, and James Prescott Joule, but it was Hermann Von Helmholtz's 1847 book, *On the Conservation of Force*, that is credited for gaining widespread acceptance of the theory.³⁷ Together, these two laws, along with a new understanding of heat, constitute the First law of Thermodynamics, which states that in a closed system, the energy of that system remains constant. Relativity theory showed that mass and energy are interchangeable, but can neither be created nor destroyed.

The first law also states that if the universe is a closed system, and the amount of energy and matter in it is fixed, no outside forces can causally interact with it in such a way that changes the amount of energy in this system. For any physical event, there must

³⁶ Steven Shapin, *The Scientific Revolution* (Chicago: University of Chicago Press, 1998), 152.

³⁷ Hoffding, *A History of Modern Philosophy*, 495-7.

be a physical cause, as there is no other possibility. If methodological naturalism consists of the claim that scientific theories should remain neutral about the supernatural or God's existence, the assertion of a causally closed universe does not seem neutral at all. A causally closed universe appears to rule out a theistic God who can create the universe and causally act in the world either by originating life, or creating complexity, or guiding variations. However, it is possible to assert that the universe is causally closed and still believe in God, just a God who does not act in the world, as a deist might.

The question now arises whether consciousness, in its role in causal agency, constitutes a violation of the law of the conservation of energy. A central belief of theism is the belief that humans are endowed with a spiritual and immortal soul, created by God, one that can causally interact with a physical body. This too appears to be a violation of the law of the conservation of energy. Even though consciousness is radically unlike physical processes, a causally closed universe seems to demand that the mind must emerge from physical processes. The problem is that semantic understanding, which appears to transcend the physical and hence be irreducible (as Searle's Chinese Room suggests), has to be either identical to brain states, or supervenient upon neurological processes, but in a causally inert way. A similar problem concerns the location of mental beliefs. The only place possible is the brain, for where else could they be located? But no empirical investigation can pinpoint a mental belief in a brain.

As a result, a causally closed universe seems to rule out substance dualism; there can be no Ghost in the machine. This, says Gilbert Ryle, is a category mistake. Ryle gives three examples of category mistakes: mistaking a university for the physical buildings; mistaking a division as if it were separate from battalions, batteries, and

squadrons; and asking, ‘who contributes the team spirit’ after being shown the various players in cricket. Ryle’s 1949 book, *The Concept of Mind*, is said to have “put the final nail in the coffin of ‘Cartesian dualism.’ Ryle claims that Descartes made a category mistake in thinking that there is an immaterial mental substance over and beyond a person’s behavior and disposition, that the mental belongs in a separate category from the bodily and physical. Though he does not say it, the implication is that God and the supernatural is a category mistake as well. Who in their right mind would want to go against science and assert otherwise? Ryle attempted to solve the problem by writing off consciousness and adopting a behaviorist approach to the mind.”³⁸ Thus Michael Silberstein feels justified in proclaiming, “the philosophy of mind is over.” Science has triumphed over the medieval, folk psychology of scholasticism. Neuroscience, cognitive science, and eliminative materialism are now the only items left on the menu.

By this point, it should be clear that the theist position is threatened. It does appear that science has ruled out theism as a possibility. But has it? The law of the conservation of energy says it is impossible for anything that isn’t physical to intervene in the closed system such as our universe. Theism asserts God intervenes all the time in the physical world (the Israelites constantly ask God to hear their prayers and intervene on their behalf). Science now says this is impossible, that the universe is a causally closed system, and that this is an inviolable scientific law. Has the theist been checkmated by science, is it ‘game over’? To the naturalist, yes, it appears that theistic science, or any scientific method other than methodological naturalism, is forbidden by the law of the conservation of energy. But the theist still has an out. God is not physical, therefore not

³⁸ Tanney, Julia, "Gilbert Ryle", *The Stanford Encyclopedia of Philosophy* (Spring 2015 Edition), Edward N. Zalta (ed.), URL = <<http://plato.stanford.edu/archives/spr2015/entries/ryle/>>.

bound by the laws of nature. God is a necessary being, not subject to the laws governing a contingent creation. The laws of nature exist because God wills them to, and therefore God, being their author, including the one about the conservation of energy, is outside of them, and free to override them if he so chooses. God, not being a physical being, is not causally bound by the laws of the nature. The law of the conservation of energy no more binds God and prevents God from acting in the universe, than the law of gravity prevents Jesus from walking on water. These laws are binding for anyone other than their author. The theistic God is omnipotent and can do anything, including suspend the laws of nature. If this is true, not merely just believed to be true, but is true, then supernatural acts which defy the laws of nature are possible. As a possibility, the scientific method should be open to them, and following McMullin's suggestion, strong methodological naturalism should be qualified so as not to categorically rule out any supernatural explanations that might compete with natural explanations, particularly in those problem areas in which the phenomena defy reduction.

9. Who determines what the method of science is? Is there a method of science?

McMullin raises an important issue in proposing to change from strong methodological naturalism to qualified methodological naturalism. Who determined that the method of science should be strong methodological naturalism, and is it possible to change it? What is the scientific method? What is science? Isaac Asimov simply states that science is "curiosity, the overwhelming desire to know."³⁹ The goal of science is to

³⁹ Isaac Asimov, *Asimov's New Guide to Science* (New York: Basic Books, Inc., 1984), 3.

increase knowledge of the world. The scientific method is important because this method is supposed to be the means by which we do this. The classical empiricist conception of science maintains that science is based upon the method of simple enumerative induction, in which facts about the world are gathered empirically, and general conclusions or hypotheses drawn from them. This widely held commonsense view of science argues that the facts are ‘neutral’ – that they are what they are, objective, and are not subject to the vagaries of one’s personal beliefs. Aristotle’s empiricism was not necessarily inductive; it was based more on the discernment of essential natures and principles that were somehow self-evident to the senses.

The title ‘father of the scientific method’ falls upon Roger Bacon (1220-1292), who was inspired by Aristotle and Arabic science. He is the first Western scientist to incorporate inductive reasoning into the scientific method. Francis Bacon (1561-1626) was inspired by his namesake, but sought to “move away from Aristotle’s passive observation to the experimental methods of Copernicus, Kepler, and Galileo.”⁴⁰ Bacon saw reliance on Aristotle and traditional philosophical systems, rather than nature, as an idol of the mind, an illusion which needed to be swept clean so that science could start anew, built firmly on only empirical facts. What was needed was an army of scientists to venture out beyond the pillars of Hercules and gather observations, and perform experiments. The early scientific method was based on a form of naïve realism, the idea that the facts are “directly given to careful, unprejudiced observers via the senses...[and] are prior to and independent of theory...and constitute a firm and reliable foundation for

⁴⁰ Simon L. Altmann, *Is Nature Supernatural? A Philosophical Exploration of Science and Nature* (Amherst, NY: Prometheus Books, 2002), 227.

scientific knowledge.”⁴¹ In order to determine the cause of a phenomenon, Bacon suggested listing all of its possible causes and then by experimentation, eliminating faulty explanations until only the true cause remained.⁴² John Stuart Mill (1806-1873) further refined this approach. Thus the common sense view of the scientific method was mapped out: deriving hypotheses from the facts through enumerative induction, which are then subject to experimentation, which eliminates those hypotheses which fail the experiment.

However, simple enumerative induction faces several difficulties. David Hume believed that the causal connection underlying many (not all) inductive inferences is never apparent since the connection is never given as a sense impression. For this reason, induction could simply be a bastard of the imagination, the ‘constant conjunction’ of two arbitrarily paired random events. Rather than derived from necessary causal connections, induction is based on an expectation formed by association and habit, one that may or may not be warranted.⁴³ Another problem induction faces is that induction relies upon the principle of the uniformity of nature. The universe is under no obligation to behave in the future as it did in the past. This is simply an unjustified assumption. The only way to justify induction is circularly, by saying that future events should resemble past events because in the past future events resembled past events. This uses induction to justify induction. Waiving that point, hypotheses can never be conclusively confirmed by induction to be true. They can only be corroborated, made stronger. Each empirical fact that supports a hypothesis may make the hypothesis more likely, but it never conclusively

⁴¹ Alan Chalmers, *What is this Thing Called Science?* (Indianapolis: Hackett Publishing Co., 1999), 4.

⁴² Francis Bacon, *The New Organon*, ed. by Lisa Jarind and Michael Silverthorne (West Nyuack, NY: Cambridge University Press, 2000), 49-50, 83-84.

⁴³ David Hume, “Skeptical Doubts Concerning the Operations of the Understanding,” in *Philosophy, The Quest for Truth*, ed. by Louis P. Pojman and Lewis Vaughn (New York: Oxford University Press, 2014), 273.

confirms it. Each new white swan corroborates that ‘all swans are white,’ but it only takes one black swan to falsify the proposition.

Descartes rejected inductive reasoning, as did Karl Popper. Popper’s solution to the problem of induction is falsificationism, which he sees as the heart of the scientific method. Therefore he believed that the line of demarcation separating science from pseudo-science is not corroboration but falsification. Anything can confirm psychoanalytic theory or astrology, but can these fields be subjected to an experiment that would falsify them? If not, then they are not scientific theories. A good scientific theory is one that will make a daring prediction, a bold conjecture, the riskier the better, and if it passes the test it is corroborated, just as Einstein’s theory of relativity was confirmed by Eddington when he demonstrated that the gravity of the sun causes a deflection in the light of the stars. Popper’s method is not built from the ground up inductively, but rather uses data to try to deduce predictions from one’s initial conjecture, which experiments either corroborate or refute.

The hypothetico-deductive (H-D) model, is “the most common description of good scientific procedure in science textbooks.”⁴⁴ However, there are several formulations of it, and several different philosophers’ versions are usually run together. It was initially advanced by William Whewell (who coined the term ‘scientist’ in 1833), and then developed by others.⁴⁵ Whewell rejected the ‘pure empiricism’ of Bacon, Locke, and Hume, because he felt “the Idea of Cause...is not borrowed from

⁴⁴ Peter Godfrey-Smith, *Theory and Reality, An Introduction to the Philosophy of Science* (Chicago: University of Chicago Press, 2003), 236.

⁴⁵ Steve Fuller, *Thomas Kuhn: A Philosophical History for our Times* (Chicago: University of Chicago Press, 2001), 275-7.

experience.”⁴⁶ His *History of the Inductive Sciences* attempts to trace how science progresses from a prelude of mere collection of facts, to an ‘inductive epoch’ by means of ‘colligation,’ which brings the facts together under a hypothesis. Whewell reflects the influence of Kant and sees the formation of hypotheses as more the result of a creative, active mind, than as the direct result of one’s observations. The ‘sequel’ stage occurs when a successful theory is further refined by experimentation and application.⁴⁷ Though versions vary, the hypothetico-deductive model follows this basic routine: one gathers some observations, one forms a hypothesis through conjecture (some theorists are open to induction) that will explain the data, one deduces predictions from the hypothesis, and then tests them.⁴⁸ One observes swans; forms the hypotheses ‘all swans are white’ by means of conjecture or amassed facts; predicts that future swans will be white; and with each white swan observed, the hypothesis achieves greater support. If the prediction turns out to be false, then the hypothesis has been falsified and a new one must be theorized.

Karl Popper’s falsification method is considered to be a form of the hypothetico-deductive model. In Baconian induction, the hypothesis is derived inductively from a large number of facts. Popper, like Hume, felt arguments based on induction have problems. To avoid these, Popper claimed that hypotheses are not inductively derived from the data, but are simply conjectures that guide fact-gathering. Popper’s model seems to suggest the hypothesis should precede the collection of data, rather than being

⁴⁶ William Whewell, ‘Against Pure Empiricism,’ in *Philosophy of Science, An Historical Anthology* (Malden, MA: Wiley-Blackwell, 2009), 266.

⁴⁷ <http://philosophy.wisc.edu/forster/Whewell.htm>

⁴⁸ Godfrey-Smith, *Theory and Reality, An Introduction to the Philosophy of Science*, 236.

derived from it.⁴⁹ Popper sought to use deduction rather than induction as his method. One deduces predictions from the hypotheses, and if they are proven wrong, then the hypothesis is falsified. This follows the deductive form of Modus Tollens. If A (hypothesis), then B (prediction). Not B (prediction fails), therefore, not A (hypothesis is wrong). However, what if the prediction is verified? Is the hypothesis confirmed? If A (hypothesis), then B (prediction). B (prediction fulfilled), therefore A (hypothesis). To argue this way is to commit the fallacy of Affirming the Consequent. While affirming the consequent by means of a successful prediction may provide some evidence for the hypothesis, and suggest a strong inference, it does not necessarily follow. Once again, we see why Popper was wary of saying that a hypothesis could be confirmed. What matters for Popper is Modus Tollens, whether or not the hypothesis has been falsified, not Affirming the Consequent, a fallacy which nevertheless suggests a strong inference or corroboration, but not confirmation.

Hempel's deductive-nomological (D-L) model is also considered a form of the hypothetico-deductive model. Hempel's model was called 'the covering law model of explanation' by others, in that "the essence of explanation is to show that the phenomenon to be explained is 'covered' by some general law of nature."⁵⁰ Why do the planets follow elliptical orbits? Planetary motion can be covered under Galileo's and Kepler's laws of motion, which in turn can be covered under Newtonian laws of motion and gravitation, which are then covered by Einsteinian relativity.⁵¹ The argument takes

⁴⁹ Ibid., 69-71.

⁵⁰ Samir Okasha, *Philosophy of Science* (Oxford: Oxford University Press, 2002), 43.

⁵¹ Carl Hempel, 'Two Models of Scientific Explanation' published as 'Explanation in Science and History,' in *Frontiers of Science and Philosophy*, ed. R.C. Colodny (Pittsburgh: The University of Pittsburgh Press, 1962), 9-19.

the form of deduction, with one premise stating a law of nature, the second particular facts, and the conclusion states the explanandum, the observation one seeks to explain. As in a deductive argument, if the premises are true and the form valid, the argument is sound, and the explanandum is the logical result of the explanans. This model is called the covering law model of explanation because in response to a ‘why’ question (Why is the sky blue?), it uses a scientific law (electromagnetic theory of light and differing wavelengths of color) and a particular fact (the sun is overhead and the earth’s atmosphere at this angle scatters the shorter blue wavelength more frequently than the red), to explain the phenomena being asked (why is the sky blue). It can be symbolically stated in the following form:

- 1) L_1-L_n (the laws)
- 2) C_1-C_k (the initial conditions)
- 3) E (observation statement)⁵²

Premises 1 and 2 constitute the explanans, the statements that do the explaining. The third statement is the conclusion, the explanandum, or phenomena which needs a scientific explanation. Hempel’s model is similar to Popper’s in that “every scientific explanation is potentially a prediction.” The prediction/explanation symmetry thesis states that “explanation-after-the-fact could equally well have served as a prediction-before-the-observed-fact.”⁵³ Hempel’s model also allows for deductive-statistical explanations (e.g., respecting the probability of radioactive decay) as well as Inductive-statistical explanation (probability of successful treatment of a streptococcus infection with penicillin).⁵⁴

⁵² Timothy McGrew, Marc Alspector-Kelly, and Fritz Allhoff, editors, ‘The Received View,’ in *Philosophy of Science: An Historical Anthology* (Malden, MA: Wiley-Blackwell, 2009), 317.

⁵³ *Ibid.*, 317.

⁵⁴ Carl Hempel, *Aspects of Scientific Explanation* (New York: The Free Press, 1965), 380-381.

The scientific models proposed by the positivists, including ones not discussed such as Carnap's, constitute the 'received view' of scientific method (the label the 'received view' is attributed to Hilary Putnam and Frederick Suppe). The models by no means constitute a 'unified package.'⁵⁵ Nevertheless, they dominated the philosophy of science for the first half of the 20th century. This is not to say that the 'received view' is current scientific orthodoxy, because it is not. The 'received view' serves as the basis for which contemporary discussion of scientific method begins, and upon which all discussion and further critique develops. "No one standpoint has risen as its successor; instead, a number of alternative approaches are now on the table, distinguishable by what in the received view they reject."⁵⁶ All of the various criticisms of the received view cannot be considered in detail here. Instead, the focus will be on those which are relevant to this discussion.

Pierre Duhem critiqued Popper's falsificationism by arguing that you can't test a single hypothesis. Duhem argued that there is no such thing as a crucial experiment upon which the fate of a hypothesis turns, because the whole theory is involved in conducting an experiment, as well as a host of background assumptions, and you can't tell which part is disproven by a failed experiment. This insight eventually gets merged with Quine's second dogma of empiricism, which says it is impossible to specify the empirical content of any single statement independent of the web of belief. Together they form the Quine-Duhem thesis, which take a holistic approach toward science, arguing that all scientific claims are interconnected and cannot be tested individually. While Quine would consider it misguided to weave the Homeric gods into one's web of belief, science posits the

⁵⁵ McGrew, et al, 'The Received View,' *Philosophy of Science: An Historical Anthology*, 307.

⁵⁶ *Ibid.*, 315.

existence of physical objects in a similar manner, posits like ‘quarks’ which may or may not exist. Why favor the latter over the former? The ‘posits’ of science have greater pragmatic justification than the ‘posits’ of the Greek gods. This seems to be Quine’s attempt to justify not only science, but a naturalized epistemology (methodological naturalism) that is grounded in an ontological naturalism. The overall coherence of the web of belief is able to explain the empirical data encountered on the fringes. However, many of the beliefs and generalizations formed on the basis of the data are underdetermined, and underdetermination may give rise to relativism, as Thomas Kuhn demonstrates.⁵⁷

Another problem with positivism is that it takes scientific theorizing and testing to be independent of context. But clearly scientific discovery is context dependent, as Kuhn demonstrates. Kuhn differs from Popper and perhaps reflects Quine’s influence in taking a more holistic approach to how science is practiced, one derived from viewing scientific method from a historical perspective. Kuhn also dislikes Popper’s emphasis on falsificationism. Kuhn distinguishes between three kinds of science: pre-paradigmatic, normal and revolutionary science. In the pre-paradigmatic stage there is no consensus among the community as to what governing rules or theories account for the phenomena in question. There are a large number of competing schools, each with their own theories and variations which attempt to solve some kind of ‘puzzle’ which mystifies them. Eventually one ‘paradigm’ gains the widespread acceptance of a community, and after that scientists can operate under the umbrella of what Kuhn terms ‘normal’ science. However, unlike Popper, what the scientists do in this phase (which is the type of science

⁵⁷ Alexander Rosenberg, *Darwinism in Philosophy, Social Science, and Policy* (Cambridge: Cambridge University Press, 2000), 7, 23.

most often practiced) is not try to falsify or disprove the paradigm, but instead assume it's correct and try to solve outstanding 'puzzles' on that assumption. For Kuhn normal science is not subversive to its foundation or its operating principles (whereas for Popper it is).

A paradigm, however, is never 'true' for Kuhn; it only achieves its validity through the consensus of the scientific community. No paradigm is without its flaws. Every paradigm is based upon an imperfect, finite sampling of experiences and data. Hence all paradigms are subject to counter-instances, or to use Popper's terminology, falsifications. Kuhn calls phenomena which somehow violate the paradigm 'anomalies,' but he does not view all anomalies as falsifications. The 'discovery' of oxygen violated the paradigm of phlogiston, and the discovery of X-rays violated then current ideas about the possible forms of radiation, but did oxygen or X-rays falsify anything?⁵⁸ Kuhn also notes that Newton's computations only accounted for half of the moon's perigee and thus for sixty years after his death his theory could not accurately predict the moon's motion.⁵⁹ Does this mean that we should reject his theory, as Popper would have us do? Kuhn says not (as it turned out, Newton's math was wrong). Thus Kuhn concludes "if any and every failure to fit were ground for theory rejection, all theories ought to be rejected at all times."⁶⁰ Another challenge for Popper is how to decide how serious a falsification must be in order to falsify a theory. If there are degrees of falsification – how does one decide which are serious and which are not?

⁵⁸ Priestly saw oxygen as dephlogisticated air; so to what extent he really 'discovered' oxygen is questionable. Kuhn says "Priestly and Lavoisier both saw oxygen, but they interpreted their observations differently." See Thomas S. Kuhn, *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1970), 85, 120.

⁵⁹ *Ibid.*, 81.

⁶⁰ *Ibid.*, 146.

Kuhn also seems to go against Popper's prohibition of *ad hoc* modifications, and argues that adopting a paradigm will always involve a certain amount of tweaking to try to get the theory right. This isn't a problem, for how does one tell what is part of the theory itself, or merely an *ad hoc* modification to it? Are epicycles an *ad hoc* modification to the Ptolemaic system, added after the fact, or were they originally part of the understanding how planets behaved while orbiting the earth? Paradigms are not fixed for Kuhn, unable to be amended; instead they are open-ended. None has ever resolved all the problems; there is always more 'mop-up work' to be done. Kuhn likens a paradigm to an "accepted judicial decision in the common law; it is an object for further articulation and specification under new or more stringent conditions."⁶¹ Elsewhere he calls a paradigm a 'map' and just as a map is not the territory Kuhn similarly argues "it is hard to make nature fit a paradigm."⁶²

As a result, Kuhn's "negative view of theories is devastating to any philosophy of science built on the premise that theories are the primary bearer of objective scientific truth."⁶³ No matter how well accepted a paradigm is, it always risks being overthrown. The best that can be expected is provisional, convergent truth, but never objective truth. Even though the theory is not questioned in normal science, problems will inevitably arise or a false prediction made. If stubborn anomalies resist solution and arouse all the energies of the community in a final, last ditch effort to bring them under the existing paradigm, then a crisis emerges. The paradigm is now in danger of being discarded, or in Popper's terms, of being falsified. Kuhn even cites Popper and states: "the role thus

⁶¹ Ibid., 23.

⁶² Ibid., 135.

⁶³ Malcolm Forster, 'Theories, Models, and Curves,' in *Occam's Razor and the Relational Nature of Evidence*, (Online manuscript, 2004), 12. <http://philosophy.wisc.edu/forster/520/Chapter%202.pdf>

attributed to falsification is much like the one [I] assign to anomalous experiences, i.e., experiences that, by evoking crisis, prepare the way for a new theory.”⁶⁴ Although Kuhn did not like the term ‘falsification,’ his use of ‘anomaly’ performs an analogous (albeit not identical) role to that of ‘falsification.’

Finally, in the revolutionary stage a radical thinker, often younger and less committed to the old ways of thinking, suggests an innovative new way to solve the crisis by presenting to the community a new paradigm which is often incompatible with the old one.⁶⁵ This too may agree with Popper’s criterion that confirmations based upon ‘risky predictions’ should carry greater weight than those that do not. Often when a new paradigm is introduced it does not generally gain immediate acceptance unless it can make such predictions, which are then confirmed. The bending of light was one of Einstein’s risky predictions, and its confirmation by Eddington is what finally led to relativity being accepted fourteen years after it was first proposed.

It is Kuhn’s last stage, that of revolutionary science in which persistent anomalies lead to the dethroning of the current scientific paradigm and its replacement with another, that most resembles Popper’s emphasis on falsification. But as Kuhn has noted, revolutionary science is not ‘normal’ science, the type of science which most scientists do every day, which is working within a paradigm and assuming its validity in order to develop its applications. The mistake Popper makes, according to Kuhn, is mistaking ‘revolutionary science’ for normal science, of characterizing “the entire scientific enterprise in terms that apply only to its occasional revolutionary parts.”⁶⁶

⁶⁴ Kuhn, *The Structure of Scientific Revolutions*, 146.

⁶⁵ *Ibid.*, 90.

⁶⁶ Kuhn, “Logic of Discovery or Psychology of Research?” in *Readings in the Philosophy of Science*, ed. by Theodore Schick (Mountain View, CA: Mayfield Publishing Co., 2000), 16.

10. There is no method to Science: Feyerabend

In his book *Against Method*, Paul Feyerabend argues that there is no method to science. If there is no method, then how can one argue that strong methodological naturalism is the method of science, and invoking the non-natural is unscientific, and hence should be disqualified as non-science? Feyerabend argues that it is an underlying assumption that science has a rational method which can describe and explain natural phenomenon. Similarly, there is a tendency to see religion in the opposite light, as based on beliefs which cannot be logically or empirically supported. Feyerabend questions whether these assumptions are valid, and if science is as rational an enterprise as its adherents proclaim. If not, then the standards and principles governing science are in fact no different from those governing religion, and the state is not justified in sanctioning one ideology over the other. Feyerabend's thesis is that the state should not be engaged in the practice of bending the minds of its citizens to the standard of any particular group, whether it be scientists, mystics, existentialists, or nudists. He states "we must stop the scientists from taking over education and from teaching as 'fact' and as 'the one true method' whatever the myth of the day happens to be."⁶⁷

Feyerabend believes there is no consensus among either scientists or philosophers upon what science is, or what its primary aim should be – to predict, explain, unify, confirm, verify, falsify hypotheses – or by what method it should proceed – induction, deduction, probability or simply guessing. Even the most self-evident examples of what

⁶⁷ Paul Feyerabend, *Against Method* (London: Verso, 1993), 162.

does not count as science – the punching dummy of astrology – is questionable, since astronomy grew out of astrology, just as chemistry grew out of alchemy. Similarly, the way that religion is often denigrated as being opposed to science, as the enemy of science preventing progress and enlightenment, is also misguided. One of the central claims of the New Atheists is that science is rational, and religion is not. But if one sees the goal of religion as the pursuit of ultimate truth, how is this any different from the goal of science? Science and religion both make claims to truth, and Feyerabend sees scientific rationalism as the secular equivalent of the word of God.⁶⁸

Originally trained as a Popperian, after reading Wittgenstein and Kuhn, Feyerabend ultimately came not only to reject reason as the foundation of the scientific method, but to reject even the notion of there being a scientific method. Faith in reason and science is just a secular form of religion, requiring assent to a certain set of unjustifiable assumptions and beliefs. Reason should not be the arbiter of all other traditions because reason itself is simply one of the many traditions.⁶⁹ If there is such a thing as an arbiter in epistemology it is not reason but simply the democratic process itself in which each is free to pick and choose the ideology he or she likes best. Just as political candidates use propaganda and coercion to gain office, so which ideas win out is largely a matter of persuasion, not reason. Thus the logical force of one's arguments should have no privileged epistemic value. Feyerabend argues that what fueled the Copernican Revolution was not so much rational arguments as the passion of Galileo. He claims much of the Copernican cosmology was incoherent and appeared as 'silly' to his

⁶⁸ Ibid., 218.

⁶⁹ Ibid., 225.

and Galileo's peers (hence irrational).⁷⁰ Scientific rationality therefore is not normative; it has no method it can prescribe to its followers, and when one examines the history of science one finds "there is not a single rule that is not violated at some time or other...*anything goes*."⁷¹

Feyerabend came to reject what he called 'scientific chauvinism:' "what is compatible with science should live, what is not compatible with science should die."⁷² Instead he championed a type of cultural relativism, in which no one view should dominate all others.

In the years around 1964 Mexicans, blacks, Indians entered the university as a result of new educational policies. There they sat, partly curious, partly disdainful, partly simply confused hoping to get an 'education'. What an opportunity, my rationalist friends told me, to contribute to the spreading of reason and the improvement of mankind... I felt very differently... Who was I to tell these people what and how to think?... Their ancestors had developed cultures of their own... These cultures have important achievements... Yet *they were never examined with the respect they deserved*... they were ridiculed and replaced as a matter of course first by the religion of brotherly love and then by the religion of science...⁷³

Feyerabend refused to pretend that he had anything normative to teach his students, i.e., the correct method of scientific inquiry.⁷⁴ He refused to perpetuate the illusion of objective rationality that the yes-men of science proclaimed, seeing it instead

⁷⁰ Ibid., 114. Feyerabend states on pg 29: "When a new view is proposed it faces a hostile audience and excellent reasons are needed to gain for it an even moderately fair hearing. The reasons are produced, but they are often disregarded or laughed out of court, and unhappiness is the fate of the bold inventors." "It is clear that allegiance to the new ideas will have to be brought about by means other than arguments. It will have to be brought about by *irrational means* such as propaganda, emotion, *ad hoc* hypotheses, and appeal to prejudices of all kinds. We need these 'irrational means' in order to uphold what is nothing but a blind faith until we have found the auxiliary sciences, the facts, the arguments that turn the faith into sound 'knowledge'."

⁷¹ Ibid., 14, 19.

⁷² Ibid., 36.

⁷³ Ibid., 263-4.

⁷⁴ Ibid., 157. Nevertheless, Feyerabend still seems to adhere to some principles of critical rationalism, those which "take falsifications seriously; increase content; avoid *ad hoc* hypotheses; 'be honest' – whatever that means and so on."

as a form of Western cultural imperialism (we know the truth, you don't, so you're in error and we're justified in enslaving you). In an analysis of the power structure of the state, Feyerabend sees the state and the state-sponsored educational system as officially endorsing the ideology of scientific rationalism and using money, positions, research grants, textbooks, and grades to withhold reward and punish those who don't toe the line of scientific orthodoxy. *Against Method* tries to turn the tables on those who insist science has a normative method that must be followed. Feyerabend says if science tells us to proceed inductively, it is possible to find instances where science proceeded counterinductively. He cites Galileo's praise for Copernicus and Aristarchus, whom he saw proceeding in a counterinductive manner when the facts did not support their position.⁷⁵ Thus he claims science unfolds not by induction (for the facts may be subjective, shaped by perception, contradict one's theory, or be steeped in current theories and old ways of thinking), but by speculation, telling stories, or spinning grand and novel 'fairy tales.'⁷⁶

Feyerabend's reasoning is that if Newton's mechanics contradicted Galileo's, and Galileo's contradicted Kepler's, yet each in its day was considered 'true,' didn't one of them prove to be another just-so story? However, Feyerabend is not saying that all scientific theories are just-so stories, or that any theory is as good as the next, as a naïve anarchist would claim.⁷⁷ It is wrong to read Feyerabend as arguing astrology is just as good an explanation of events as astronomy. Feyerabend is simply saying all scientific

⁷⁵ Ibid., 80-81.

⁷⁶ Ibid., 21-2.

⁷⁷ Ibid., 231. The naïve anarchist believes that all rules are worthless and should be given up. Though the assertion 'anything goes' implies Feyerabend is a naïve anarchist, he tempers this viewpoint by saying he believes in rules, but that these rules have limits or are context-dependent. Thus the term 'relativist' is probably more appropriate. In *Against Method* he states he longer likes the term anarchism and now prefers to use the term Dadaist (p. xiv).

theories run the risk of potentially being exposed as fairy tales eventually. The mistake is in thinking that our current scientific worldview is the final true one, a ‘timeless entity’ without defect or limits (thus refusing to acknowledge that it *might be* a fairy tale).⁷⁸ Clearly the history of science has borne this insight out – the assumption that the foundation of our current scientific worldview is solid, is often discovered not to be correct. So what is needed, then, is a variety of opinions and theories to challenge and expose possible cracks in the foundations. Thus if Popper sees science largely in terms of Kuhn’s last stage (anomaly, crisis, and revolution), Feyerabend tends to see science in terms of the pre-scientific stage, where a plurality of incommensurable theories flourish (i.e., there is no single paradigm that should prevail over all the others as in the ‘normal science’ stage).⁷⁹ The belief that science even offers a unified theory or speaks with a single voice is mistaken, as is evident by the current incompatibility of relativity with quantum theory.

Just as Quine attempted to dissolve the distinction between analytic and synthetic statements, Feyerabend attempts to dissolve the distinction between science and non-science in several ways, the most obvious in denying that rationality is the normative method of science. For our purposes, his insight is that science believes strong methodological naturalism is and should be normative. In addition, as Feyerabend notes – though he perhaps exaggerates the strength and importance of this – the values of the general (non-scientific) public help control or determine what kind of science is or should

⁷⁸ Ibid., 106.

⁷⁹ Ibid., 146. Against Kuhn’s notion that crises precipitate revolutions, Feyerabend argues that in the Copernican ‘revolution’ there were no anomalies, hence no crisis – in other words, the Ptolemaic system was ‘empirically adequate’ to explain the data. It was only after Copernicus (or Galileo) put forth his thesis that there was either a crisis or revolution.

be practiced. The public can do this by managing funding or passing laws, etc. If the general public holds to religious values, they can and should influence how science is done.

According to Hempel, one of the aims of science is explanation. Well, if a hypothesis which best explains the phenomenon in question can be justifiably inferred, what rule dictates that supernatural explanations should be *de facto* ruled out? If scientists are justified in making ontological claims about the existence of unobservable particles based upon their observable effects, why can't the same kind of reasoning be employed by philosophers and theologians to reason from the observable effects of this world to a possible unobservable cause of it? In the naturalist evolution vs. intelligent design (unguided vs. guided variation) debate, why should a materialistic hypothesis be considered as the only legitimate explanation to account for the origin of species? Can science explain what happened the moment before the big bang? If it cannot and religion can provide a satisfactory explanation, why should a non-natural explanation be ruled out? If science can describe the laws of nature, but cannot tell you why there are laws of nature, while religion can, why should the latter be excluded from being taught simply because it's non-natural?

Feyerabend's slogan is "Anything goes." While many people twist this to mean different things, probably the best way to interpret what it means is that there is no fixed scientific method, anything goes. However, it can be interpreted as an overall reflection on science itself, that scientific reason does not and should not have a corner on the market.⁸⁰ As a result scientific chauvinism should not privilege science over non-

⁸⁰ Ibid., 122.

scientific worldviews; science can be just as sloppy and irrational as religion. Nor should one act as if all the phenomena in question can be understood by the current scientific models. Current paradigms are never to be treated as true.⁸¹ All paradigms and their methodologies are open-ended, and always subject to revision.⁸² According to Feyerabend, the principles, rules, standards, and facts of any one theory are never to be considered sacrosanct since the evidence supporting that theory is circular, in that the facts themselves are constructed and interpreted by the theory itself. Thus Feyerabend argues: “*learning* does not go from observation to theory but always involves both elements – experience arises *together* with theoretical assumptions, not before them.”⁸³

If competing methodologies are incommensurable, they cannot be used to judge one another because they contain different assumptions. Thus the methods of science cannot be used to judge religion, and vice-versa. The Church should not have attempted to silence Galileo just as scientists should not attempt to silence the Church. Just as religion cannot be defended on purely rational grounds, neither can science. Thus the state should not give its official sanction to any one particular ideology, or allow only one perspective to be heard, thereby silencing all the others as intellectual heresy. Though Feyerabend ultimately rejects Popper’s rationalism, he still shares Popper’s belief in an open society. “In a democracy ‘reason’ has just as much right to be heard and to be

⁸¹ Ibid, 132-2. Feyerabend writes: “Galileo was advised [by the Church] to teach Copernicus *as a hypothesis*; he was forbidden to teach it *as a truth*...there are now many scientists, especially in high energy physics, who view *all* theories as instruments of prediction and reject truth-talk as being metaphysical and speculative...To 16th and 17th- century scientists, only a few astronomers thought of deferents and epicycles as real roads in the sky; most regarded them as roads on paper which might aid calculation but which had no counterpart in reality.”

⁸² Ibid., 156.

⁸³ Ibid., 149.

expressed as ‘unreason’ especially in view of the fact that one man’s ‘reason’ is the other man’s insanity.”⁸⁴

11. Elliott Sober: Is the Scientific Method a Myth?

When trying to answer the question, does science have a method, Elliott Sober, as might be expected of a philosopher of biology, turns to Darwin for the answer. He states that in a letter to his friend, Joseph Hooker, Darwin discussed the problem of how to classify species. He said there are two kinds of biologists when it comes to this issue, lumpers and splitters. The lumpers emphasize the similarities, so have fewer species than the splitters, who emphasize the differences. Sober then uses these two categories in an analogy on how to address the question of scientific method. He states that the historians of science are the splitters, who argue “the methods used in a scientific discipline have changed through time and that different scientific disciplines have different methodologies.”⁸⁵ Kuhn and Feyerabend are splitters. Philosophers of science on the other hand are lumpers; they see their job as normative, as describing “the methods that scientists ought to use.” Historians reason that if this doesn’t happen in real life, then talk of normativity even in theory is absurd.

Which brings us once again back to Darwin. What was Darwin’s method in practicing science? Sober doesn’t really address this point. He sees the thrust of Darwin’s argument as twofold: not just for descent with modification by means of

⁸⁴ Ibid., 161.

⁸⁵ Elliott Sober, ‘Is the Scientific Method a Myth?’ in *Metode Science Studies Journal*, 5 (2015): 195-199. University of Valencia.

natural selection, but for common ancestry as well. Sober then uses a probability argument developed by Ian Hacking to show how one could not confirm, but make a case for Darwin's conclusion. Sober argues it is impossible to make a deductive argument in this case. Scientific laws and theories often go far beyond the observations that are used to support them. Rather, he says, the best one can do is approach this problem using probability and hope to show the argument is strong rather than weak. He concludes that the probability that humans and monkeys have a common ancestor, given both have tailbones, is greater than the probability that they don't have common ancestors. Therefore, Darwin's theory of common ancestry is a strong argument. The method of science he has used to justify this conclusion is statistical inference. Thus science has a method, according to Sober, which he has just illustrated.

But this could not have been the identical method of Darwin, as Sober is using a method of statistical reasoning developed by Ian Hacking in his 1965 book, *The Logic of Statistical Inference*. So Sober's response to the question, is the scientific method a myth, is no, the scientific method involves applying the law of likelihood to the evidence. In doing so, he seems to imply that Ian Hacking's method, using the updated logic of statistical probability, as well as Neo-Bayesian theory, should be normative. But his invocation of Darwin into his explanation of why, implies that Darwin reasoned in a similar way. Elliott Sober may be a 'lumper,' but he has not shown that science has a method if Darwin is being used to illustrate that method. What method, if any, did Darwin use in arriving at this theory of evolution? Statistical inference, coupled with Bayesian updating, is Sober's method, but what was Darwin's?

12. What was Darwin's scientific method? Was Darwin a methodological naturalist?

Central to the debate over the scientific method Darwin is said to have employed, is the debate over when Darwin became convinced of the truth of evolution. Was it during his time on the voyage of the *Beagle*, or afterwards? Why does this matter? It matters because the answer helps determine Darwin's methodology. If he amassed a large collection of facts and then derived hypotheses from these facts, then he is following the Baconian method of induction. If he was guided by one of two central hypotheses, evolution or special creation, in collecting and interpreting his facts, then he was following the hypothetico-deductive method. In Baconian induction the facts come first, then the hypothesis (which is more like the conclusion). In the H-D method, the hypothesis comes first, which then steers one towards the relevant data.

Support for the position that Baconian induction was Darwin's method comes from several statements he made in his writings, as well as the fact that on the voyage of the *Beagle* he was exposed to an inordinate amount of facts about species from all over the globe. He states in the conclusion of *The Voyage of the Beagle*, "It appears that nothing can be more improving to a young naturalist, than a journey in distant country."⁸⁶ In his *Autobiography*, he states, "My mind seems to have become a kind of machine for grinding general laws out of large collections of facts."⁸⁷ The question then becomes, does Darwin arrive at evolution by means of natural selection by induction? If he left England a firm believer in fixity of species, when did he change his mind? In *Variation of Animals* he begins by stating, "During the voyage of HMS Beagle...I found myself

⁸⁶ Charles Darwin, *The Voyage of the Beagle*, (New York: Penguin Classics, 1989), 508.

⁸⁷ Darwin, *Autobiography*, 139.

surrounded by peculiar species of birds, reptiles, and plants existing nowhere else in the world...I often asked myself how these many peculiar animals and plants had been produced: the simplest answer... [They] descended from each other, undergoing modification in the course of their descent.”⁸⁸ Thus, it appears he begins to doubt fixity of species while on the *Beagle*, and begins to entertain the notion of evolution. The *Beagle* returns in October, 1836. Darwin states that he did not regard evolution as the ‘simplest answer’ until he hit upon the mechanism of natural selection after reading Thomas Malthus’s 1798 “Essay on the Principle of Population,” in October of 1838.

On the other hand, if Darwin formed the hypothesis of evolution while on the trip, then he would have been guided by this hypothesis in his collection of facts, focusing on those which were most pertinent. Then his method would be hypothetico-deductive. It is not Baconian in that he is being guided by theory, not facts. It is no mystery that Darwin was exposed to evolutionary thought at Edinburgh, and Paley’s natural theology at Cambridge. He was well aware of conflicting accounts of the origin of species before he left England. At the time he left he was a firm believer in the fixity of species. But he also left England in December, 1831, with the first volume of Lyell’s *Principles of Geology*, which he states in the *Autobiography* he “studied attentively; and this book was of the highest service to me in many ways.”⁸⁹ The second volume of this work reached him in the city of Montevideo in Uruguay in 1832. The importance of this book is that it argues that natural processes, like those evident today, rather than catastrophic events like Noah’s flood, are responsible for the earth’s current geological structure. If this is true,

⁸⁸ Charles Darwin, *The Variation of Animals and Plants under Domestication*, Vol. 1 (Baltimore: John Hopkins Press, 1998), 10.

⁸⁹ Darwin., *Autobiography*, 77.

then the earth must be much older than anyone believed at the time. Darwin comes to admit that he was guided by Lyell's hypothesis while observing many geological features on his trip, and came to agree with him. In addition, he came to adopt the same approach for explaining species, that over long periods of time, natural variations accumulate and can cause change in species. Thus it is possible to argue that Lyell's uniformitarian hypothesis guided Darwin's early evolutionary thinking, fact collecting, and fossil gathering. Support for this interpretation is found in one of the letters Darwin wrote, stating "How odd it is that anyone should not see that all observation must be for or against some view if it is to be of any service!"⁹⁰

Following Hempel's deductive-nomological model, natural selection is the law of nature that explains the variety of species Darwin witnessed in his travels, by showing how variations that are favored allow an organism to gain an adaptive advantage and more successfully reproduce and multiply, while unfavorable variations are washed away. This model also pits competing hypotheses against one another. Those hypotheses that have a greater explanatory scope, i.e., explain more facts, have a higher degree of likelihood or probability of being correct. Darwin himself states that if a hypothesis "explains various large and independent classes of facts it rises to the rank of a well-grounded theory."⁹¹ Darwin uses this method to justify his belief that natural selection is a superior theory over direct creation because it explains more facts than special creation. He states, "How inexplicable [are these facts] on the doctrine of independent acts of creation! How simply explained on the principle of natural

⁹⁰ Charles Darwin, *More Letters of Charles Darwin*, ed. by Francis F. Darwin, Vol I. (London: Murray, 1903), 195.

⁹¹ Darwin, *The Variation of Animals and Plants under Domestication*, 9.

selection...[which] gives a rational explanation of many apparently independent classes of facts.”⁹² For these reasons, Michael Ghiselin believes that Charles Darwin “emphasized the hypothetico-deductive approach.”⁹³ Francisco J. Ayala not only argues that Darwin’s method was the hypothetico-deductive approach, but that this model is considered to be *the* method of science. He rejects induction because he thinks “no scientist works without any preconceived plan.”⁹⁴ The hypothetico-deductive model, on the other hand, acknowledges the “heuristic role of hypotheses, which guide empirical research by suggesting what is worth observing.”⁹⁵

It is also argued that Darwin frequently tested his hypotheses against his observations. This would count him as a Popperian, although it is difficult to see how one could test the theory of natural selection in an experiment. Natural selection and species origination are not something one can necessarily observe, so it is difficult to see how one could test his theory in an experiment. Yet, Ayala claims this is what Darwin was doing in his multiple experiments with barnacles, orchids, fossils, and in his taxonomic writings, though few of Darwin’s studies on these topics are ever read. Ghiselin also provides a detailed examination of Darwin’s method as he developed and tested his hypotheses about the formation of coral reefs, common ancestry, taxonomy, variation, evolutionary psychology, and sexual selection. When J.B.S. Haldane was asked what would count as evidence against evolution, or what evidence would falsify the theory, Haldane reputedly said “rabbit fossils in the Precambrian.”⁹⁶ Mammals didn’t

⁹² Ibid., 10.

⁹³ Michael T. Ghiselin, *The Triumph of the Darwinian Method* (Mineola, NY: Dover Publications, Inc., 2003), 15.

⁹⁴ Francisco J. Ayala, ‘Darwin and the Scientific Method,’ in PNAS, June 16, 2009, Vol 106. 10035.

⁹⁵ Ibid., 10034.

⁹⁶ Godfrey-Smith, *Theory and Reality*, 72.

exist in the Precambrian so these fossils would presumably show that the theory is false. But does the fact that none have ever been found confirm Darwin's theory? No, but it can be interpreted as a strong inference, or as lending support to his theory. And would finding a Precambrian rabbit fossil falsify Darwin's theory? Not necessarily. Duhem would argue that Precambrian rabbit fossils would just mean the theory needs some reworking. Within a Kuhnian framework, Precambrian rabbit fossils would not necessarily spark a scientific revolution; the routine of normal science would continue to operate under paradigm of evolution. A rabbit fossil would only suggest that were some bugs in the theory that still needed to be worked out.

When it comes to explaining the diversity of plant and animal life, Darwin preferred natural explanation to supernatural speculation. This suggests Darwin was a methodological naturalist. However, Darwin's methodological naturalism does have its limits. Darwin does not remain 'neutral' about God. He allows for supernatural explanations to compete alongside natural ones. He also admits that he is not sure natural selection alone can account for complex organs. He is open to a supernatural explanation for the origin of the universe, as well as the origin of life. He states, "The first origin of life on this earth, as well as the continued life of each individual, is at present quite beyond the scope of science."⁹⁷ He sees God as the architect of the 'general laws' of nature, amongst them, the law of natural selection, which then give rise to the various species of life. This is implied in the epigraph by Whewell in the sixth edition of *The Origin of Species*: "But with regard to the material world, we can at least go so far as this— we can perceive that events are brought about not by insulated interpositions of

⁹⁷ Darwin, *The Variation of Animals and Plants Under Domestication*, 12.

Divine power, exerted in each particular case, but by the establishment of general laws.”⁹⁸ Though Darwin might have believed that species are not the product of design, he believed the laws of nature by which species have arisen are the product of design. He states, “I am inclined to look at everything as resulting from designed laws, whether good or bad, left to the working out of what we may call chance.”⁹⁹ He then ends the *Origin* by stating that these “laws [were] impressed on matter by the Creator.”¹⁰⁰ So to conclude, one would have to argue that Darwin was not a strict methodological naturalist. He allowed for supernatural explanation of the universe and its laws, something a methodological naturalist would not, but once that universe was in place employed methodological naturalism in his investigation of it. Some see his unreceptiveness to miracles and supernatural intervention as reflecting the religious influence of his mother’s side of the family, the Wedgewoods, who were Unitarian.

13. Conclusion: Methodological Naturalism faces Several Problems

To conclude: Ask any scientist when they received explicit training in the scientific method and he/she will likely tell you that he/she never received any. Nor could a scientist probably tell you the difference between Aristotle’s, Bacon’s, Descartes’, Mill’s, Whewell’s, Herschel’s, Bayes’s, Pierce’s, Popper’s, Hempel’s, Kuhn’s, Lakatos’s, Hacking’s, Dewey’s, Sober’s or Quine’s vision of the scientific method. Nor is it apparent that there is a common denominator that runs through all of

⁹⁸ Darwin, *The Origin of Species*, 3.

⁹⁹ Charles Darwin, letter to Asa Gray. May 22, 1860.

¹⁰⁰ Darwin, *The Origin of Species*, 383.

them. This plurality of views seems to suggest there is truth to Feyerabend's claim that there is no consensus on what the scientific method is. Although most scientists would not go so far as to say, 'anything goes.' If this is so, then how can there be consensus that methodological naturalism is and should be the method that governs science, and that science should not allow for non-natural explanations? Or, that methodological naturalism should not only be normative for science, but for all fields of academic inquiry, including philosophy? Even Sober agrees that when you look at science historically, there is no method. While Sober argues that theoretically there is a normative practice for science, the law of statistical probability, he does not state that it should disallow supernatural explanations to compete with natural ones. If he were a methodological naturalist, he would not attempt to calculate the likelihood of intelligent design as a hypothesis against that of strict naturalism. If he were a methodological naturalist, he wouldn't even bother. Nowhere in the science textbooks is a normative method laid out in detail, explicitly specifying the exact method all scientists must follow in order to do 'good' science. Nor is it stated anywhere that the method of science is, or ought to be, methodological naturalism.

Finally, methodological naturalism does not entail metaphysical naturalism. In claiming to study only 'natural' processes, these natural processes might simply be the secondary processes that God instilled in the nature of material entities in the primary act of creation. But to the extent that God is the source of all being, and God somehow sustains the being of the universe and the 'natural processes' that scientists study, then what scientists do is not necessarily secular or something devoid of the supernatural, since all being is derived from God. The Reformed tradition blurs the line between

primary and secondary causes such that secondary causes are primary causes, 'natural processes' are simply the manifestation of the divine will. If this is possible, then the methodological naturalist cannot distinguish a natural from a supernatural cause. Thus methodological naturalism is at best incomplete, as it cannot provide the necessary criteria for distinguishing 'natural' from 'supernatural' processes. Hence science cannot maintain that it ought to adopt a 'neutral' attitude concerning God, or that science has no impact on theology or religion. If God is in fact the designer, creator, and sustainer of the universe, then scientific knowledge is in fact a kind of mirror of the divine mind that designed the laws of nature. Science itself is a kind of revelation, revealing the mind of the architect.

CHAPTER SIX –
THE LOGICAL RELATIONSHIPS BETWEEN EVOLUTION,
THEISM AND NATURALISM

From a nontheistic point of view, the evolutionary hypothesis is the only game in town.¹ – Alvin Plantinga

I see no good reasons why the views given in this volume should shock the religious views of anyone.² – Charles Darwin

Darwin's dangerous idea is reductionism incarnate...a universal acid.³ – Dennett

I think all the great religions of the world – Buddhism, Hinduism, Christianity, Islam, and Communism – both untrue and harmful. It is evident as a matter of logic that, since they disagree, not more than one of them can be true....I am as firmly convinced that religions do harm as I am that they are untrue....A habit of basing convictions upon evidence, and of giving to them only that degree of certainty which the evidence warrants, would, if it became general, cure most of the ills from which the world is suffering.⁴ – Bertrand Russell

The Lord will guide you continually. – Isaiah 58:11

The horrid doubt always arises whether the convictions of man's mind, which has been developed from the mind of the lower animals, are of any value or at all trustworthy. Would any one trust in the convictions of a monkey's mind, if there are any convictions in such a mind?⁵ – Darwin

Then arises the doubt, can the mind of man, which has, as I fully believe been developed from a mind as low as that possessed by the lowest animal, be trusted when it draws such grand conclusions?⁶ – Darwin

¹ Alvin Plantinga, 'When Faith and Reason Clash: Evolutions and the Bible,' in *Readings in the Philosophy of Science*, ed. by Theodore Schick (Mountain View, CA: Mayfield Publishing Co. 2000), 332.

² Charles Darwin, *On the Origin of Species*, Second edition (1860), pg 481. Third edition (1861), pg 514. Fourth edition (1866), pg 567. Fifth edition (1869), pg. 569; Sixth edition (1872), pg. 421. Not in 1st ed. <http://darwin-online.org.uk/Variorum/1869/1869-569-dns.html>

³ Dennett, *Darwin's Dangerous Idea*, 82.

⁴ Bertrand Russell, *Why I am not a Christian* (New York: Simon & Schuster, 1967), v-vii.

⁵ Charles Darwin, *The Life and Letters of Charles Darwin*, edited by Francis Darwin (New York: Appleton and Co., 1886), Vol. I, 286. Letter to W. Graham, July 3, 1881.

⁶ Charles Darwin, in Appendix A, *On the Origin of Species*, ed. by Joseph Carroll (Calgary: Broadview Press, 2003), 433.

1. Logical Consistency and Inconsistency

The title of this dissertation is ‘Evolution, Naturalism and Theism: An Inconsistent Triad?’ The previous chapters have engaged in analysis of our three main concepts, evolution, naturalism, and theism. This chapter will examine now what it means to be ‘consistent.’⁷ In examining the ways in which these three concepts logically relate to one another, our central concern will be to determine whether or not these positions are logically consistent or inconsistent with one another. The Merriam-Webster dictionary defines ‘consistency’ as “possessing coherence...free from contradiction...marked by agreement.”⁸ If beliefs are ‘inconsistent,’ they are “not compatible with another,” and “incoherent.”⁹

What is good about consistency, and why should we strive to achieve it? Consistency is a requirement for a good argument, whereas bad arguments often contain inconsistencies. One way to determine consistency amongst statements is by constructing a truth table. Consistency can be determined, in some cases, by evaluating the values of the main operator of statements tested. There are only four different ways statements may be said to relate to one another logically. Consistent statements result if and only if it is possible that all of them can be true. (‘Robert is over thirty years of age’ and ‘Robert is over 40 years of age.’)¹⁰ Inconsistent statements necessarily result if at least one of them is false. (‘Frances is over 30 years of age’ and ‘Frances is under 20

⁷ Michael Beaney, “What is Analytic Philosophy?” in *The Oxford Handbook of the History of Analytic Philosophy* (Oxford: Oxford University Press, 2013), 8.

⁸ <https://www.merriam-webster.com/dictionary/consistent>

⁹ <https://www.merriam-webster.com/dictionary/inconsistent>

¹⁰ Harry J. Gensler, *Introduction to Logic* (New York: Routledge, 2010), 69.

years of age.’) Two statements are contradictory if their truth values differ (Lincoln was the sixteenth president’ and ‘Lincoln was not the sixteenth president.’)¹¹ Logically equivalent statements, on the other hand, necessarily have the same truth value under their main operators (‘Mr. T is in Los Angeles’ and ‘Mr. T is an American’).¹²

Any argument that has inconsistent premises is necessarily unsound, since at least one of its premises is false. As a result, good reasoning avoids making inconsistent assertions. Socrates was very adept at demonstrating that the people that he questioned made inconsistent assertions.¹³ Socrates would get an individual to declare he believes X is true, then that Y is true, and then demonstrate that X and Y are inconsistent. For example, in the *Apology*, Socrates at his trial argues that his belief that his daimon is a spiritual being is inconsistent with the charge of atheism brought against him by Meletus. Similarly, opponents of theism attempt to argue that theism is false, by demonstrating that belief in an omnipotent, omniscient, benevolent, creator of the universe is inconsistent with the existence of evil. Alternatively, opponents of scientism might demonstrate that quantum mechanics and general relativity are inconsistent with one another. Buddhism may be said to be inconsistent with theism, in that it denies a creator god and the existence of a substantial self, but may still be compatible with a *via negativa* or apophatic approach to spirituality. It is also said the idea of repentance is perhaps inconsistent with the Buddhist doctrine of impermanence and non-ego, since there does

¹¹ Stan Baronett, *Logic* (New York: Oxford University Press, 2016), 352-3.

¹² Patrick J. Hurley, *A Concise Introduction to Logic* (Stamford, CT: Cengage Learning, 2015), 346.

¹³ Genzler., *Introduction to Logic*, 70.

not seem to be a self to which bad karma or wrongdoing can attach itself, and hence the ‘self’ that is doing the repenting is not the ‘self’ that caused the harm.¹⁴

In propositional logic entire statements or propositions are frequently tested for consistency. Similarly, the individual propositions of evolution, theism, and naturalism represent multiple beliefs which can be tested for consistency. But before we test each of these possibilities, let us stand back and look at a broader debate concerning these positions. It is commonly claimed that the debate over evolution and its compatibility with theism is just one smaller event or battle within a larger conflict between science and religion, or reason and faith. The larger claim is that religion and science are inherently incompatible, i.e., it is inconsistent to accept the findings of both, that they somehow contradict each other. So before we discuss the consistency of claims about evolution, theism, and naturalism, let us first look at the larger issue regarding the compatibility of science and religion.

2. C.P. Snow’s Two Cultures: Science and the Humanities

One of the famous discussions of this issue is the Rede Lecture given by C. P. Snow in 1959 at Cambridge University on the topic of “The Two Cultures.” Snow’s thesis is that the most highly educated people of England at his time were divided into two groups and that they had ceased to communicate with one another. Each thought the other “spoke nothing but Tibetan.”¹⁵ Ironically, Charles Darwin’s grandson delivered the

¹⁴ Steve Bein, “Repenting and Eliminating Bad Karma; *Shushogi* Paragraphs 7-10,” in *Engaging Dogen’s Zen*, ed. by Jason M. Wirth, Brian Schroeder and Bret W. Davis (Somerville, MA; Wisdom Publications, 2016), 106-111.

¹⁵ C.P. Snow, *The Two Cultures: And a Second Look* (New York: Mentor Books, 1963), 10.

lecture the year before him (discussing the problems of the world's population). As a result, Snow argued intellectuals appear to be "split into two polar groups...literary intellectuals at one pole – at the other, scientists...Between the two a gulf of mutual incomprehension, sometime hostility and dislike."¹⁶ Snow, however, was a member of both camps, which suggests he did not see them as contradictory. Snow held a Ph.D. in physics, along with expertise in chemistry, but was also a novelist, as was his wife. As a result, he tried to bridge the gap between the two.

Snow also held a position in government as technical director in the Ministry of Labor. That allowed him to hire people. As a result he knew firsthand what scientists thought; he had interviewed thousands of them. He found that most scientists hadn't ever read a single novel of Dickens. He stated: "the whole literature of the traditional culture doesn't seem to them relevant."¹⁷ Those on the other side, the intellectuals of the humanities, "like to pretend that the traditional culture is the whole of culture."¹⁸ They were equally tone deaf in the sciences and Snow could elicit no response when he asked some of them if they knew what the Second Law of Thermodynamics was. Snow states that the snobbery of the scientists is based on their belief that they will be doing something useful, that their knowledge is practical, and they will get a job with a good salary, while their counterparts will be lucky to make sixty percent as much as them. As for the literary intellectuals, their snobbery and disdain for science is based upon the Platonic contempt for the material and physical world, in favor of the spiritual. As a result, the "exploration of the natural order is of no interest" to them.¹⁹

¹⁶ Ibid., 11-12.

¹⁷ Ibid., 19.

¹⁸ Ibid., 20.

¹⁹ Ibid., 20.

Snow blames the culture divide on England's "fanatical belief in educational specialization."²⁰ He states that at Cambridge, his alma mater, incoming students are given the choice to study either mathematics and science, or the classics. In the English university system, most students study their own field exclusively. Snow argued that there needs to be more interdisciplinary learning. Otherwise, the end result will be the breeding of either detached scientists, or intellectual Luddites who rebel against science and technology. While intellectuals in the arts and humanities might not see anything wrong with the latter, Snow does. Snow believes the agricultural, industrial, and scientific revolution improved the quality of life for everyone and helped to lift millions out of poverty. It provided them with food, sanitation, clean drinking water, transportation, lighting, electricity, medicine, and education. As a result, he argues that we must "close the gap between our cultures."²¹

Snow believes the reigning model of the relation between Science and the Humanities (the humanities including religion), is either the Conflict Model, or the Independence Model. The Conflict model sees the two fields as incompatible, and that the field other than one's own, should be done away with and replaced with one's own field. In the Independence model one is either a member of one or a member of the other, but cannot be a member of both. Here one recognizes the value of the other field, and allows it to exist in its own right, but thinks it addresses questions and issues different from one's own field. Snow rejects both models, arguing instead for compatibility, and that it is possible for the two cultures to talk together and pursue mutual interests. In other words, there is the possibility that the two cultures could merge together into one

²⁰ Ibid., 22.

²¹ Ibid., 51.

culture, one in which at least dialogue and integration occur. Snow calls this the ‘third culture.’ However, some scientists who are hostile to the humanities think scientists should replace the intellectual of the humanities, and address the public directly as the celebrity scientists of today do. Thus science should triumph over religion and the humanities and this view alone should become the ‘third culture.’

3. The Various Models for the Possible Relationships between Science and Religion

Snow’s essay leads us to question, what are the possible relationships science and religion can take? Let us first begin by giving a brief definition of science and religion, then determine the various models that have been proposed to describe their relationship. Bertrand Russell defines science as “the attempt to discover, by means of observation, and reasoning based upon it, first, particular facts about the world, and then laws connecting facts with one another and (in fortunate cases) making it possible to predict future occurrences.”²² Russell also gives a good overview of the method of science:

Scientific method (which influenced the positivists and verifiability theory of meaning): Science starts, not from large assumptions, but from particular facts discovered by observation or experiment. From a number of such facts a general rule is arrived at...a working hypothesis...If it is correct, certain hitherto unobserved phenomena will take place in certain circumstances. If it is found that they do take place, that so far confirms the hypothesis. If they do not, the hypothesis must be discarded and a new one must be invented. However many facts are found to fit the hypothesis, that does not make it certain, only highly probable; in that case, it is called a theory rather than a hypothesis.²³

²² Bertrand Russell, *Religion and Science* (Oxford: Oxford University Press, 1997), 8.

²³ *Ibid.*, 13-4.

A definition of religion that is compatible with theism is given by William James as, “the belief that there is an unseen order, and that our supreme good lies in harmoniously adjusting ourselves” to it.²⁴ These definitions clearly illustrate that the domains of science and religion have different objects of interest. Science is concerned with that which we can observe, whereas religion is concerned with a reality that appears to transcend our senses.

3.1 The Conflict Model

How many ways can the two fields relate to one another? How many models? Bertrand Russell offers the simplest view of their relationship, stating they can be seen as either compatible or incompatible. Alistair McGrath uses the terms Confrontational and Non-confrontational, with Distinct and Convergent as separate non-confrontational models.²⁵ John Haught lists three models as Conflict, Contrast (different domains) and Convergence.²⁶ Alvin Plantinga’s labels for the relationship are Conflict, Deep Conflict, and Concord.²⁷ Ian Barbour proposed four models for describing their relationship: Conflict, Independence, Dialogue, and Integration.²⁸ Michael Ruse also lists four models. Ian Barbour’s models appear to be the most developed and precise, so his template will be followed in what follows.

²⁴ William James, *The Varieties of Religious Experience* (New York: Barnes & Noble Classics, 2004), 57.

²⁵ Alistair McGrath, *Science and Religion* (Malden, MA: Blackwell Publishing, 1999), 44-54.

²⁶ John Haught, *Science and Faith* (New York: Paulist Press, 2012), 3-5.

²⁷ Alvin Plantinga, *Where the Conflict Really Lies*. The four sections of the book are structured under each model.

²⁸ Barbour, *Religion and Science*, 77-105.

The Conflict model holds that Religion and Science are incompatible. Hence, there are two possible positions in this model: that of Scientism, that science triumphs over religion, and that of Religious Fundamentalism, that religion triumphs over science. But basically the Conflict model sees each position as contradictory to the other, thus requiring an either/or choice between them, not a both/and. Adherents of Scientism see the major challenge to religion as the success of the scientific method, which some see as the only reliable path to knowledge. Science is “objective, universal, rational, and based on solid observational evidence.” Religion, on the other hand, is “subjective, parochial, emotional, and based on traditions or authorities that disagree with one another.”²⁹ Adherents to scientism include Bertrand Russell, E.O. Wilson, Carl Sagan, the Logical positivists, various evolutionary naturalists, and the New Atheists. Adherents to the belief that religion triumphs over science are Biblical and Scriptural literalists. They believe that ‘scripture is inerrant.’ Among literalists are the Southern Baptists, Creationists, Scientific Creationists, and various Muslim and Jewish fundamentalists.

Lawrence Principe, a historian of science at Johns Hopkins, claims that no serious historian of science today would testify to a historical conflict between science and religion. Brooke makes a similar claim. He believes that science grew out of religion, side by side, as an attempt to understand God’s creation. Many scientists saw themselves as studying God’s second book, that of Nature. To Kepler and others, “theological and scientific inquiry were not separate: to study the physical world means to study God’s creation.”³⁰ Newton believed that the gravitational attraction between bodies was due to

²⁹ Ibid., 77.

³⁰ Lawrence M. Principe, *The Scientific Revolution* (Oxford: Oxford University Press, 2011), 57.

God's continuous and direct action.³¹ He also believed that "space was constituted by God's omnipotence." Like Aristotle, he needed God to account for setting matter in motion.³²

Principe claims the rise of the Conflict thesis can be attributed to two people and two books in particular: J. William Draper's 1874 *History of the Conflict between Religion and Science* and Andrew D. White's 1896 book, *A History of the Warfare of Science and Theology in Christendom*. Although both books were very popular in their day, Principe thinks they were both bad history and bad science. Principe sees Draper's warfare model as based on his idiosyncratic deistic metaphysic rather than historical facts. Draper believed all of nature was ruled by uniform law and governed by climatic determinism, which clashed with the theism of organized religions. White's hostility was based on personal grievances, especially the hostility his attempt to found Cornell University along non-sectarian lines provoked.³³ Unfortunately, they present the Conflict narrative as fact. This in turn served as the basis of a foundation myth which was then accepted by the general public and passed on as folk history. As a result, the metaphor of warfare, of two armies opposing each other on a battlefield, stuck in the public mind and came to characterize the relationship between science and religion.

Bertrand Russell's book, *Religion and Science*, also adheres to the conflict thesis, with the belief that science triumphs over religion. He states, "Between religion and science there has been a prolonged conflict, in which...science has invariably proved victorious....The new method achieved such immense successes....that theology was

³¹ Ibid., 66.

³² John Hedley Brooke, *Science and Religion* (New York: Cambridge University Press, 1993), 12-13.

³³ Lawrence Principe, "John William Draper, the 19th century Originator of the 'Conflict Thesis,' lecture given at the Cosmos & Creation Conference at Loyola Maryland University on Friday, June 19, 2017.

gradually forced to accommodate itself to science.”³⁴ Not only does Russell maintain the warfare metaphor, but he sees religion as the aggressor and guilty party, citing “the history of the warfare waged by traditional religion against scientific knowledge.”³⁵ In his essay “Why I Am Not a Christian,” Russell rejects the traditional arguments for God’s existence, claiming Kant “disposed” of them. Russell rejects the logic upon which they are based as being of “an antiquated Aristotelian sort” which has been superseded. However, unlike Kant, he does not think the existence of God is needed in order to give morality its sanction. He believes “the Christian religion, as organized in its churches, has been and still is the principle enemy of moral progress in the world.”³⁶ He cites as evidence, the Inquisition, witch burning, slavery, the fear of the devil, eternal punishment, and the second coming. According to Russell, they are tools used by preachers to intimidate believers into submission.

The New Atheists continue in the same vein of argument as Russell. Sam Harris wrote a 2006 article for the Huffington Post, entitled ‘Science must destroy Religion.’ This is not neutral language or the language of toleration. This is the language of warfare: wanting to ‘*destroy*’ religion doesn’t even respect the individual freedom to believe. Harris thinks religion is without evidence and therefore should not be tolerated. His argument is that since each tradition has its own scripture, and each tradition claims its scripture is divinely inspired, and since these books contradict each other in their claims, and it is not possible for all of them to be inspired, none of them is inspired. Hence none of them should be believed. He argues: “the conflict between religion and

³⁴ Russell, *Religion and Science*, 7, 16.

³⁵ Ibid 7.

³⁶ Russell, *Why I am not a Christian*, 6-13, 21-2.

science is inherent and (very nearly) zero-sum.”³⁷ He makes a more sustained argument in his book *Letter to a Christian Nation*. There he states, “The success of science often comes at the expense of religious dogma; the maintenance of religious dogma *always* comes at the expense of science.”³⁸

Harris, like the other New Atheists, is an evidentialist, i.e., he thinks that one should only believe something if there is good evidence for it. He states that “either a person has good reasons for what he believes, or he doesn’t.” He classifies religious beliefs about God, the existence of the soul, sinfulness, and immortality as “iron age beliefs,” i.e., as prescientific, based on superstitious thinking and lacking the empirical evidence of science and reason. Hence he argues we should reject them. Only those beliefs which have evidence or rational support should be tolerated. Only beliefs arrived at through the methods of science and empirical justification are reliable. Hence faith and reason are incompatible. Science, on the other hand, “represents our best efforts to know what is true about our world.”³⁹

Richard Dawkins is also an adherent of evidentialism. In *The God Delusion*, he states “The true scientist...knows exactly what it would take to change his mind: Evidence. As J.B.S. Haldane said when asked what evidence might contradict evolution, ‘Fossil rabbits in the Precambrian...I argue for evolution with a passion...My passion is based on evidence. Theirs, flying in the face of evidence as it does, is truly fundamentalist.’”⁴⁰ Dawkins, in a debate with the Muslim Medhi Hasan, who stated he believed Muhammad traveled to heaven upon a winged steed, replied, “You believe this,

³⁷ http://www.huffingtonpost.com/sam-harris/science-must-destroy-reli_b_13153.html

³⁸ Sam Harris, *Letter to a Christian Nation* (New York: Alfred A. Knopf, 2006), 63.

³⁹ *Ibid.*, 64.

⁴⁰ Richard Dawkins, *The God Delusion* (New York: Mariner Books, 2008), 19.

in the 21st century?!”⁴¹ For Dawkins, believing in God is like believing in Greek gods. Not only is it illogical, but there is no evidence for it. All the evidence says horses do not fly. Dawkins accounts for religion by claiming it is simply the result of indoctrination by one’s parents. Russell too claims that “most people believe in God because they have been taught from early infancy to do it, and that is the main reason.”⁴² Dawkins thinks it is ridiculous to speak of a four year old as a Christian or Muslim, since they are too young to form beliefs of their own. Beliefs should only be arrived at through a fully rational, scientific investigation into the nature of reality, and he thinks there is no scientific evidence for the existence of God or the soul.

The New Atheists do not think that religion is independent of or immune from the methods of the science. Daniel Dennett, in *Breaking the Spell*, claims religion both can and should be scientifically investigated because religion is a natural, rather than a supernatural, phenomenon, hence is not immune from the instruments of scientific study. He states: “Yes, I want to put religion on the examination table. If it is fundamentally benign...it should emerge just fine....If it is not, the sooner we identify the problems the better.”⁴³ Victor Stenger, in his book, *God, the Failed Hypothesis: How Science Shows that God does not Exist*, takes the same approach as Dennett and arrives at the same conclusion. Just as “we have no evidence for Bigfoot, the Abominable Snowman, and the Loch Ness Monster,” there is no good scientific evidence for the existence of God.⁴⁴ Therefore, “Nirvana is not heaven. Nirvana is nothingness.”⁴⁵

⁴¹ <https://www.youtube.com/watch?v=mWfHkLbMm6w>

⁴² Russell, *Why I am not a Christian*, 14.

⁴³ Daniel Dennett, *Breaking the Spell* (New York: Viking, 2006), 39.

⁴⁴ Victor Stenger, *God, the Failed Hypothesis: How Science Shows that God does not Exist* (Amherst, NY: Prometheus Books, 2007), 18.

⁴⁵ *Ibid.*, 258.

The flip side of the Conflict model is that Science does not triumph over Religion, but rather Religion triumphs over Science. Adherents of this model are often your Fundamentalists of all religious traditions, be they Christian evangelicals, Muslim or Jewish extremists, or Hindus. Fundamentalists believe that every word of their Scripture is the Word of God. So if the account in Genesis says this is how the universe came into existence, then this is how it happened. Thus fundamentalists in the evolutionary debate are called Creationists, or adherents to what is called Creation Science. They see the Bible as a guide or corrective to science. By interpreting Scripture literally rather than figuratively or allegorically, they believe that if the Bible says the world was created in six days, then that is how God created the world. If the Bible says the Jews are the chosen people, or that God gave Palestine to the Jews, then so it is.

The Creationist position was adopted by the Southern Baptist Convention when it unanimously voted in 1926 that “this Convention accepts Genesis as teaching that man was the special creation of God, and reject every theory, evolution or other, which teaches that man originated in, or came by way of, a lower animal ancestry.”⁴⁶ However, the New Atheists portray *all* religious believers as basically fundamentalists. Russell states that most Christians believed “every word of the Bible is divinely inspired” until science forced them to believe otherwise.⁴⁷ Harris too says that you either believe Scripture is inspired, or it’s not; there is no middle ground. You can’t pick and choose which parts of Scripture are divinely inspired and which are not, for doing so is a human judgment. Needless to say, this is a caricature. It erects the straw man that all religious

⁴⁶ Ronald Numbers, “The Creationists,” in *But is it Science? The Philosophical Question in the Creation/Evolution Controversy*, ed. by Michael Ruse (Buffalo, NY: Prometheus Books, 1988), 233.

⁴⁷ Russell, *Religion and Science*, 10.

people are ignorant fundamentalists, ones whose beliefs are easily knocked down by the modern-day scientifically-informed worldview. Most people today recognize that many of the stories in found in religious Scripture must be interpreted figuratively rather than literally, and that Scripture represents human accounts of revelation, but is not the revelation itself.

3.2 The Independence Model

The Independence model argues that Religion and Science are autonomous fields; each has its own distinct domain and methods. Science gives accounts of secondary causes. Religion gives accounts of primary causes or metaphysical first principles. But the two remain different realms, and as a result a scientist can only issue authoritative statements concerning science, but not on religion. Similarly, religious authority figures must defer to the scientist concerning matters of science, but not on religion. Examples of adherents of the Independence model include non-literalist evangelical, conservative Christians, neo-orthodox Protestants, some existentialists, and various linguistic analysts who might argue that the two fields represent different language games.

Stephen Jay Gould is perhaps the most famous scientist to adhere to this model. In his article “Nonoverlapping Magisteria” (NOMA) he responds to Pope John Paul II’s 1996 address to the Pontifical Academy of Sciences entitled “Truth Cannot Contradict Truth,” which argued that evolution and Catholic doctrine are compatible. Gould sees both science and religion as having separate realms of expertise, the church presiding over matters of faith, morals, and values, whereas the realm of science is concerned with

the empirical investigation of the constitution of the universe. Each realm has its own professional or teaching authority (magisteria) and the realms do no overlap. Scientists should not be issuing authoritative proclamations concerning religion, and religious leaders should not decide scientific doctrine. In other words, Gould's NOMA principle affirms methodological naturalism, but not metaphysical naturalism, and argues scientists should remain neutral concerning religious matters. He quips that scientists study how the heavens go and theologians determine how to go to heaven.⁴⁸

Gould argues that the NOMA principle is in fact the official doctrine of the Catholic Church concerning the relationship between faith and science, and is found in Pope Pius XII's 1950 encyclical *Humani Generis*. However, though the two realms are distinct, there are certain subjects and areas where these two "domains press hard against each other."⁴⁹ Evolution is one of these areas, and this issue is addressed in *Humani Generis*. In it, Pius states that Catholics should believe whatever science determines concerning the evolution of the body as long as they accept two things, that the world is the divine creation of God, and that souls are created by God and infused into human beings.⁵⁰ Gould, however, claims Pius trespasses the NOMA principle in the encyclical when he argues two further points, that evolution is still just a theory and not yet proven, and holds that polygenism, or ancestry from multiple human parents rather than just one pair, is incompatible with original sin. Gould states: "I would declare him out of line for letting the magisterium of religion dictate a conclusion within the magisterium of science."⁵¹ On the other hand, Gould acknowledges that the existence of souls is beyond

⁴⁸ Stephen Jay Gould, "Nonoverlapping Magisteria," *Natural History* 106 (March 1997), 18.

⁴⁹ *Ibid.*, 19.

⁵⁰ Stephen Jay Gould, *Rock of Ages* (New York: Ballantine Books, 1999), 80.

⁵¹ Gould, "Nonoverlapping Magisteria," 19.

his magisterium of science, which can neither prove nor disprove their existence. Thus Gould draws the boundaries of science and recognizes that there are issues about which science must remain neutral. As such, he sees his dialogue with the Church as a ‘rapprochement’ between the fields of science and religion. There should not be hostility, and each should respect the autonomy of the other and try to gain a mutual understanding.

Needless to say, adherents to the Conflict Model reject Gould’s NOMA argument. Richard Dawkins rejects the idea that theology or religion is “a subject at all.”⁵² In other words, religion studies nonsense, and as a result doesn’t even deserve to be called a field with its own magisterium. Daniel Dennett not only rejects NOMA, but, he claims, so does any theist whose arguments are based on natural theology. He states: “I don’t buy it, and neither does Plantinga. He certainly sees the science of evolutionary biology as ‘overlapping’ with his religious beliefs.”⁵³ Sam Harris also rejects NOMA, saying “every religion makes specific claims about the way the world is...about facts....Such claims are intrinsically in conflict with the claims of science, because they are claims made on terrible evidence.”⁵⁴

3.3 The Dialogue Model

Rather than seeing science and religion as separate, independent domains, the Dialogue model sees compatibility between the two fields so that each may inform the

⁵² Dawkins, *The God Delusion*, 80.

⁵³ Daniel Dennett and Alvin Plantinga, *Science and Religion*, (New York: Oxford University Press, 2011), 49.

⁵⁴ Harris, *Letter to a Christian Nation*, 64.

other on some, but not all, issues. Thomas Torrance thinks theology is quite distinct from science in that its subject matter is not an object, but a subject, namely God. In addition, “science raises fundamental questions that it cannot answer.”⁵⁵ Science studies the universe, but cannot tell us why it exists or whether it has a purpose. Theology can answer these questions because it is all-encompassing and “is the study of reality as a whole.” It sees God as the necessary ground of a contingent universe. In addition to the Protestant Torrance, three Roman Catholic theologians who are advocates of the Dialogue model are Ernan McMullin, Karl Rahner, and David Tracy. They believe that scientists study secondary causes, while the theologian posits God as the primary cause of secondary causes.

Adherents to the Dialogue model believe science is not as objective as the positivists believed, nor is religion as subjective as certain existentialists claim. Barbour states: “the scientific criteria of coherence, comprehensiveness, and fruitfulness have their parallels in religious thought.”⁵⁶ Since quantum physics has demonstrated the object of observation is not inseparable from the subjectivity of the observer, Michael Polanyi believes all evidence involves personal assessment and judgment. John Polkinghorne, like Kuhn and other post-modern philosophers of science, believes that all data is theory-laden. As a result, the religious views of the scientist influences how he interprets what he or she sees. Barbour thus argues that theology, as a reflective enterprise, should “be open to new insights, including those derived from the theories of science,” just as science should be open to theological interpretations as well.⁵⁷ Other

⁵⁵ Ian Barbour, *Religion and Science*, 90.

⁵⁶ *Ibid.*, 93.

⁵⁷ *Ibid.*, 95.

adherents to the Dialogue model include those who see Nature as sacred, i.e., who believe that there is a religious dimension to nature that a strictly naturalistic science misses.

3.4 The Integration Model

The Integration or Complementary model argues that since both science and religion seek Truth, and If God is the author of creation, and science studies the created world, then the Book of Nature is a separate type of revelation which reveals the laws of nature. The laws of nature are simply constants in God's mind. This parallels Einstein's desire to know God's thoughts. The naturalist thinks he knows a great deal more than the layperson by studying science. But if theism is true, the religious person can not only study science and know what the naturalist knows, but he/she can also study higher-order truths, the truths of first philosophy as well. The theist's range of possible knowledge is larger than that of the naturalist due to the latter's narrower metaphysics. Isaac Asimov defines science as the desire to know. Aristotle stated that that all men by nature desire to know. If science is curiosity about the world, and theology is curiosity about the creator of the world, the highest order of 'those that know' would be the religious scientist. To study nature is to study God, since the created order of the world bears some resemblance to the mind that created it.

This is the central insight of the tradition of natural theology formulated by Thomas Aquinas and his successors. In Roman Catholic theology, "natural theology has traditionally held a respected place as a preparation for the truths of revealed theology."⁵⁸

⁵⁸ Ibid., 99.

Natural theology begins with observations about the physical world which are available to anyone, and from these attempts to formulate an explanation of them. Thus the findings of science can tell us something about God. Richard Swinburne goes a step further, arguing that “something outside the web of physical laws is needed to explain the rise of consciousness...Religious experience provides additional crucial evidence....On our total evidence, theism is more probable than not.”

In the Integration model there is more of a systematic synthesis of science and religion than in the Dialogue model. The Integration model sees the universe as an emanation of God’s being, whereas the Dialogue model sees the universe more as a creation. The Transcendentalists Emerson and Thoreau, and various religious ecologists, Muir, and Leopold, might be interpreted along this vein. Teilhard de Chardin thought a synthesis of religion and science was possible. Yet unless one is a mystic it is difficult to assess his claim that: “Everywhere in the stuff of the Universe there necessarily exists an internal conscious face lining the external ‘material’ face habitually the only one seen by science.”⁵⁹ Alfred White Northhead’s process theology also tends to follow this line of thought, namely, that to study nature is to study God. To this extent, however, the Integration Model goes beyond traditional theistic orthodoxy. Traditional theistic orthodoxy sees creation as separate from God, and creation may bear a resemblance to God and offer some insight into God’s mind, but then again it might not.

4. The Implications of Evolution for Naturalism and Theism

⁵⁹ Kathleen Duffy, *Teilhard’s Mysticism, Seeing the Inner Face of Evolution* (Maryknoll, NY: Orbis Books, 2014), 3.

Many of the models that examine the relationship between science and religion also apply to the debate over the compatibility of evolutionary theory and theism. To borrow from the Conflict model, evolution just seems to be one of the latest battles between science and religion. But, as noted previously, what the term 'evolution' denotes, has developed since Darwin's time. The synthesis between Darwinism and Mendelian genetics into population genetics that occurred in the 1920s and 30s did not resolve all issues. The field of evolutionary biology is of fairly recent origin, involving the fields of genetics, molecular biology, zoology, paleontology, paleoanthropology, and even sociology. Some even try to extend the reach of evolution to ethics. The question then becomes, what implication does evolution have for the relationships of science and religion? Does evolution tip the scale towards one or the other? What does evolution bring to the table that could affect either? The answer is, a lot.

However, it should be noted that theism should not be equated with religion, as theism is just one type of many different religious outlooks. Nor should science be equated with metaphysical naturalism, although it is intimately connected to methodological naturalism. Evolutionary theory, while a scientific theory, can also be open to theistic guidance. In addition, some question whether evolutionary theory is more of a philosophy or an ideology than a science. Some aspects of evolutionary theory are not subject to experimentation in the way that traditional scientific theories are. The origination or birth of a new species has never been observed. In addition, it is possible that there are two kinds of evolution: guided, and unguided. Even if it turns out that God exists, it does not follow that evolution is or has been guided by a divine being. It is still possible to assert theism and unguided evolution (evolution by means of natural

processes). But since in traditional theism a transcendent God is involved in creation, unguided evolution and theism do seem an unlikely combination.

Further complicating an investigation of the logical compatibility of evolutionary theory, theism, and naturalism is the fact that these views can be related in different ways. Here, we shall confine the relations to deduction, induction, abduction, and Bayesian probability theory. A deductive analysis of our triad begins by defining the key terms. Then, depending upon which proposition is taken as the starting point or ‘given,’ one determines what inferences one can deduce as a result of accepting our initial proposition as true. Inductive arguments result in degrees of strength and weakness depending upon the nature of the evidence. Abductive reasoning aims for the best explanation of the information at hand. All inductive and abductive arguments are recognized as fallible. Bayesian theory attempts to assess the degree of probability of a theory, given a prior probability and an evidence ‘update.’ It is capable of gauging the probability of rival theories, such as unguided vs. guided evolution.⁶⁰

Let us first examine the deductive relations of evolution, theism and naturalism. Deduction derives consequences based upon syntax and the definition of terms. For our purposes, we will limit ourselves to five terms: metaphysical and methodological naturalism, guided and unguided evolution, and theism. By determining the truth value of any one of these propositions, we can then examine the truth value of the other propositions. If it is possible that they both can be true, then they are consistent with one another. In asserting the truth of each proposition, a claim about the objective truth of the

⁶⁰ Elliott Sober, *Evidence and Evolution: The Logic behind the Science* (Cambridge: Cambridge University Press, 2009), 3.

proposition is not being made. Truth values are only assumptions about a possible state of affairs, and not objective reality.

Let us begin by assuming that naturalism is true. If naturalism is true, then unguided rather than guided evolution is true, and theism is necessarily false, since theism asserts that there is a supreme being as well as spiritual beings that transcend the natural physical world and guides its processes. However, as noted earlier, naturalism takes two forms, metaphysical and methodological. The inference just made governs only metaphysical naturalism. The claim is: If metaphysical naturalism is true, then unguided evolution is true, and theism false. Metaphysical naturalism contradicts theism and guided evolution because it rules out the possibility of non-natural causes and events. However, this argument does not state whether we should accept metaphysical naturalism as true. Blankly asserted, metaphysical naturalism is sheer dogmatism. Dennett and Dawkins claim that, unlike the theist (who, they argue, has no evidence to support his/her beliefs), their position is not dogmatic, but based upon the evidence supplied by methodological naturalism. This would mean that methodological naturalism, and not metaphysical naturalism, is their given. Methodological naturalism, being a method, can be neither true nor false. Truth and falsity are determined by the evidence obtained through this and perhaps other methods. This raises the question whether methodological naturalism should be the only method for determining the truth value of metaphysical positions. Stephen J. Gould says no, while adherents of scientism say yes. Gould argues that methodological naturalism should be restricted to making judgments only within its

own magisterium, but theism, being outside its jurisdiction, cannot be determined as true or false by the method of science.⁶¹

Is Gould right, or does taking methodological naturalism as our starting point entail metaphysical naturalism, as the New Atheists claim? The answer is no. Methodological naturalism does not logically entail metaphysical naturalism, evolution, or theism. It is possible it might provide evidence for or against any of them. Using the method of science to inquire into the origin of species may support the argument that life evolved by means of unguided evolutionary processes without the need for theism. This position appears to endorse metaphysical naturalism and is the one held by Daniel Dennett and Richard Dawkins. But methodological naturalism could also provide evidence for both guided evolution and theism by demonstrating that some organisms or their organs might be too complex to have evolved through strictly unguided natural processes. This is the position of Michael Behe, Stephen Meyer, and others who adhere to intelligent design.

To use methodological naturalism to justify metaphysical naturalism is unwarranted because the method that is used to allegedly prove metaphysical naturalism begins with parameters that restrict its investigations to the merely physical. To make the inference warranted requires an extra premise: methodological naturalism reveals the whole of reality. But adding that premise makes the argument question begging. Just as it is circular to use induction to justify induction (why should the future continue to resemble the past? Because in the past the future has resembled the past), so it is circular to argue that a method which allows for only natural causes, plus the needed additional

⁶¹ Gould, "Nonoverlapping Magisteria," 18.

premise, results in the conclusion that only natural causes exist. This is the insight that is fundamental to Stephen Jay Gould's NOMA argument and the Independence Model, that the parameters placed on science disallow scientists from making assertions about anything beyond the non-physical, since it is beyond the scope of their magisterium, or domain of expertise. As a strict deductive proof, the claim that metaphysical naturalism follows from methodological naturalism, is, properly understood, circular.

As a result, those who employ methodological naturalism as a method cannot make judgments about theism. Richard Dawkins, however, attempts to circumvent Gould's argument by claiming that science can provide evidence for just about anything, including the existence of God, the soul, and even ethical values.⁶² Dennett too does not buy into the idea that the scientific method must limit itself to judgments about the natural world and refrain from consideration of supernatural.⁶³ He argues in *Breaking the Spell* that a scientific study of religion reveals it is of natural rather than supernatural origin, that religion is strictly a "human phenomenon."⁶⁴ Dennett and Dawkins believe the evidence gleaned from science provides overwhelming proof both for unguided evolution and metaphysical naturalism, and against theism. While their assertions are not that different from other naturalists, such as David Hume, what is different is that they believe they have new evidence in their favor, viz., a mechanism to explain how life arose. That mechanism is natural selection. In other words, they believe evolution provides conclusive evidence against any kind of intelligent designer who transcends the universe and guides the evolutionary process.

⁶² Dawkins, *The God Delusion*, 70, 72, 80. Dawkins goes so far as to state that he does not even see theology as a proper subject of study. To him, it is the study of nothing.

⁶³ Dennett and Plantinga, *Science and Religion*, 49.

⁶⁴ Dennett, *Breaking the Spell*, 25.

Since their conclusion is based upon the methods of science, the inferential claim made here is not deductive, but inductive. So their arguments cannot be said to constitute certain proof. The best that inductive reasoning can achieve is probability. So if they claim evolution is supported through science and methodological naturalism, and evolution occurs through strictly natural processes in an unguided way, this means they can only conclude there is strong evidence to accept metaphysical naturalism, but not certainty. They are claiming that nothing outside of nature is needed to explain unguided evolution. If evolution is taken as evidence for God's existence, that argument fails. God isn't needed. If, on the other hand, the empirical evidence makes theism more likely than metaphysical naturalism, then Dawkins and Dennett's arguments are much weaker than they claim. This lends support to the opponents of Dennett and Dawkins, who argue their naturalism is an ideology and a dogmatic assumption, rather than based upon evidence.

Thus metaphysical naturalism does not follow logically from the adoption of methodological naturalism, and since it is, at best, based upon finite empirical evidence, the evidence for it – empirical success – cannot establish its unequivocal truth. The empirical methods of Thomas Aquinas, in fact, are similar to that of methodological naturalism, but unlike Gould or Sober, Aquinas believed the study of the natural world did not have to remain neutral concerning theism, but could provide strong evidence for it (suggesting he followed the Dialogue model, not the Independence model). The Fine-Tuning argument for God's existence constitutes a more contemporary, updated version of the Design Argument. Martin Rees and Alistair McGrath argue that certain constants of the universe (like the force of gravity, or the strong nuclear force) appear to be fine-tuned for the development of life, thus provide scientific support for theism. As a result,

for some philosophers methodological naturalism provides good evidence for theism, and against metaphysical naturalism. In any case, only adherents of scientism believe that methodological naturalism is our only means of obtaining reliable information about reality. Many theists argue that methods other than those of science play a role in obtaining knowledge. Intuition, revelation (historical and personal), pure reason, mystical insight, religious experience, and innate knowledge, have been proposed as such methods. Again, the method of science, if there is one, only holds for science, and is not necessarily authoritative for other fields.

It has been shown that it is possible to arrive at a theistic position from both inside and outside methodological naturalism. So assuming theism to be true (leaving open the method by which this position is reached), what logical implications follow concerning our other positions? If theism is true, then metaphysical naturalism must be false, as the two metaphysical positions contradict each other. Theism occludes metaphysical naturalism since theism asserts the existence of non-natural beings and events. Given theism, evolution can be either true or false, or partially true and partially false, as it is possible God created all or some beings directly rather than through evolutionary processes, or instilled some with supernatural souls and not others. If evolution is accepted as true, it can also be either guided or unguided without pain of contradiction. Theism does not rule out unguided evolution because this may have been the way that God chose to create life. So concerning evolution, accepting theism neither rules out evolution nor makes it guided. However, unguided evolution is less likely in a theistic context than guided evolution, given that according to traditional theism God is actively

involved in creation. Guided evolution is at least more compatible with the type of godhead presented in the Judeo-Christian tradition of theism.

However, the central claim of the New Atheists and sociobiologists is that evolutionary theory itself provides substantial evidence in favor of metaphysical naturalism and against theism. In other words, Dennett and Dawkins claim that evolution has metaphysical implications, that if we fully understood evolution, we would rule out theism and endorse a naturalistic worldview. But as we have shown, this conclusion cannot be derived from evolutionary theory because it is a scientific theory that purportedly is governed by the methods of science and methodological naturalism. Some intelligent design proponents argue that metaphysical naturalism and unguided evolution are physically incompatible (not logically), since some living systems are too complex to have arisen by themselves. Michael Behe asserts that eukaryotic cells are so complex they couldn't have developed by strictly natural means. Plantinga's evolutionary argument against naturalism (EAAN) states that the probability our cognitive faculties are reliable is low given naturalism and evolution $[P(R/N\&E)]$.⁶⁵ Thus he sees evolution as supporting, rather than refuting, theism. Plantinga does not begin with methodological naturalism nor is constrained by it. He appeals to faculties and methods beyond those of the empirical sciences to justify theism, such as Calvin's *sensus divinitatis*. However, to the extent that his argument invokes the probability calculus, he may be said to be using the inductive method.⁶⁶

Another logical possibility is that one may accept the truth of evolutionary theory, but believe that it has no logical bearing on either metaphysical naturalism or theism.

⁶⁵ Dennett and Plantinga, *Science and Religion*, 17.

⁶⁶ Plantinga, *Where the Conflict Really Lies*, 311-346.

This is Thomas Nagel's position in *Mind and Cosmos*. Nagel believes the sociobiologists' inference from evolutionary theory to naturalism is unwarranted, since many phenomena defy naturalistic reduction.⁶⁷ However, he does not believe taking this position forces him into the theistic camp. In *Mind and Cosmos*, Nagel offers a similar but different argument against naturalism by asserting that there are various phenomena that defy a purely reductionist explanation. Nagel agrees with Plantinga's EAAN. He sees evolutionary theory as playing the same epistemic role in metaphysical naturalism that divine benevolence played in Descartes' attempt to overcome doubt.⁶⁸ But just as divine benevolence failed to secure an epistemic foundation for Descartes, so may evolution fail to secure reliability for the naturalist's cognitive faculties.

Nagel, however, differs from Plantinga in that he stops short of embracing theism, claiming both theism and naturalism surpass the limits of contemporary human knowledge. Nagel preaches the virtue of intellectual humility and seeks to scale back philosophical claims and confine them to addressing that which we can know, which is ourselves, our own minds, and the fact that our mind perceives an intelligible order in the universe. We are confronted with an ordered universe which presents us with a problem – why are there laws of nature? To simply say 'this is just how things are, deal with it,' is not good enough.⁶⁹ But this is precisely the answer we are left with if naturalism is true, and its dissatisfaction in answering the question leads Nagel to reject it. The interest in solving the mystery of the intelligible order of the universe is enough that it should make theism at least attractive to any atheist. But even the theistic answer, that there is a divine

⁶⁷ Thomas Nagel, *Mind and Cosmos, Why the Materialist Neo-Darwinian Conception of Nature is almost Certainly False* (Oxford: Oxford University Press, 2012), 10.

⁶⁸ *Ibid.*, 27.

⁶⁹ *Ibid.*, 20.

mind that is responsible for the physical and mental characteristics of the universe, still leaves the account incomplete. To say that God is the source of this order, as theists do, is an unjustified inference since we do not have access to the supernatural God of theism. Thus neither theism nor naturalism is sufficiently comprehensible to satisfy our understanding. Since both are inadequate, Nagel is unable to affirm either.

5. Evolution Defeats Theism

In the conflict between evolution, naturalism, and theism, the New Atheists see theism as the weakest link. Dennett sees Darwin as a ‘universal acid,’ discrediting theism to such an extent so as to render it false. Evolution, they claim, undermines not only natural theology, but revealed theology as well. In natural theology, evolution casts doubt on the design argument by claiming that natural processes can account for the origin of complex organisms rather than an intelligent designer (Dawkins’ ‘blind watchmaker’). It also lends support to the problem of evil, which is used as a counterargument to theist claims. It is these implications which were most detrimental to the erosion of Darwin’s faith. Towards the end of his life Darwin felt that a God who created by means of natural selection, through ‘warfare’ in which the strong struggle with and outcompete the weak, produces too much suffering. A God who would create life in this fashion is incompatible with the traditional loving, benevolent God of theism. In a letter to Asa Gray, Darwin states this point very concisely:

I cannot see, as plainly as others do, & as I should wish to do, evidence of design & beneficence on all sides of us. There seems to me too much misery in the world. I cannot persuade myself that a beneficent & omnipotent God would have designedly created the *Ichneumonidae* with

the express intention of their feeding within the living bodies of caterpillars, or that a cat should play with mice.⁷⁰

In addition, some contemporary philosophers argue that evolution is incompatible with the Catholic tradition of Scholasticism. Aristotle noticed that seeds always grew to the same form: acorns became oaks, not elms. The goal of an acorn is to become an oak. Aristotle saw in nature an order, a principle that directs things toward their own goal or *telos* (end). At the heart of Aquinas's synthesis of Christian theology with Aristotle, is the idea of a substantial nature. Aquinas appropriates God in fixing these essential natures. But evolution discredits teleological final causes, as well as immaterial formal causes which organisms seek to actualize. Darwin casts doubt upon the idea of a fixed species' essence, a universal nature which all individuals of that species share. Darwin argued instead that they change over time in response to the pressures of natural selection acting upon variations within a population. The modern evolutionary synthesis rejects all typological and essentialist thought in favor of anti-essentialism. As a result, Darwin's nominalism discredits the Scholastic tradition built upon the assumption of essences.⁷¹

The New Atheists also claim that evolution undermines revelation as recorded in scripture by demonstrating that the human creation story as told in the Bible is false. This has the effect of diminishing the authority of the Bible as the inerrant word of God. If God were truly the author of Genesis, then you would have expect the Creation story to reflect the scientific understanding that humans were created by evolutionary processes.

⁷⁰ Charles Darwin, letter to Asa Gray, May 22, 1860. Quote found in Nick Spencer, *Darwin and God* (London: SPCK, 2009), 85.

⁷¹ Logan Paul Gage, "Can a Thomist Be a Darwinist?" in *God and Evolution*, ed. by Jay Richards (Seattle: Discovery Institute Press, 2010), 188-196.

Since it does not, this implies the Bible is of human origin, and hence a natural rather than supernatural phenomenon. The New Atheists are obviously not the first to recognize that Darwin presents a problem for a literal interpretation of Genesis. Theologians are well aware of the issue, but few have offered up a satisfactory attempt to resolve the issue. The Catholic Church has made some attempts to reconcile its teachings with the evolutionary claim that human ancestry can no longer be traced back to a single couple, Adam and Eve. While the actual historical existence of Adam and Eve may not be much of an issue for most people, many theological doctrines are intimately connected to the story of Adam and Eve's creation and subsequent fall. To deny Adam and Eve's actual existence undermines much Christian theology, which builds upon the supposition that there was a historical couple that disobeyed God and fell.

In his 1950 encyclical *Humani Generis*, Pope Pius XII affirmed the evolution of the body, while allowing for the creation of the individual soul by God. However, the encyclical rejects polygenism in favor of monogenism, or the idea that all modern humans can be traced back to a single pair of humans. But it is unclear whether the encyclical is affirming theological monogenism (an actual couple, who disobeyed God), or scientific monogenism (Y-chromosome Adam and mitochondrial Eve). Scientific monogenism as a theory arose from a 1987 *Nature* article by Cann, Stoneking, and Wilson, arguing that all females can trace their descent from a single woman, 'Mitochondrial Eve, who lived around 170,000 years ago.'⁷² Similarly, in a 2000 paper published in *Nature Genetics*, geneticists were able to determine that all modern males

⁷² Spencer Wells, *Deep Ancestry* (Washington D.C.: National Geographic Society, 2007), 157-9. Also, Cavalli-Sforza, *The Great Human Diaspora*, pgs 65-73. The actual article argues for around 140,000 to 290,000 years ago.

alive today derive their Y chromosome from a single man who lived around 59,000 years ago in Africa.⁷³ For this reason, Daniel Dennett states that “Mitochondrial Eve is the woman who is the most recent direct ancestor, in the female line, of every human being alive today...The same logical argument establishes that there is an Adam as well, call him Y-Chromosome Adam.”⁷⁴ Thus scientific monogenism offers up a naturalist version of Adam and Eve. While the 1950 encyclical argued for monogenism, it is doubtful that scientific monogenism is the kind of parental lineage it meant, as this theory was not developed until after the encyclical was written.

Perhaps the reason the encyclical does not deny human descent from an original couple is that doing so would undermine the story of the fall and the doctrine of original sin. Without original sin, there is no need for baptism other than as an initiatory ritual, because the purpose of baptism is to wash original sin away. More importantly, as some have noticed, without the doctrine of “Original Sin, the entire rationale for a savior” is eroded.⁷⁵ If so, then evolution does have the effect of discrediting much of the Western theistic tradition. Evolution thus presents an overwhelming problem for traditional theism. For much of Western history, the creation story told in the Bible and interpreted by Augustine, is the principle account of human origins. As a result, much of Christian theology was based on a literal understanding of our first parents, whom God placed in the order of things “a little lower than the angels,” but who disobeyed God’s decrees, resulting in a depraved human condition in need of atonement and redemption.⁷⁶ Darwin threatens to unravel this entire narrative. Thus Dennett states that “Darwin rendered

⁷³ Spencer Wells, *The Journey of Man* (Princeton: Princeton University Press, 2002), 54.

⁷⁴ Daniel Dennett, *Darwin’s Dangerous Idea* (New York: Simon & Schuster, 1996), 97-98.

⁷⁵ Larry A. Witham, *Where Darwin Meets the Bible* (Oxford: Oxford University Press, 2002), 192.

⁷⁶ Psalm 8:6

obsolete” this entire worldview. If so, let us examine the medieval world view, the view of “how the world looked before he [Darwin] inverted it.”⁷⁷

In Genesis, God creates Adam’s body out of the dust, but his physical body came to life only after God breathed on it. Augustine believes God literally “breathed into his face the breath (spiritus) of life, and man was made into a living soul...the breath of God is to be taken as having issued from God’s mouth...and he is immaterial, as was the breath.”⁷⁸ In Adam’s prefallen condition he had an animal body, a body taken from the dust of the earth, which was sustained by all the various fruits of the trees found in the garden. However, Adam’s body was not corruptible, not subject to either aging or dying, due to his sustenance from the tree of life.⁷⁹ In the garden, Adam’s interaction with God was direct, and, though he was naked, Adam was not ashamed. “He lived in the enjoyment of God...without any want....True joy flowed perpetually.”⁸⁰

God tells them they can eat of any tree in the garden, but warns them not to eat from the Tree of Knowledge, for “on whatever day you eat of it, you will surely die.” When they do, they are driven from Paradise and sentenced to die. Augustine sees this punishment as consisting of not one but two deaths: “the death of the soul and the death of the body.”⁸¹ The first consists of the death of the body and separation of the soul. But the second death consists of the “death of the soul,” in that the soul is eternally deprived of its source of life, which is God, and hence damned. Human nature has been radically affected by concupiscence, “the universal human inclination to sin,” in which the flesh no

⁷⁷ Dennett, *Darwin’s Dangerous Idea*, 25.

⁷⁸ Augustine, *City of God*, 540, 544-5.

⁷⁹ *Ibid.*, 533-4.

⁸⁰ *Ibid.*, 590.

⁸¹ *Ibid.*, 522.

longer obeys the spirit.⁸² Adam and Eve were “embarrassed by the nakedness of their bodies” because the “seminal nature from which we were begotten” has now been perverted so that “the flesh began to lust in opposition to the spirit.”⁸³ For Augustine, this disordered love of things and self, of the flesh over God, is the mark of an evil will. Human nature is now “vitiating and altered,” i.e., made imperfect, faulty, impaired.⁸⁴ This impairment is caused by “the rebellion and disobedience of desire in [the] body.”⁸⁵ “Man’s nature suffered a change for the worse; bondage to sin and inevitable death.”⁸⁶ This nature is passed on to Adam’s offspring, since “the whole human race was in the first man...and so it is that everyone, since he takes his origin from a condemned stock, is inevitably evil and carnal to begin with, by derivation from Adam.”⁸⁷ As a result, Augustine states in the *Confessions* that “no man is clean of sin, not even the infant who has lived but a day upon the earth.”⁸⁸ This statement is aimed at the Pelagians, who denied that infants were born with hereditary sin.

Thus Augustine coins the term ‘original sin’ to describe the altered condition of human nature that all the offspring of Adam, save Jesus and Mary, have inherited. Since all humans fell through Adam and inherited his corrupt nature, it is through the second Adam, Jesus, that the healing of this broken relationship is made possible. Even the original face-to-face relationship between Adam and God is momentarily restored through the Incarnation of Jesus Christ, “for in him dwells all the fullness of the Godhead

⁸² Jerry D. Korsmeyer, *Evolution & Eden* (New York: Paulist Press, 1998), 24.

⁸³ Augustine, *City of God*, 522-3.

⁸⁴ *Ibid.*, 513.

⁸⁵ *Ibid.*, 513.

⁸⁶ *Ibid.*, 547.

⁸⁷ *Ibid.*, 510, 512, 596.

⁸⁸ Augustine, *Confessions*, 49.

corporeally.”⁸⁹ The concept of the Fall also has consequences for how science is conducted. Bacon believed that prior to the Fall, Adam possessed pure natural knowledge, but that after the Fall, “the senses of human beings...were corrupt, and...reliable knowledge was not to be had by trusting such debased sources.”⁹⁰ Calvin and Barth saw the Fall as not only resulting a morally depraved condition, but as stripping humans of their “sound intelligence” as well.⁹¹

Pascal, too, saw in Adam’s choice, disastrous consequences for all his offspring. Adam’s disobedience resulted in human estrangement from God. This is the rationale behind Christianity’s claim that God sent his son to try to restore that relationship. St. Paul states: “it is in Adam that all die, so also it is in Christ that all will be brought to life.”⁹² The hope for resurrection promised to those who believe in Christ takes the sting out of Adam’s punishment, death. On the other hand, the wicked who fail to acknowledge Jesus before others, are merely carnal animals and only have concern for the flesh and sensual pleasures. Citing St. Paul in 1 Cor 2:11 Augustine states: “The ‘animal’ man does not grasp what belongs to the Spirit of God; it is all folly to him.”⁹³ Thus Christ atones for Adam’s sin and restores the breach caused by the fall, but only partially, since death still remains.

A fictitious Adam, as evolution infers he is, necessitates the rethinking of the doctrine of original sin and much of the theology which rests upon it. Evolutionary theory proposed a very different story of man’s origin and the nature of his being. That

⁸⁹ Ibid., 81.

⁹⁰ Steven Shapin, *The Scientific Revolution* (Chicago: University of Chicago Press, 1998), 74.

⁹¹ John Macquarrie, *Principles of Christian Theology* (London: SCM Press, 1977), 49-50.

⁹² Augustine, *City of God*, 540. Quote from 1 Cor. 15:22.

⁹³ Ibid., 533.

man is an animal and not made in the image of God is at the heart of evolutionary theory. Rather, humans and apes descended from a common ancestor close to 8 million years ago. As a result, chimps and humans share up to 99.5% of their evolutionary history and between 96-98% of their DNA.⁹⁴ In addition to having larger brains, humans differ from the other 192 species of monkeys and apes in that they are not covered with hair.⁹⁵ It is ironic that Genesis actually mentions this, that Adam experiences a sense of shame over his nakedness, which might be interpreted as not only the absence of clothes, but a lack of hair. To an evolutionary biologist this lack of hair might be an evolutionary strategy to make sexual contact amongst humans more stimulating, hence increasing their chances of successful reproduction.⁹⁶ Or, it could be seen as the result of sexual selection, of females expressing a preference for males with less hair. But from a genetic viewpoint, with such a little genetic difference separating apes from humans, the question is: why do humans alone consider themselves the only being with a soul? Is a 2-4% difference in our genetic makeup really enough to justify our anthropocentrism and our placement of ourselves at the top in the Great Chain of Being?

Rather than taking the biblical story of the Fall literally, as postulating a historical Adam, maybe it represents an allegorical attempt to explain why God and human beings are no longer on speaking terms. The Fall states that “men are separated from God by an awesome sentence...worse, the separation is entirely of their own doing.”⁹⁷ St. Augustine states that one of the chief characteristics of fallen human beings is that they are “deprived of God’s favour,” alienated and no longer in direct communication with

⁹⁴ Richard Dawkins, *The Selfish Gene*, (Oxford: Oxford University Press, 2006), xix.

⁹⁵ Desmond Morris, *The Naked Ape* (New York: Dell Publ., 1978), 9.

⁹⁶ *Ibid.*, 71.

⁹⁷ James O’Donnell, *Augustine* (Boston: Twayne Publ., 1985), 67.

God.⁹⁸ This could simply be interpreted as claiming God has withdrawn from the physical universe. Because of Adam, God is not found in our garden. Thus the notion of original sin as privation and deprivation, as the absence of God's sanctifying grace or presence, an interpretation central to medieval theologians such as Anselm and Aquinas, could be a possible interpretation of original sin to a modern theist who accepts evolution and rejects a literal Fall.⁹⁹

Another option to modern theists is to deny the existence of original sin altogether. This train of thought would accept the line of thinking that 'Darwin has refuted the Bible,' at least regarding a literal reading of the first three chapters of Genesis. William Hordern argues that there are two scientific discoveries that have particularly troubled orthodox religion, those of Copernicus and Darwin. He claims that Darwin's theory of evolution made the orthodox picture of man's fall appear ridiculous. "Man had not fallen; he had started out as a mere beast and, over a relatively short time, considering the age of the universe, had risen to unbelievable heights."¹⁰⁰ By undermining the notion of human depravity, Darwin and the Enlightenment rationalists prepared the way for the rise of theological liberalism with its creed of the goodness of man. Hordern states: "Liberals, as a whole, have usually denied the doctrine of original sin....Liberals have insisted that there is nothing radically wrong with human nature as such."¹⁰¹

Another point of disagreement between the Biblical and the scientific explanation concerns the nature of death. Augustine sees this world as akin to a penal colony,

⁹⁸ Augustine, *City of God*, 522.

⁹⁹ Richard McBrien, *Catholicism* (New York: HarperCollins Publ., 1994), 188.

¹⁰⁰ William E. Hordern, *A Layman's Guide to Protestant Theology* (New York: Macmillan Publ., 1968), 33.

¹⁰¹ *Ibid.*, 82-3.

punishing us for the sin of the original man. For Augustine, our mortality has a supernatural explanation, since it part of the punishment inflicted on Adam. Post-Darwin, death is no longer regarded as penal, but merely a natural phenomenon. Human nature is neither a mean between angels and beasts; it is mainly if not wholly beast. That man is an animal is a fact, and that he dies likewise is just a fact. The Bible claims that Adam lived 930 years. Such a statement contradicts much of what science tells us about human longevity and why people die. Science seems to refute the notion that death is a punishment inflicted by God upon Adam and Eve and their offspring for their disobedience. Rather, science tells us that death is a natural occurrence based upon cellular senescence due to telomere shortening. Telomeres act like the plastic covering on the end of shoe strings that keep them from unraveling. The Hayflick limit states that human somatic cells are not immortal, but can divide only 40-60 times before their telomeres are too short to replicate again.¹⁰² Hence death is a natural event, not the result of Adam's being driven out of the garden and being denied access to the tree of life. By casting doubt on the actual existence of our first parents and the need to atone for an inherited congenital sinful nature, evolution thus undermines a great deal of Christian theology.

Yet another option available is to recast the doctrine of original sin into the terms of evolutionary biology. Here the inherent sinful behavior of human beings is seen as a sign not of Adam's fall, but of human beings' genetic makeup. In *The Selfish Gene* Dawkins attempts to examine the implications evolutionary theory has for human behavior, particularly whether we are genetically programmed to be selfish or

¹⁰² Sherwin B. Nuland, *How we Die* (New York: Vintage Books, 1995), 75-6.

cooperative. Dawkins notes that since he did not entitle the book *The Cooperative Gene*, it is easy to guess his view. He states that his basic point is that human beings are survival machines programmed by their genes for “ruthless selfishness” for if genes were designed to construct altruistic organisms, they would by their very nature likely die off.¹⁰³ If an animal behaves to preserve or advance another animal’s welfare at its own expense, its own chances of survival are considerably weakened.¹⁰⁴ Thus Dawkins concludes: “What makes a gene good is the ability to build efficient survival machines – bodies....Genes are selected on ‘merit.’ ‘Good’ genes are blindly selected as those that survive in the gene pool.”¹⁰⁵

For Augustine, selfishness is a sign of original sin and concupiscence, the disordered lust after the things of the world, a condition which ensues when “God ceases to be the center of the life.” Concupiscence leads man to commit other sins: “greed, lust, robbery, murder, selfishness.”¹⁰⁶ Augustine sees the fertility of the human race as a result of the lust that arose in human beings as a result of Adam’s sin.¹⁰⁷ From an evolutionary biologist’s standpoint, lust is just the natural result of hormones in our bodies. Evolution dictates that those who are sexually active tend to be more successful in reproducing. Thus it is only natural that genes which harbor aggressive sex drives tend to be more abundant than those without them. Similarly, Augustine sees the selfish behavior of children as evidence for the congenital nature of original sin. He states that as a child, when he “was frustrated...I threw a tantrum because adults did not obey a

¹⁰³ Dawkins, *The Selfish Gene*, 2, 66.

¹⁰⁴ *Ibid.*, 4.

¹⁰⁵ *Ibid.*, 86.

¹⁰⁶ Hordern, *A Layman’s Guide to Protestant Theology*, 22.

¹⁰⁷ Augustine, *City of God*, 583.

child, free people were not my slaves. So I inflicted on them my revenge of wailing.”¹⁰⁸

His point is that if adults acted as selfishly as children do, they would be considered morally reprehensible. Dawkins argues, on the other hand, that not only do adults act like selfish children, but they do so because they are programmed by their genes to act this way. For Dawkins, selfish behavior is not evidence of either sin or divine punishment for it, but simply a requirement for survival. He states: “the logical policy for a survival machine might therefore seem to be to murder its rivals.”¹⁰⁹

There are several conclusions we can draw about the implications evolution has for theology. First, evolution clearly claims Adam and Eve are fictitious beings. They did not live, other than as Y-chromosome Adam and mitochondrial Eve. Denying their actual existence undermines much of Christian theology. Secondly, if evolution is correct, the Fall as represented in Genesis did not literally occur. The denial of a historical fall has numerous theological ramifications. Third, humans evolved not from direct creation by God of an original pair of humans, but from animals, in a process that took millions of years to occur. Fourth, despite all this, evolutionary theory is not fatal to God. Evolution may prove fatal to Adam and Eve as historical beings, but that does not mean that all of Scripture should be discarded and we should stroll down the secular path of naturalism. Evolution is not fatal to a contingent universe or one that needs God to explain its existence or its laws.

As a result of these points, it is necessary to reinterpret the doctrine of original sin, to the extent that this doctrine is based upon a literal interpretation of the fall. Early 19th century Protestant theological liberalism attempted to solve this problem by doing

¹⁰⁸ Augustine, *Confessions*, 8.

¹⁰⁹ Dawkins, *The Selfish Gene*, 67.

away with the concept of original sin. Neo-orthodox theologians after WWII sought to reassert the sinfulness of man by reinterpreting what it meant to be fallen. Because we are deprived of God, the human condition is one of ignorance, mortality, and selfishness. Augustine may be right in claiming there is an original selfish condition in which all human beings find themselves. But did it come from Adam? No. It could have come from apes and be based in genes. Or it could simply reflect the understanding that human beings are deprived of God's immediate presence, hence often act in error. The story of the garden might simply be a myth told to account for the empirical fact that humans are capable of moral evil and wrongdoing, and was never intended to be taken literally. To some, viewing the Fall as a myth suggests it is simply a literary invention of human authorship, and as a result opens the door to the suggestion that God is not really the author of or the inspiration behind Scripture. Seeing the story as a myth of human origin suggests that the Bible is really just a human document, not the infallible Word of God.

John Locke built his case for Christianity on the assumption that the sin of Adam necessitated the Incarnation. He states in *The Reasonableness of Christianity*, "It is obvious to any one, who reads the New Testament, that the doctrine of redemption, and consequently of the gospel, is founded upon the supposition of Adam's fall....What we are restored to by Jesus Christ...we lost by Adam."¹¹⁰ Charles Taylor states it in this way: "In sinning, we deserved punishment and hence were lost to God. A big debt had to be paid. God had this debt paid for us by his own son, and thus opened the way for many of us to return."¹¹¹ The denial of original sin appears to make unnecessary the need for atonement by Jesus for the sin of Adam. There is no longer any need for a

¹¹⁰ John Locke, *The Reasonableness of Christianity* (Stanford: Stanford University Press, 1958), 25.

¹¹¹ Taylor, *A Secular Age*, 651.

second Adam to expiate the sin of the first Adam, because the first Adam didn't exist. If there was no Adam and Eve, there was no disobedience; no disobedience means no inherited sin; no sin means there was no punishment placed on our first parents; no first parents and no punishment means we are not born into any type of congenital depravity; no inherited depravity means no debt to be paid; no debt to be paid means no need for God to send his son to pay it. In essence, the denial of original sin does seem to discredit the need or reason for the Incarnation. Following this line of reasoning we can see why Dennett might claim that Darwin is a universal acid, that evolution not only refutes a literal interpretation of Genesis, but in doing so has undermined the foundation of much of the theology of the Western theistic tradition. As a result, evolution does pose problems for a theology based upon essential claims in Scripture.¹¹²

6. Evolution Defeats Naturalism

One notable philosophical attempt to answer the charge that evolution defeats theism has been made by Alvin Plantinga. In his book *Where the Conflict Really Lies*, Plantinga argues that there is only a 'superficial' conflict between evolution and Scripture. Whereas the New Atheists see concord between naturalism and science, this concord is only superficial. In fact, the real conflict, which he calls deep conflict, is between evolution and naturalism.¹¹³ He argues the New Atheists act as if science advances the worldview of metaphysical naturalism, when in fact it is an overlay that

¹¹² *Four Views on the Historical Adam*, edited by Matthew Barrett and Ardel B. Caneday (Grand Rapids, MI: Zondervan, 2013) is one such attempt to reconcile evangelical views of creation with those of science. See also C. John Collins' *Did Adam and Eve Really Exist?*, and Peter Enns' *The Evolution of Adam*.

¹¹³ Plantinga, *Where the Conflict Really lies*, 265.

atheists place on science, and as a result offers up the interpretation of evolution as a blind, unguided process. As noted, theism endorses direct action in history by God, including the direct creation and infusion of souls into humans, who are made in the image of God. These points are inconsistent with the naturalist picture of a causally closed physical universe in which the laws of nature are inviolable and preclude intervention from any supernatural being. From a naturalist perspective, evolution rules out guidance by an intelligent designer, asserting instead that all life evolved from strictly natural, random processes. Life began in a primordial chemical soup roughly 3.8 billion years ago, when single-celled prokaryotic cells first appeared. Plantinga's argument against the naturalist narrative is that beings such as ourselves could only be the result of a guided process.

His argument is aimed at those who endorse the project of naturalizing epistemology based upon the belief that evolution has proven that human beings have not been designed. He believes theists are afraid to embrace evolution because of the way it is being packaged and marketed, as constituting proof of naturalism. However, naturalism is not a part of scientific theory but a metaphysical add-on, an overlay or gloss which naturalists weld to evolution so as to deceive others into thinking that it disproves theism. He argues that naturalism and evolution may result in the denial of divine design, but by itself evolution does not. On the contrary, he argues, it is evolution and naturalism that conflict, not evolution and theism. Why? Because given naturalism and evolution, the probability that our cognitive faculties are reliable, or $P(R/N\&E)$, is low.¹¹⁴ This is because evolution winnows out only behavior that is non-adaptive, not views that are

¹¹⁴ Ibid., 311-346.

false, or mechanisms that deliver false beliefs. Given naturalism and evolution, cognitive faculties evolved not to determine what is true or false, but simply to aid types of behavior that improve one's overall chances of survival.

What Plantinga is saying is that if human beings are simply the result of unguided natural selection (evolution and naturalism), we have no reason to think that our judgment-making capacities are reliable. How do we know that naturalism is true and that evolution occurred? By the use of cognitive faculties that were produced by purely natural, unguided, random processes, those described by evolutionary theory. Hence we face the same dilemma as Hume's problem of induction. How do we know induction is epistemically justified? By induction. How do we know naturalism and evolution are true? By wholly natural, unguided evolutionary processes which are designed to aid in our survival rather than produce true beliefs. If so, we have no more reason to think we have true beliefs than to think that a 'camera' produced by unguided, purely natural processes takes accurate pictures of the world.

As a result, Plantinga believes it more likely that human evolution was guided to produce beings with reliable cognitive faculties – beings presumably, like ourselves. Plantinga also follows the medieval line of thought that human reason participates in divine reason, since humans are made in God's image. This line of thought sees God as the source of moral values, the architect of scientific laws governing the natural world, and the divine rationality that is the basis of logical and mathematical laws. As a result, scientific knowledge about the order of nature is not just human knowledge but knowledge of the mind behind nature.

It is an important part of Christian, Jewish and some Islamic thought to see human beings *as created in God's image*... This is the thought that God

is a knower, and indeed the supreme knower. God is omniscient, that is, such that he knows everything...Aquinas says the ability to know is the *chief* part of the image of God...God created both us and our world in such a way that there is a certain fit or match between the world and our cognitive faculties. The medievals had a phrase for it: *adequatio intellectus ad rem* (the adequation of the intellect to reality). The basic idea, here, is simply that there is a match between our cognitive or intellectual faculties and reality, thought of as including whatever exists, and a match that enables us to know something, indeed a great deal, about the world – and also about ourselves and God himself.¹¹⁵

Thus Plantinga thinks it is more likely that we are the product of God's conscious intention than a random natural process. The key insight Plantinga is building upon here is that being made in the image of God, which is a fundamental tenet of theism, includes divine ways of knowing. God intervened in the process of evolution in order to ensure beings like us would be its product. The fact that human beings do have reliable cognitive faculties demonstrates, for Plantinga, that God has managed the process. Just as complex cars or watches don't randomly put themselves together through strictly natural processes, complex cognitive faculties don't either. They need an intelligent designer to guide the process. Given the complexity of the eukaryotic cell or our eyes or the reliability of our cognitive faculties, and without science able to replicate these results, it appears they could not come about by chance alone. Their degree of complexity is due to a divine designer. Plantinga, Michael Behe, and William Paley believe that these processes are too complex to arise through unguided natural evolution.

The credibility of Plantinga's argument rests upon whether or not his design argument is sound. Plantinga cites several notable nontheists who all believe there is reason to doubt our cognitive faculties are capable of producing mostly true beliefs,

¹¹⁵ Ibid., 268-9.

among them Nietzsche, Nagel, Stroud, Patricia Churchland, and even Darwin himself.¹¹⁶ However, there are also many epistemologists and biologists who disagree with Plantinga's conclusion, among them Jerry Fodor, William Ramsey, Trenton Merricks and William Alston.¹¹⁷ Elliot Sober contends that Plantinga skewed his probability numbers in order to achieve a successful outcome in favor of theism.¹¹⁸ Daniel Dennett's response is two-fold. Yes, it is possible God interfered in the evolutionary process, but it's also possible Superman did as well, or that aliens salted the earth with human DNA millions of years ago. Just as Supermanism is perfectly consistent with evolutionary theory, so is intelligent design. Just as people find Supermanism ridiculous, so should people find Plantinga's intelligent design ridiculous. As to whether or not the P(R/N&E) is low, Dennett argues it is not. He states "Evolution by natural selection explains why hearts are highly reliable pumps, lungs are highly reliable blood oxygenators, eyes are highly reliable distal-information acquirers, and the beliefs that are provoked by those eyes (and other senses) are highly reliable truth trackers."¹¹⁹

In response to Dennett, some evolutionary psychologists might disagree. Their findings substantiate the position that our sense organs are geared not toward truth, but survival. Doug Kenrick and Vlas Griskevicius, in their book *The Rational Animal*, liken human cognitive processes to a smoke detector. A smoke detector gives off so many false alarms (from dust, cigarette smoke, candles, fire places, and cooking mishaps, rather than an actual fire) that one is tempted to disable it. Why do we not? Just in case

¹¹⁶ Ibid., 315-6. See the opening quote from Darwin at the beginning of this chapter as well (footnote 5).

¹¹⁷ James K. Beilby, ed., *Naturalism Defeated?* (Ithaca: Cornell University Press, 2002).

¹¹⁸ Elliot Sober and Brandon Fitelson, "Plantinga's Probability argument against evolutionary naturalism" *Pacific Philosophical Quarterly*, 79(2): 115-119.

¹¹⁹ Dennett and Plantinga, *Science and Religion*, 35.

one of those alarms is genuine. Similarly, they argue that our brains are wired like smoke detectors, “designed to make judgment calls despite having incomplete information...Natural selection creates systems, like the brain, that are biased to minimize the costlier error.”¹²⁰ Kenrick and Griskevicius provide example after example of behaviors based on false judgments, which nevertheless enhance survival value. For example, they cite flinching (as biased on a misjudgment of the threat or speed of an approaching object), wearing a seatbelt (if you’re lucky, you’ll never need it, yet it’s an inconvenience to put on every time you get in a car), sneezing (a disease avoidant response), overconfidence (less confident men will not take as many risks sexually), as well as men judging their own sexual attractiveness to women.¹²¹ All of these behaviors, they argue, involve misjudgments, but we are genetically hardwired to make them because they further our survival chances. If evolution is true, and many of our decisions are based on pragmatic calculations aimed at survival, not truth, then contrary to Dennett, our senses are not ‘highly reliable truth trackers,’ but rather ‘highly reliable survival machines.’ Invoking divine intervention in evolution may ensure our cognitive faculties have a higher degree of reliability than without.

7. Conclusion: Evolution defeats Neither Theism nor Naturalism

So who is right and who is wrong? Are the New Atheists right? Has evolution defeated theism? Or evolution defeated naturalism? The answer is neither. It is the Conflict model that is wrong. Evolution is only fatal to a literal interpretation of the first

¹²⁰ Doug Kenrick and Vladas Griskevicius, *The Rational Animal* (New York: Basic Books, 2013), 80.

¹²¹ *Ibid.*, 83-91.

three chapters of Genesis. But not all Christians interpret these chapters literally. Christian fundamentalism may be at odd with evolutionary theory, but not all Christians or theists are fundamentalists. It is very easy to simply interpret the meaning of Genesis as metaphorically saying that God created the universe and all the creatures in it through either guided or unguided evolution. It didn't have to happen in a six days or six billion years. Genesis simply cites God is the only efficient first cause of the universe. As for the garden story and the fall, this, too, could be interpreted metaphorically, as simply saying we are living in a garden made by God, and while here we are expected to enter into a loving relationship with God, others, and creation. To the extent that we do, we avoid eating the forbidden fruit of the knowledge of evil, of not living as God intended for us to live. It is possible to even do this without denying the historicity of Adam and Eve, as the *The Catechism of the Catholic Church* does. Section 390 of the *Catechism*, entitled 'How to read the account of the fall,' states "The account of the fall in *Genesis 3* uses figurative language, but affirms a primeval event, a deed that took place *at the beginning of the history of man*. Revelation gives us the certainty of faith that the whole of human history is marked by the original fault freely committed by our first parents."¹²²

This position allows for pre-Adamism (or the descent of humans from animals), affirms monogenism, as well as the dogma of original sin, by claiming that the story of the fall perhaps refers to an original couple who God entered into relationship with and whose disobedience still falls upon their descendants. Pope Pius XII, in the encyclical *Humani generis*, rejected polygenism as being incompatible with the doctrine of Original Sin. This interpretation is not wholly incompatible with evolution, unless of course evolution

¹²² The Holy See, *Catechism of the Catholic Church* (Mahwah, NJ: Paulist Press, 1994), 98.

is read in a strictly natural way, and it allows for belief in evolution without undermining the doctrine of Original Sin and all the other various doctrines that are dependent upon it. However, it needs further development, which is beyond the scope of this project.

So does that mean Plantinga is right, that the conflict is really between evolution and naturalism? Would our cognitive faculties be unreliable if left to unguided evolution? If natural selection has built our bodies for survival, to hunt down rabbits, and not truth, and our senses occasionally deceive us, does this mean that we cannot trust our beliefs to be true? Not necessarily. Adopting a metaphysical worldview involves making a rational bet about the way the world is based upon the evidence of our senses. The majority of the time those bets pay off. Thus it appears Dennett is correct in responding to Plantinga that our senses are highly reliable truth trackers. They may not provide Cartesian certainty, but statistical probability is probability enough to persuade most people to trust their senses.

But is the reliability of our cognitive processes really enough evidence to determine whether or not God guided the process of forming them? It doesn't appear the argument is conclusive enough to give a firm answer one way or the other. Plantinga's argument appears to be inconclusive. As Sober notes, the probability one assigns to his argument might rest upon subjective worldviews, whether or not one is a naturalist or a theist. Hence the argument could go either way. Nevertheless, even if Plantinga's EAAN fails to defeat naturalism, his argument is not entirely unsuccessful. He has demonstrated that evolution does not entail naturalism. Rather metaphysical naturalism is an unwarranted add-on to evolution, an overlay tacked on by people like Dennett. It is not science and/or evolution that conflicts with theism, but naturalism and theism that

conflict, and science is only seen to conflict with theism when it is performed with the overlay of naturalism. It is possible to do good science without the overlay and believe that one is studying God's creation, thereby gaining insight into God's mind as the architect behind Nature. Plantinga shows that evolution is not equivalent to metaphysical naturalism. It is the New Atheists who place the overlay of metaphysical naturalism on evolution, but in doing so they create a straw man. But whether humans could have arisen through strictly naturalistic processes to have reliable cognitive faculties remains unknown. Humans weren't around to witness the millions of years in which the process occurred. The problem is we are betting on worldviews with incomplete information, and as a result no conclusion appears justified. Was the process of evolution strictly naturalistic or was it guided? The only correct answer is, Who knows? The only justified logical conclusion one can draw from evolution is that one cannot say for sure whether it occurred through strictly natural and unguided processes, or was guided by a theistic god. No theologians or scientists have been around to witness the billions of years in which life evolved to observe the process. Therefore the only correct metaphysical inference one can draw on this issue is ζ or indeterminate. This is the conclusion that the last chapter will seek to demonstrate.

CHAPTER SEVEN –
JUSTIFIED TRUE BELIEF, SKEPTICISM, AND THE LIMITS OF KNOWLEDGE

It is always advisable to perceive clearly our ignorance.¹ – Darwin

The mystery of the beginning of all things is insoluble by us; and I for one must be content to remain an agnostic.² – Darwin

I feel most deeply that the whole subject is too profound for the human intellect. A dog might as well speculate on the mind of Newton.³ – Darwin

I am aware that if we admit a first cause, the mind still craves to know whence it came and how it arose. Nor can I overlook the difficulty from the immense amount of suffering through the world....The safest conclusion to me seems that the whole subject is beyond the scope of man's intellect.⁴ – Darwin

Whether a man deserves to be called a theist depends on the definition of the term: which is much too large a subject for a note. In my most extreme fluctuations I have never been an atheist in the sense of denying the existence of a God. I think that generally (& more and more so as I grow older) but not always, that an agnostic would be the most correct description of my state of mind.⁵ – Darwin

I am actually wiser than this person; likely enough neither of us knows anything of importance, but he thinks he knows something when he doesn't, whereas just as I don't know anything, so I don't think I do either."⁶ – Socrates

It is precisely facts that do not exist, only interpretations.⁷ – Nietzsche

We must regard all laws and theories as guesses.⁸ – Karl Popper

Science is much closer to myth than a scientific philosophy is prepared to admit. It is one of the many forms of thought that have been developed by man, and not necessarily the best. It is conspicuous, noisy, and impudent, but it is inherently superior only for those who have already decided in favour of a certain ideology, or who have accepted it without ever having examined its advantages and its limits.⁹ – Paul Feyerabend

¹ Charles Darwin, *The Expression of Emotion in Man and Animals* (New York: Appleton & Co., 1915), 67.

² Charles Darwin, *The Life and Letters of Charles Darwin* (New York: Appleton & Co., 1886), Vol I, 282.

³ Charles Darwin, in a letter to Asa Gray, May 22, 1860.

⁴ Charles Darwin, in a letter to Nicolass D. Doedes, April 2, 1873.

⁵ Charles Darwin, letter to John Fordyce, May 7, 1879.

⁶ Plato, *Apology*, trans. by Christopher Rowe (New York: Penguin Books, 2010), 37 (21d).

⁷ Friedrich Nietzsche, *The Portable Nietzsche*, ed. by Walter Kaufmann (New York: Penguin Books, 1954), 458.

⁸ Karl Popper, *Objective Knowledge* (Oxford: Oxford University Press, 1972), 9.

⁹ Paul Feyerabend, *Against Method* (London: New Left Books, 1975), 295.

1. Knowledge as Justified True Belief

The debates about whether science conflicts with religion and whether evolution disproves the existence of God are really epistemological debates. Theists claim to ‘know’ that God exists, and that the existence of the universe and complex beings such as us are dependent upon God. The New Atheists claim to ‘know’ that God does not exist and that humans evolved through strictly natural processes. But the New Atheism is really not that new. Roy Abraham Varghese states: “It would be fair to say the ‘new atheism’ is nothing less than a regression to the logical positivist philosophy that was renounced by even its most ardent proponents.”¹⁰ If this is true, that the New Atheists are merely warmed-over positivists, then it is necessary to revisit what logical positivism was, and whether its resurgence by contemporary atheists has overcome the flaws that led to its earlier abandonment. It will also require examining how its demand that empirical verification justify knowledge claims is related to the New Atheists’ evidentialism.

What is ‘new’ to the New Atheists that is explicitly absent in the claims of the positivists, is their claim that evolutionary theory provides support for metaphysical naturalism and is fatal to theism. Alvin Plantinga and Michael Behe argue the opposite. As a result, this final chapter will examine each camp’s claims to knowledge in order to determine if either side has sufficient epistemic justification for their claims. Traditional theories of knowledge state in order to achieve knowledge three individually necessary

¹⁰ Roy Abraham Varghese, in Preface to Anthony Flew, *There Is A God, How the world’s most notorious atheist changed his mind* (New York: HarperOne, 2007).

and jointly sufficient conditions must be satisfied, these being justification, truth, and belief. These conditions trace back to Plato's *Theaetetus*, in which knowledge is defined as "true belief with the addition of an account (*logos*)."¹¹ Edmund Gettier cites Roderick Chisholm's traditional account of knowledge:

S knows that P, IFF (i) S accepts P
 (ii) S has adequate evidence for P, and
 (iii) P is true.¹²

One must believe something (for example, that the moon is made of three kinds of igneous rock), one must be able to provide evidence for it (for example, that there are spectrograph results of the moon rock samples), and it must be true (i.e., it is a scientific fact). Unless one can provide epistemic justification for why one believes something, one cannot claim to say they know it, nor can they claim to know something if it is in fact false. Although ultimately Plato ends up rejecting this definition in the *Theaetetus* (true belief with an account), its failure seems a designed move by Plato to show that there can be no knowledge unless there is knowledge of the Forms. In the *Meno*, Socrates states that the difference between opinion and knowledge is that the latter is "tied down" to the Forms through the process of recollection.¹³ Nevertheless, these three conditions served as the traditional account of knowledge until Gettier demonstrated that they, while necessary, are not sufficient to obtain knowledge, and that a fourth condition was needed. While acknowledging the existence of Gettier counterexamples that satisfy these

¹¹ Plato, "Theaetetus," in *The Collected Dialogues of Plato*, ed. by Edith Hamilton and Huntington Cairns (Princeton: Princeton University Press, 1989), 908 (or 201:d). Plato, however, ultimately rejects this definition of knowledge, as will be discussed later.

¹² Edmund L. Gettier, "Is Justified True Belief Knowledge?" *Analysis*, Vol. 23, No. 6. (June, 1963), 121.

¹³ Plato, "Meno," in *The Collected Dialogues of Plato*, ed. by Edith Hamilton and Huntington Cairns (Princeton: Princeton University Press, 1989), 381-2, (or 98a).

conditions yet fail to constitute knowledge, let us adopt the traditional account of knowledge as satisfactory for our purposes.

Pascal, in his famous wager, argues that every individual faces a choice, a choice in response to what he considers the ultimate question, Does God exist? He lays out our options for us and considers the potential outcome for each choice:

Subjective Belief	Objective Truth
1. Belief in God	God exists
2. Belief in God	God does not exist
3. Disbelief in God	God does not exist
4. Disbelief in God	God exists

Now, which do you choose? Pascal argues that both our present life and possible future life may greatly be affected by one's choice. If one chooses to believe in God and God exists, eternal bliss. If one chooses to believe in God and God does not exist, then you have sacrificed some earthly goods for a non-existent salvation. If one chooses not to believe in God and God does not exist, then try and enjoy the short stay you have while alive on planet earth. But if one does not believe in God and God exists, well, your future rests with the sympathy of God. What if you refuse to make any of the choices above, to not wager at all? "Yes, but you must wager. It is not optional. Which then will you choose?"¹⁴

How do we go about deciding how to answer the question? Pascal notes that it could be the most important decision we ever make, as it could have eternal repercussions. Well, if one has to make a choice, then one will want evidence. But Pascal argues that evidence will not settle the issue. He states: "Reason cannot decide

¹⁴ Blaise Pascal, *Pensees, and Other Writings*, trans. by Honor Levi (Oxford: Oxford University Press, 1995), 154.

anything....Reason cannot make you choose one way or the other....If there is a God, he is infinitely beyond our comprehension....Who will then blame the Christians for being unable to provide a rational basis for their belief?"¹⁵ In other words, to Pascal one might not be able to justify one's belief with evidence.

But does Pascal really believe that there is no evidence, that faith lacks any justification? No. His argument is that there is no evidence, but there is reason nonetheless to believe. The wager itself is a rational argument, a pragmatic one that purports to demonstrate that there are grounds for choosing belief over disbelief. A gambler gauges his actions against the odds, to determine whether they are in his favor. Pascal's argument could thus be said to be a rational one. It is an argument that one should, from the point of view of self-interest, believe in God. In addition, the majority of the *Pensees* discusses Pascal's personal reasons for his own belief, which are based primarily on revelation. What criteria does he use to accept revelation as being true? He states: "It is in the heart that feels God, not reason; that is what faith is. God is felt by the heart, not by reason. The heart has its reasons which reason itself does not know."¹⁶ By 'heart,' Pascal means intuition. It could also be argued that the decision to believe in the Christian revelation cannot be based on rational evidence. However, if the infinitely good God were to appear on earth, one could intuitively perceive that he would behave in a manner that is consistent with the person of Jesus. The heart knows this, if reason does not, that Jesus personifies divine goodness. But when he says, "the heart has its reasons," he is making epistemic attempts to justify belief. Finally, Pascal bases his faith on a religious experience he claims to have had which confirmed his faith in the God of

¹⁵ Ibid., 153-4.

¹⁶ Ibid., 157-8.

revelation over the type of God established through reason and natural philosophy. After this experience, he wrote: “From about half past ten in the evening until half past midnight. Fire. God of Abraham, God of Isaac, God of Jacob, not of philosophers and scholars. Absolute certainty – beyond reason.”¹⁷

One of the problems with Pascal’s wager is that it may be impossible to make yourself believe something on the basis of no rational evidence other than prudential ones. Pascal’s recommendation for those who are skeptical is to “Follow the way by which (believers) began; by acting as if they believe, taking the holy water, having masses said, etc....What harm will befall you? You will be faithful, honest, humble, grateful, generous, a sincere friend, truthful.”¹⁸ Pascal thinks that faith is contagious, that you catch it the same way that you catch a cold, by associating with those who have already come down with it. The problem is that most people cannot force themselves to believe something unless there is some evidence for it. While Pascal would disagree that all evidence must be empirical, the only kind of justification that counts for the New Atheists is scientific evidence that is both rational and empirical. While Pascal may be able to cite the reasons of the heart, intuition, revelation, and personal religious experience as evidence to support his beliefs, it is central to the New Atheists that this type of evidence is not scientific and hence is no evidence at all. Only evidence that is based upon facts which can be empirically verified, that produce hypotheses which can make predictions, which can then be tested experimentally, constitute acceptable

¹⁷ David Simpson, *Internet Encyclopedia of Philosophy*, s.v. ‘Pascal.’ <http://www.iep.utm.edu/pascal-b/>

¹⁸ Blaise Pascal, “Faith is a Logical Bet,” in *Philosophy, The Quest for Truth*, ed. by Louis P. Pojman and Lewis Vaughn (New York: Oxford University Press, 2014), 142.

evidence. Pascal's reasons do not constitute scientific evidence, and hence should be dismissed.

Pascal's four logical possibilities concerning belief in God align nicely with the naturalist and theist positions. His belief in God aligns with theism, and the naturalist rejects this belief. One of the central claims of the New Atheists is that religion is without any justification, that it is held on faith alone, independent of any evidence. They all cite lack of evidence for theistic belief as contributing to the irrationality of faith. Richard Dawkins cites Bertrand Russell's response, who when asked what he would do when he died and was held accountable before God for his disbelief, replied, "Not enough evidence, God, not enough evidence."¹⁹ In addition, they believe there is good evidence against God's existence, scientific evidence, most notably, evolutionary theory. Dawkins says science provides the closest epistemic claims to certainty we can get. To support this claim he argues science works, as evidenced by the fact that "planes fly, cars drive, computers work." The New Atheists claim the medieval tradition which Pascal is espousing was overthrown by the scientific revolution. It was revolutionary in that it overthrew the medieval worldview, which was faith centered. They believe the scientific revolution not only provided a better method for achieving knowledge, but supported a new metaphysics, one that replaced the old theistic worldview, and replaced it with a scientific worldview with a metaphysics of naturalism.

2. Enlightenment Foundationalism and Evidentialism

¹⁹ Dawkins, *The God Delusion*, 130-1.

The demand that we only believe something if and only if it is arrived at through a rational process reflects the influence of the Enlightenment, but has its basis in the foundationalism of Plato and Aristotle.²⁰ Classical Foundationalism asserts that all beliefs must ultimately be anchored in basic or foundational beliefs which are not in need of further justification. These core beliefs thereby avoid the danger of an infinite regress. In modern foundationalism, foundational beliefs serve the same role as axioms do in geometry and are either self-evident (for example, “a triangle has three sides,” or Descartes’ *cogito*), or incorrigible (“I have a headache”). For the empiricists, the testimony of the senses can also provide foundational beliefs, although Descartes rejects sense-based beliefs as fallible. All justification must be able to be traced back to basic beliefs and rationally derive from them. If it can be shown that one’s supposed basic beliefs are not basic, or that the superstructure built upon them is based upon weak or invalid reasoning, then one’s beliefs may be characterized as not fully justified.

The demand that we not believe anything without proper evidence is called Evidentialism. While this position is commonly associated with naturalists like Bertrand Russell, Michael Scriven, and Anthony Flew, it was also held by John Locke. W.K. Clifford in his essay, “The Ethics of Belief,” nicely captures the epistemological demands evidentialism makes. Clifford tells the story of a ship-owner who is about to send an old ship to sea full of emigrants, but has doubts over its seaworthiness. So does he go and inspect the ship in order to investigate the seaworthiness of the ship? No, he reassures himself that she has gone safely to sea many times before, so he does nothing. The ship sinks and he collects his insurance money. To Clifford the ship-owner is guilty of

²⁰ Nicholas Wolterstorff, “Introduction,” in *Faith and Rationality, Reason and Belief in God*, ed. by Alvin Plantinga and Nicholas Wolterstorff (Notre Dame: University of Notre Dame Press, 1986), 6.

causing the deaths of the passengers because he let it sail without proper evidence that it was seaworthy. He thus concludes: “It is wrong always, everywhere, and for anyone, to believe anything upon insufficient evidence.”²¹

Evidence in this case is considered synonymous with empirical evidence, and only conclusions that are drawn on the basis of an empirical investigation count as justification. Clifford argues that what we believe has ethical consequences, that people’s lives are at stake on the basis of our beliefs, so how they are formed is a public matter. We have a duty to form beliefs on the basis of the evidence. The insinuation is that any belief taken on faith, rather than reason, is irrational and morally unjustified. Clifford is clearly trying to draw a parallel here between the ship-owner and religion, as he also tells a story about a religious sect on an island that holds unfounded beliefs and persecutes others on the basis of these beliefs. Similarly, as a theory of epistemic justification, the New Atheists’ version of evidentialism sees only methodological naturalism and scientific evidence as providing a sufficient basis for one’s beliefs. However, evidentialism does not necessarily entail methodological naturalism or that all evidence is empirical. It just insists on evidence.

2.1 Fideism

The New Atheists’ evidentialism argues that theism is irrational, because there is no good evidence for the existence of God. This position, however, is itself not sufficiently warranted. Fideists believe the evidentialist challenge cannot be met, that

²¹ W.K. Clifford, “The Ethics of Belief,” in *Philosophy, The Quest for Truth*, ed. by Louis P. Pojman and Lewis Vaughn (New York: Oxford University Press, 2014), 147.

Faith is basic, unchallengeable, and can't be made rational. They don't see this, however, as an epistemological vice. To give reasons is harmful to the faith, as Barth would argue, since divine revelation is not subject to human reason. To give reasons is to attempt to make the Word of God subject to human reason and the word of man. God's self-revelation and inherently incomprehensible incarnation as man always trumps the attempts of natural theology to construct ladders into heaven. The Anglican theologian John Macquarrie states: "Barthian fideism starts from the givenness of a particular revelation and refuses to inquire into the grounds for accepting that revelation."²² While this might appear to make Fideism irrational, fideists would argue that faith is a higher category than reason. As the fideist Montaigne stated: "Christians do themselves wrong by wishing to support their belief with human reasons: belief is grasped by faith and by private inspiration from God's grace."²³ Fideism turns the tables on Evidentialism by seeing it as a sign of a lack of faith, for it is asking for reasons and even knowledge to sustain belief, which is something faith cannot provide and should not attempt to provide. Nor can the divine be brought down to the level of human understanding, as an infinite God cannot be comprehended by a finite being. But this is no reason to reject faith. Fideism adheres to the Independence model. Revelation is its own *sui generis* source of knowledge and has its own pre-eminent authority. While reason may govern secular beliefs, religious beliefs are immune to its epistemic demands.

Kierkegaard's particular brand of fideism rejects the whole tradition of natural theology, and argues, in agreement with Kant, that God's existence cannot be established, since it is a concept that lacks a sensible intuition. The whole Scholastic tradition of faith

²² John Macquarrie, *In Search of Deity* (London: Xpress Reprints, 1993), 4, 13.

²³ Paul Richard Blum, *Philosophy of Religion in the Renaissance* (Burlington, VT: Ashgate, 2010), 18.

seeking understanding presupposes a harmony between faith and reason, one which Kierkegaard rejects. In the *Philosophical Fragments*, he argues that the decision to become a Christian cannot be made through reason, as faith transcends understanding. Kierkegaard argues that the belief that an infinite sinless God took on finite form and suffered a sinner's death, is a step beyond the Socratic, beyond the Hegelian, beyond reason. In other words, rational justification is not possible here. Yet, like Pascal, is it possible to believe something without fully understanding it, or to believe something that seems absurd? Kierkegaard argues it is, that other mechanisms than reason, such as despair, guilt, anxiety, dread, and sin can function as the motor driving one to make the 'leap of faith' and become religious. What Kierkegaard calls the 'antecedent state' prior to faith is sin and ignorance, in that the seeker is ignorant of the Truth and does not even know he is ignorant.²⁴ Sin takes on an epistemological function in Kierkegaard, in that it blocks us from knowing the truth. The sinner doesn't even know that he or she doesn't know the truth.²⁵ Sin, therefore, has something to do with the ability to know the truth. If a person is to acquire the Truth, and the Truth is not within him, and he doesn't even know he is without it, and can't acquire it themselves due to their limited sinful nature, then a Teacher must provide it. The Teacher in this case is God, who is the only one capable of providing the Truth. Though humans can come to know and love God, they cannot understand God.²⁶

²⁴ Compare to the Meno Paradox.

²⁵ The epigraph to Kierkegaard's *Philosophical Fragments* states "The question is asked in ignorance, by one who does not even know what can have led him to ask it."

²⁶ Soren Kierkegaard, *Philosophical Fragments*, trans. by David Swenson and Howard V. Hong (Princeton: Princeton University Press, 1967), 48-9.

Kierkegaard tells the parable of the humble maiden as a way to convince the reader of the truth of Christianity.²⁷ Like the king in the parable, God chose the method of self-disclosure by incarnating as a humble servant because it is the nature of love to serve others, and God is love. Though Kierkegaard claims to be distancing himself from natural theology, the parable of the humble maiden can be seen as an argument by analogy, one that is designed to demonstrate why God might have chosen the method of revelation that Christians believe God did.

In the *Concluding Unscientific Postscript*, Kierkegaard states that truth is subjectivity, or “an objective uncertainty, held fast through appropriation with the most passionate inwardness.”²⁸ What has truth to do with passion? Kierkegaard argues that in the Parable of the Ten Virgins, the five foolish bridesmaids “lost the infinite passion of expectation,” and forgot to bring enough oil to the wedding feast, and as a result missed it. Truth is an objective uncertainty for Kierkegaard because he sides with Kant’s critique of rational arguments for God’s existence, and rejects the ability of reason to establish knowledge claims for or against God’s existence. One cannot know whether God exists with the type of certainty that Locke or Aquinas claim. God can never be found objectively in nature. God is not a thing to be found in the world. In seeking God through nature one finds design and wisdom, but one also finds chaos and calamity. Since truth cannot be found objectively, scientifically, truth must be found inwardly in subjectivity, and is measured by the degree of passion we hold to it.

²⁷ Ibid., 32-8.

²⁸ Soren Kierkegaard, *Concluding Unscientific Postscript*, trans. by David Swenson and Walter Lowrie (Princeton: Princeton University Press, 1968), 117.

2.2 Theist Evidentialism

In contrast to fideism, Theist evidentialism holds the evidentialist challenge can and should be met. This is the tradition of natural theology, of using reason, reflection, and sense experience to attempt to achieve knowledge of God's existence. Theist evidentialism is compatible with open science, i.e., science that allows for supernatural explanations, not just natural ones. Clifford's claim that there is no evidence to support religion either overlooks or rejects all the arguments provided for theism in Chapter Four. Natural theology could be described as an attempt to satisfy Clifford's demand that the ship-owner inspect his ship. Its conclusions could be said to constitute the results of the inspection of the ship. The analogy here is that Clifford's ship is a human artifact, whereas the universe appears to be a divine artifact.

The problem with this, as Hume (Philo) states in *Dialogues Concerning Natural Religion*, is that we have sense experience of humans designing and creating artifacts. We have seen ships get built and know how to determine if they are seaworthy or not. But we have never witnessed a universe being created. The creation of the universe is a singular event. So the inference to a designer based upon the order found in a ship, cannot be similarly made when the universe is considered.

But consider this. If one came across a cyborg, or an aircraft with a level of design far beyond the ability of humans to create (for example, an aircraft with antigravity propulsion), perhaps the best explanation for these artifacts is that they are extraterrestrial creations. Similarly, if the universe itself resembles an artifact, one that it is intricately designed (as the Fine tuning argument has it), perhaps the best explanation

for its existence is a supremely intelligent artificer. Michael Behe goes a step further and sees the biological complexity of living organisms as better explained by considering them artifacts rather than the results of purely natural processes. John Locke's position agrees with Behe's. He accepted the evidentialist challenge and argued that it is perfectly rational to infer that God exists as the designer and source of the universe. He even claims that this is known with *certainty*.²⁹

Design arguments are part of theist science, or what one might call 'open science.' Open science does not subscribe to methodological naturalism, but allows for the best explanation possible, even if it is a supernatural one. However, the New Atheists form of evidentialism only allows for methodological naturalism, which rules out supernatural explanations. But why rule out, *a priori*, other methods for obtaining knowledge? Not only might there be good scientific evidence for theism, but there might be alternative methods of justifying beliefs. If we obey the dictum that methodological naturalism be our only procedure for obtaining knowledge, intractable anomalies might be impossible to explain. The 'God of the gaps' argument is still an argument, one that might well provide evidence for theism. If there are mysteries that science cannot explain, which theism can, then naturalism as a worldview might well be concluded to be an incomplete and insufficient explanation of reality as a whole.

Nevertheless, to the degree that Evidentialism makes reason normative, theistic evidentialism agrees to comply with that demand and tries to live up to it by demonstrating that faith and reason are compatible and that reason can be employed to support faith. Fideism on the other hand, rejects reason as an absolute demand upon

²⁹ John Locke, *An Essay Concerning Human Understanding* (Oxford: Clarendon Press, 1969), 310 (Bk IV, Ch. 10).

belief, and instead argues that there are other methods than reason for arriving at knowledge of reality. However, it should be noted that the demand for evidence is not a demand for proof or certainty. If one can simply provide reasons why one believes, or evidence in favor of theism, then one has satisfied the evidentialist demand. As a result, the claim made by Clifford, Russell, Dawkins, and the New Atheists that theism is irrational and without any justification whatsoever, is unfounded.

2.3 Rationalism

The Rationalist approach in favor of theism is usually associated with Descartes via his Ontological argument, which was considered in Chapter 4, and so will not be discussed here. Descartes tries to rebut Skeptical arguments by constructing an entire epistemology independently of revelation, based upon the sole fact that he exists as a thinking subject. Thus the foundation of his arguments for the existence of God rest upon the one thing he is certain of, his subjectivity as a thinker. In the Second Meditation he argues that the one thing he knows for sure, even if he is dreaming or being deceived by an evil demon, is that he exists as a thinking subject. While a naturalist would argue that this entails having a body, based upon mind/brain dependence, Descartes reasons that knowledge of his consciousness only entails that he as a thinking thing exists. The reason for this is that he could be deceived into thinking he has a body, when in fact he does not. Or in the updated version of his argument, he could just be a brain in a vat being fed sensory stimuli that trick him into thinking he has a body which is experiencing a world, when in fact he does not. Descartes reasons that thought is radically different from

matter, enough to warrant their being separate. A body has the characteristics of having “a determinable shape and a definable location and can occupy a space in such a way as to exclude any other body; it can be perceived by touch, sight, hearing, taste or smell, and can be moved in various ways, not by itself but by whatever else comes into contact with it.”³⁰ Consciousness, on the other hand, has no shape, can’t be located in space, nor can it be perceived, and appears to have the power of self-movement or the ability to move the body. Therefore he concludes it must be a different type of substance than the physical body.

Descartes’ argument is not really new, as it is just a form of the Argument from Introspection, and builds upon a basic intuition that several of the world’s religions similarly build upon, the notion of a soul. In the Judeo-Christian tradition, humans are made in the image of God. When we think of God, we identify God with that part of us which is spiritual, not physical. God transcends creation, which is physical, and is said to be spiritual. As a result, God is identified with our mental qualities, and not our physical ones. Thus by turning inward, one comes to know God through oneself, that atman is Brahman. Hindus take this insight a step further than either Descartes or Christians, and argue that our soul is not created in God’s likeness, but is a ‘drop’ of God. Patanjali’s form of raha yoga (the ‘king’ of yogas) seeks to turn our attention inward in order to reach this realization, that our conscious mind is itself divine.³¹

2.4 Plantinga’s alternative – antievidentialism:

³⁰ Rene Descartes, *Meditations of First Philosophy*, trans. and ed. by John Cottingham (Cambridge: Cambridge University Press, 2010), 17.

³¹ Fred W. Clothey, *Religion in India* (New York: Routledge, 2006), 68.

Are there methods of justification other than reason? Foundationalism assumes that the only criteria by which a belief can be considered foundational is if it satisfies internal criteria such as self-evidence or incorrigibility. Alvin Plantinga argues that properly basic beliefs can be arrived at through other criteria, previously neglected, such as Calvin's *sensus divinitatis*, or sense of deity. Calvin considers this a "natural instinct" God "has endued all men with...of which he constantly renews and occasionally enlarges" so that no human can pretend ignorance of God.³² Although all humans have it, it can be obscured through sin.³³ Plantinga considers this sense to make belief in God a basic belief, similar to other beliefs we consider basic, but that also fail to meet the traditional criteria of foundationalism. Such beliefs concern the existence of other minds, memories of the past, and moral propositions.³⁴

Plantinga's position differs from Fideism because knowledge of God is not taken on faith alone, but is provided through the *sensus divinitatis*. But neither does this make Plantinga an evidentialist. Evidentialism makes theism subordinate to reason. To Plantinga, following Calvin, knowledge of God is not a belief achieved on the basis of rational inference. In theistic evidentialism, knowledge of God must be inferred from beliefs that are basic, what Locke calls 'demonstration.'³⁵ For Plantinga, knowledge of God is posited as a basic belief, and is not part of the superstructure that is inferred; hence, theism requires no rational justification. As a result, Plantinga avoids the

³² John Calvin, *The Institutes of the Christian Religion*, ed. and trans. by Henry Beveridge (Seattle, WA: Pacific Publishing Studio, 2011), 7.

³³ Alvin Plantinga, *Warranted Christian Belief* (New York: Oxford University Press, 2000), 167-184.

³⁴ Alvin Plantinga, 'Reason and Belief in God,' in *Faith and Rationality*, ed. by Alvin Plantinga and Nicholas Wolterstorff (Notre Dame, IN: University of Notre Dame Press, 1986), 89.

³⁵ *Ibid.*, 48.

evidentialist demand for justification because belief in God is not inferred, but is a basic belief similar to Descartes' "I am." Basic beliefs don't require justification. One just sees them as being true in the same way that one see *modus ponens* as being true.³⁶

Theism as a basic foundational belief is achieved in a way similar to foundational sensory beliefs, but is different in not being derived via the five traditional senses. The skeptical reply to this is that there is no evidence for the existence of a universal sixth sense, a *sensus divinitatis*. As a result, 'God exists' is not on a par with the basic belief that 'something is red.' It might be possible that one's awareness of God is derived from evidence using reason and sense experience, i.e., by means of natural theology. But this means God's existence is inferred using the traditional materials (self-evident, the senses), and hence is part of the superstructure that needs justification. In response, Plantinga raises the question whether it is possible to accept the evidentialist's demand that one give up those beliefs that are based on insufficient evidence.³⁷ Often we are not in a position to choose our beliefs. Plantinga sees the *sensus divinitatis* as a 'sense' that allows us to sense God in the same way that one may sense a tree. So when we are confronted by God, all we can do is acknowledge there is God, in the same way that we acknowledge there is a tree. No further justification is needed. Both are basic beliefs. However, this would only apply to those who have actually been confronted by God, i.e., the elect, such as Paul on the road to Damascus.

However, as it stands, Plantinga's position is still problematic. The Reformed tradition begins with revelation and truths revealed by Scripture. Calvin states: "For

³⁶ Ibid., 36.

³⁷ Ibid., 34.

anyone to arrive at God the Creator he needs Scripture as his Guide and Teacher.”³⁸ But if one has a direct line to God via the *sensus divinitatis*, then this seems to provide the primary means of achieving knowledge of God, and makes Scripture, if not superfluous, secondary. Calvin’s *sensus divinitatis*, as interpreted by Plantinga, makes more sense if it is seen either as an awareness of divinity achieved by all of one’s cognitive faculties, or as the result of a gift bestowed by God individually upon the elect (God opening the eyes of the spiritually blind). But to claim it is a universal, natural faculty innate to all but obscured by sin, remains a subject of debate. It is not universal to the extent that belief in other minds is universal. The *sensus divinitatis* seems more likely a faculty that Calvin appealed to as a source of authority independent of Rome. This is not to deny that some people might have a basic knowledge of God. What seems uncertain here is that there is some kind of universal faculty or ‘natural instinct’ which allows all access to God.

3. William James’ response to evidentialism:

William James responds to Clifford’s Evidentialism in his essay, “The Will to Believe,” seeing it as a Scrooge-like epistemology. He argues that Clifford asks for too much epistemic justification, and sets the bar too high, requiring more evidence than is often available when we act. He argues in everyday life the evidence is often unclear, so we must live by faith or cease to act. Often the outcomes of a surgical operation, or simply a car trip, or even a sea voyage, cannot be known with absolute certainty. If one were to abide by Clifford’s form of Evidentialism, one would suffer from paralysis of the

³⁸ T.H.L Parker, *Calvin: An Introduction to His Thought* (London: Geoffrey Chapman, 1995), 21.

will. As a result, James rejects evidentialism, arguing instead that, “Our passionate nature not only lawfully may, but must, decide an option between propositions, whenever it is a genuine option that cannot by its nature be decided on intellectual grounds.”³⁹

James argues that “our non-intellectual nature does influence our convictions.” As an example of this, James cites friendship. You wonder about someone, “Do you like me or not?” James response is, “Whether you do or not depends on whether I meet you halfway.” If I am willing to believe that you do like me I will act towards you as if you do. “But if I stand aloof, waiting for objective evidence,” chances are our friendship will never occur as a result of a failure to act. As a result, James famously states that “Faith in a fact can help create that fact.”⁴⁰ If I believe it is impossible to win the lottery, I’ll never buy a ticket. Only if I believe that it is possible I could win it, will I ever buy a ticket, thereby allowing for that possibility. While these are examples of action based on faith, James, although not an orthodox believer, is still willing to defend religious faith as justified on pragmatic and non-intellectual grounds. He asks, “What difference does it make if I am religious or not?” A big difference. If we are religious, “The universe is no longer a mere *It* to us, but a *Thou*.”⁴¹ While the intellect cannot resolve this issue by itself, if we fail to act as if religion were true, or treat it as a dead hypothesis, chances are we will never come to have faith.

Antony Flew is also an evidentialist. Flew tells a story similar to Clifford’s story concerning a ship owner in order to support his position. In the article, “Debate on the

³⁹ William James, “The Will to Believe,” in *Pragmatism and Other Writings*, 205.

⁴⁰ *Ibid.*, 213-4.

⁴¹ *Ibid.* 216.

Rationality of Religious Belief,” Flew tells the tale of the Invisible Gardener.⁴² He asks us to imagine there are two explorers in a jungle who find a clearing that looks like a garden. The first explorer believes that there is a gardener who has turned the jungle into a garden. The second explorer is skeptical, and devises tests in order to detect the presence of a gardener. The tests detect nothing. Nevertheless, the first explorer persists in his belief that there’s an invisible gardener. The second explorer argues that if no test would ever prove to you there is no gardener, the belief is unfalsifiable and therefore meaningless. The obvious conclusion that Flew is trying to make is that “God exists” has no factual meaning because it is not falsifiable.

Is Flew’s conclusion justified? No. The fact remains there is evidence for the existence of the gardener. The garden displays evidence of design. Gardens don’t appear out of jungles. The naturalist has no explanation for the garden, yet the theist does. Gardens are a human artifact, just like Paley’s watch. If you find a watch on the beach or in the heath, its intricate order is evidence of design. Although you never witnessed the watchmaker make it, it is rational to infer that there is a watchmaker who made it. The obvious question now is, Does the universe resemble an artifact? The universe does display order; to that extent it resembles an artifact, which means it is rational to posit an artificer (or gardener) to account for its existence. The fine-tuning of the constants in physics, the fact that there are orderly laws of nature, the fact that there is simply a universe, all provide grounds for belief in an orderer, a gardener.⁴³

⁴² Antony Flew, R.M. Hare, and Basil Mitchell, “A Debate on the Rationality of Religious Belief,” in *Philosophy, The Quest for Truth*, ed. by Louis P. Pojman and Lewis Vaughn (New York: Oxford University Press, 2014), 157.

⁴³ As discussed in Ch. 4, the Fine tuning Argument argues the following constants were fine-tuned:

1. If the force of the Big Bang had differed by one in 10^{60} th, the universe would have collapsed or expanded too fast.
2. If the strong nuclear force had been stronger or weaker by 5%, life could not exist.

Daniel Dennett states: “The Argument from Design depends upon an inductive inference: where there’s smoke there’s fire; and where there’s design, there’s mind.”⁴⁴ This is correct. There is a very high probability that where there is smoke, there is fire, and if one finds a watch on a beach, that it is a human artifact. Nevertheless, Dennett thinks “Darwin rendered obsolete” a ‘Mind-first’ view of the universe based upon the argument from design by showing how complex organisms can be accounted for by strictly natural processes.⁴⁵ Thus Dennett concludes that Darwin provides evidence to invert metaphysics, from a Mind-first to a Nature-first ontology. Minds arose from nature, following strictly natural processes, not the other way around. However, while Darwinism may be fatal to biological complexity by allowing for natural processes to give rise to life (Michael Behe would disagree), Darwinism is not necessarily fatal to the argument from design. The complexity of the universe similarly appears to be ordered like a watch, suggesting it too is an artifact that reflects the design of its designer. The argument to design is also an *a posteriori* argument, which means that it is compatible with scientific methodology. It is also an abductive argument in that it argues theism offers a better explanation for the order of the universe than naturalism, although this is reasoning from effect to cause.

4. Does Science provide the Justification Evidentialism demands?

3. If the force of gravity were stronger or weaker by one part in 10^{40} th life could not exist.

4. If a neutron was not 1.001 times the mass of a proton, life could not exist.

5. If the electromagnetic force differed slightly, life could not exist.

⁴⁴ Dennett, *Darwin's Dangerous Idea*, 30.

⁴⁵ *Ibid.*, 25.

The New Atheists argue that theism does not have any evidence supporting it, and hence is irrational. Let us examine their counterclaim, that science does satisfy the evidentialist demand for epistemic justification. Can science provide evidence for or against metaphysical claims? Or, are metaphysical claims beyond its ability to know? Adherents of scientism argue that metaphysical beliefs, like all other beliefs, are subject to the scientific method, and science and science alone provides the only kind of epistemic justification that is acceptable.

Antony Flew's example of the explorer wanting to conduct a test to determine if there is an invisible gardener is indicative of scientism. But it also presents a problem. What kind of experiment or test could establish that there is no gardener at all? Flew's assumption, that if no empirical test would falsify 'there is a gardener,' then the proposition is devoid of content, is a good example of using the results of a test that assume methodological naturalism to provide evidence for metaphysical naturalism. As noted previously, to do so is to reason circularly, by assuming metaphysical naturalism. If science adopts as a rule that only natural processes count as causal explanations, then this limits the conclusion one arrives at to only those that involve natural processes. Methodological naturalism assumes from the start that a non-empirically detectable gardener could not be the cause of the garden, as such a gardener is supernatural rather than natural. It does not follow from this that there is no supernatural gardener. Flew's claim there is no evidence of an 'invisible gardener' is also ironic given that Christianity claims the invisible gardener made an appearance on earth in the person of Jesus.⁴⁶

⁴⁶ Although Jesus states the Father is the gardener in John 15:1: "I am the true vine, and my Father is the gardener."

This does not keep Michael Ruse from making the claim that methodological naturalism can be used to justify metaphysical naturalism. Ruse is an adherent of scientism and thinks the methods of science can be used to adjudicate theological claims. Ruse does not think using methodological Naturalism to justify metaphysical Naturalism is circular. He believes Methodological naturalism is not neutral, and that it helps make the case for metaphysical naturalism. He thinks methodological naturalism embodies the proper procedure for acquiring all knowledge. To support this claim he argues that after 400 years of scientific thought, we know, in general, what the laws of nature are and can use this knowledge to our advantage. The effectiveness of methodological naturalism is so great that even religion should be included in its sphere. Obviously, he rejects Gould's NOMA argument, and does not see the domains of science and religion as separate. The two realms interact. Some scientists use intelligent design theory to account for biological complexity, and if it's ok for religious scientists to use theism to provide scientific explanations, then the flipside should also hold: scientists should be able to provide "a naturalistic account of religion....Methodological Naturalism tightens the screw on the problem of evil to where belief in god is unreasonable....Isn't it then more reasonable to say that Mormonism has nothing to do with Jesus Christ and everything to do with a less-than-rational but obviously charismatic person, one who was clearly willing to bend the truth to burnish his own claims and status? One of the Bernie Madoffs of the religious world?"⁴⁷ While it is questionable whether his argument overcomes the problem of circularity, the latter statement is clearly an *ad hominem*.

⁴⁷ Michael Ruse, "The Naturalist Challenge to Religion," in *Philosophy of Religion, Selected Readings*, ed. by Michael Peterson (New York: Oxford University Press, 2014), 434-5.

If Michael Ruse is optimistic about the ability of science to resolve epistemological and metaphysical debates, Richard Rorty is pessimistic. He thinks that science fails to deliver on the epistemological goods that Ruse thinks science provides. Rorty claims science does not deliver objective truth, truth with a capital T, but merely provisional truths that are based on the unstable consensus that emerges among scientists. Even that is questionable, as science does not speak with a single voice. He states that science thinks it adheres to the correspondence theory of truth. Truth corresponds to what is out there. Good scientific theories are supposed to mirror nature. So what is out there is what science tells you there is. But this appears circular if the method of science is methodological naturalism, as it appears to be. If a scientist were to submit a paper arguing for a supernatural cause of an event, it is doubtful the paper would ever get published. Instead of science delivering objective truth, Rorty proposes ‘solidarity,’ or unforced agreement as an aim.⁴⁸ If science promises to deliver the epistemological goods, why can’t it even cure a headache, let alone tell you what causes it.⁴⁹ If science has come as far as it has the last 400 years, as Ruse claims, why can’t it cure the common cold? The point is, is that science is not as successful in meeting the evidentialist challenge as the New Atheists think it is.

5. Kuhnian Anomalies to Scientific Naturalism

⁴⁸ Richard Rorty, “Dismantling Truth: Solidarity versus Objectivity,” in *Philosophy, The Quest for Truth*, ed. by Louis P. Pojman and Lewis Vaughn (New York: Oxford University Press, 2014), 247-255.

⁴⁹ Physicians have lots of theories and treatments, but do they actually ‘know’ the causal mechanisms of migraines? I’ve been to many neurologists, heard all the theories, and tried a wide variety of treatments. Neurology is hardly an exact science, and there is not even consensus on the underlying pathology of migraines.

Thomas Kuhn is more like Rorty than Ruse in his assessment of science.

Objective truth is never reached, and even the most firmly entrenched paradigm is at risk of being overthrown. As discussed in Ch. 5, Kuhn's *The Structure of Scientific Revolutions* distinguishes between three kinds of science: pre-paradigmatic, normal, and revolutionary science. In normal science, any phenomenon that is unable to be accounted for by the current paradigm, counts as an anomaly. An anomaly, as defined by Kuhn, is an event or occurrence that defies the current paradigm by violating the paradigm-induced expectations.⁵⁰ If serious and persistent enough, anomalies may threaten the overthrow of a paradigm that is unable to resolve them. Revolutionary science for Kuhn occurs when stubborn anomalies that defy explanation build up and threaten the tenability of the current operating paradigm, thereby inviting the construction of a new paradigm that can resolve them. It is possible to argue that metaphysical beliefs are subject to a similar analysis. If naturalism faces a whole host of anomalies that defy scientific explanation, then naturalism as a worldview might be called into question. The list of these problems has been discussed in previous chapters. They include near-death experiences, mystical states, the hard problem of consciousness, qualia, the existence of religion, the existence of the world, the existence of order in the universe, logical and mathematical laws, paranormal phenomenon such as precognition, moral and aesthetic values, religious experience, free will, miracles, or supernatural phenomenon like St. Francis's or Padre Pio's stigmata wounds.

Now suppose that theism is able to provide satisfactory explanations for the persistent anomalies listed above, explanations naturalism cannot provide. If this is the

⁵⁰ Thomas S. Kuhn, *The Structure of Scientific Revolutions* (Chicago: The University of Chicago Press, 1970), 52-3.

case, then it would be rational to conclude that scientific naturalism is inadequate as a worldview. If the list of anomalies grows, naturalism might well be rejected as a metaphysic and replaced by theism. Thus a ‘revolution’ in metaphysics might well occur. The inability of naturalism to explain numerous persistent anomalies ends up ‘falsifying’ naturalism.

6. Extending Hempel’s hypothetico-deductive model to include Metaphysics

Hempel’s deductive-nomological model of explanation is also referred to as “the covering-law model” of explanation.⁵¹ A phenomenon is explained if it can be ‘covered’ by some general law of nature (hypothetical, proposed, or generally accepted).⁵² For example, the fact that Mars’ orbit is elliptical can be explained or covered by Kepler’s three laws of planetary motion (the first one being that all planets’ orbits are elliptical), and the fact that Mars is a planet.⁵³ For our purposes, let us suppose that it is possible to extend Hempel’s model from science to philosophy. A Model of Philosophical Explanation would then allow for metaphysical positions to provide explanations for various phenomena. Thus in principle theism could figure as a hypothesis to ‘cover’ the data current scientific laws cannot. If naturalism and the laws of nature fail to ‘cover’ certain phenomenon, they may be considered anomalous to scientific naturalism. If a phenomenon cannot be ‘covered’ or explained by a naturalist metaphysic and its laws,

⁵¹ Carl G. Hempel, “Laws and Their Role in Scientific Explanations,” in *Readings in the Philosophy of Science*, ed. by Theodore Schick Jr. (Mountain View, CA: Mayfield Publishing Co., 2000), 72-79.

⁵² Carl G. Hempel, “Explanation in Science and History,” in *Frontiers of Science and Philosophy*, ed. by R.G. Colodny (Pittsburgh: University of Pittsburgh Press, 1962), 9-19.

⁵³ Anthony O’Hear, “Hypothetico-deductive method,” in *The Oxford Companion to Philosophy*, ed. by Ted Honderich (New York: Oxford University Press, 1995), 385.

but can be by a theist metaphysic, then this lends credibility to the theist metaphysic. In addition, the larger the number of anomalies not covered by scientific naturalism that can be covered by theism, the greater the likelihood of the truth of the latter and the falsehood of the former.

Any type of phenomena that cannot be accounted for by an established scientific law, or that appears ‘supernatural,’ such as paranormal phenomena, may count as an anomaly against the paradigm of metaphysical naturalism. In the traditional DN model, the current scientific laws would fail to cover them. Any of the miracles Jesus is said to have performed, assuming they occurred, would fit into this category, as they defy current scientific laws. Scientific laws limit what is and what is not possible within the physical universe. Miracles, if credible, fall outside that which is scientifically possible, and thus may be considered anomalous not only to the laws, but to metaphysical naturalism. Metaphysical naturalists have only two choices when presented with miracles: they are either an illusion, hence not real, or our current understanding of the scientific laws of nature is wrong (in which case they can’t be considered laws). But in the face of such phenomena, the metaphysical presupposition that nothing exists outside the physical world, can be called into question. As a result any type of phenomenon unable to be accounted for by known laws of nature, may serve not only as an anomaly to current scientific laws, but to metaphysical naturalism as well.

However, it is possible for the metaphysical naturalist to escape this conclusion, that an alleged supernatural event is potentially anomalous to both the current scientific paradigm and metaphysical naturalism. While the theist may ‘cover’ the phenomena by attributing it to supernatural causation, a naturalist might merely say that the event has a

natural cause, although the event cannot currently be explained by science. Science has simply not yet achieved a sufficient understanding of natural phenomena or the laws that govern them. But sooner or later, the metaphysical naturalist holds, all events will be able to be explained by recourse to the laws of physics and the other natural sciences. So rather than giving in to the theist, and filling the gaps in knowledge (anomalies which defy explanation by natural processes) with God or supernatural explanations, the naturalist simply issues a promissory note and argues that science will eventually figure it and the anomaly will prove illusory. Dennett and Dawkins frequently adopt this strategy. However, it is doubtful science will ever be able to explain such events as Jesus walking on water. The naturalists only recourse to such events is to deny they ever happened.

7. All facts are Theory laden

The view that all facts are theory laden opens up possibilities. Adopting it makes it possible for theists and naturalists to offer alternative interpretations of exactly the same 'facts' based upon their different metaphysical assumptions. What the facts 'are,' often depends not on the facts but upon the theories they adhere to. A theist may see an anomaly which defies science, and calls for a supernatural explanation, whereas the strict naturalist sees only a natural event that sooner or later the methods of science will provide a sufficient causal explanation for. But the point is, how one sees or interprets the 'facts' depends upon one's previous metaphysical assumptions. Alan Chalmers attempts to debunk the scientific realist's 'camera analogy' approach that believes the 'facts' are neutral and passively given to the senses. The logical positivists believed that

observation and theory are separate. Chalmers argues they are not. What constitutes the 'facts' about the observable world are not statements fed us by our senses, or neutrally read off our sense data. Rather, the statements of facts are due, in large part, to our interpretation of them based upon our pre-existing conceptual framework.

The logical positivists built off of the empiricism of Locke and Hume, who argued ideas can be traced to either sense impressions, reflection upon them, or internal mental data. The positivists conceived of sense data as the atoms of experience, and all meaningful propositions must in theory be reducible to them. They held to a correspondence theory of truth, with foundational beliefs resting on sense data. A statement is true if it corresponds to the atomistic facts, or compounds thereof, which can be captured by the 'camera' of sense perception. The camera takes a snapshot of the objective facts. Thus, when shed of their initial tendencies toward idealism, the positivists were, in essence, scientific realists and externalists. A truth directly corresponds to something 'out there' that exists independently of the subject. It is something which one uncovers or 'unearths.' Perception is a source of neutral data and facts are directly given to experience. Theoretical sentences build upon and depend upon observational (or protocol) sentences. The aim of scientific theories is to describe an objective reality that is 'out there' independent of us. A scientific theory is 'true' to the extent that it correctly mirrors or corresponds to this objective reality. This position is captured by Wittgenstein's 'picture theory' in the *Tractatus*.

W.V. Quine and Wilfrid Sellars helped undermine the realism of the positivists and in the process undermined traditional foundationalism which saw sense perception as a source of our foundational beliefs. Loosely stated, the Verifiability Principle of the

positivists stated that “A sentence had literal meaning if and only if the proposition it expressed was either analytic or empirically verifiable.”⁵⁴ In Quine’s 1951 article, “Two Dogmas of Empiricism,” Quine undermines the first dogma of empiricism, the distinction between analytic (logical) and synthetic (factual) truths. Quine’s radical empiricism holds that Hume did not go far enough in acknowledging the debt that all beliefs, even ‘relations of ideas,’ must pay to sense experience. As a result, Quine rejects the Kantian division of statements into analytic and synthetic ones.

The second dogma is equivalent to the verifiability principle, claiming that the meaning of a statement is its method of verification. Quine argues against this by saying that “statements about the external world face the tribunal of sense experience not individually but only as a corporate body.”⁵⁵ The meaning given to a single empirical concept or proposition cannot be reduced to atomic components, nor can statements be verified or falsified in isolation from the web of our interconnected beliefs, as the logical positivists assert they can be. The rejection of the analytic/synthetic distinction, and the adoption of meaning-holism, results in philosophy being an empirical enterprise. This position even denies the possibility of Kantian *a priori* categories. Quine believes there are no *a priori* truths or statements that are “immune to revision.”⁵⁶ Even the statements of math and logic are not infallible but may fall by the wayside, although Quine thinks $1+1=2$ and many other truths are probably safe from revision. Thus Quine is a fallibilist (a doctrine associated with the founder of pragmatism C.S. Peirce) in that he maintains

⁵⁴ A.J. Ayer, “The Principle of Verification,” in *Classics of Analytic Philosophy*, ed. by Robert Ammerman (Indianapolis, IN: Hackett Publishing Co., 1990), 121.

⁵⁵ W.V. Quine, “Two Dogmas of Empiricism,” in *Classics of Analytic Philosophy*, ed. by Robert Ammerman (Indianapolis, IN: Hackett Publishing Co., 1990), 210.

⁵⁶Ibid., 211.

that our claims to knowledge are always vulnerable and subject to revision. Quine thinks the “foundationalist project is unfeasible” and abandons any type of quest for Cartesian certainty or final, definitive truth.

The alternative to realism is some form of anti-realism. One form of anti-realism claims that the unobserved entities that scientific theories postulate (for example, electrons, or quarks) are merely convenient ‘fictions’ posited for their instrumental value in making predictions. This view is Instrumentalism. Van Fraassen offers as a different alternative to realism, a different form of anti-realism called constructive empiricism. Its goal is empirical adequacy, not metaphysical truth. Instead of claiming that an accepted scientific theory mirrors objective reality, if it has predictive accuracy, then it is empirically adequate. He states: “Science aims to give us theories which are empirically adequate; and acceptance of a theory involves as belief only that it is empirically adequate. This is the statement of the anti-realist position I advocate; I shall call it constructive empiricism.”⁵⁷ Constructive empiricism does not preclude theism and in fact van Fraassen is a theist.

N.R. Hanson, in his 1958 article ‘Observation,’ argues that what one observes depends upon the theories that one upholds. In other words, perception is not neutral, nor does it deliver ‘facts.’ All facts are theory laden and there are no theory-independent facts. He states: “Observation of x is shaped by prior knowledge of x .”⁵⁸ Imagine Kepler, Brahe, Ptolemy and Aristotle watching the sun at dawn. Does each see the same thing? No, so what are the ‘facts’? Suppose you show an x-ray tube to an Eskimo child

⁵⁷ Bas C. van Fraassen, “Constructive Empiricism,” in *Readings in the Philosophy of Science*, ed. by Theodore Schick Jr. (Mountain View, CA: Mayfield Publishing Co., 2000), 268.

⁵⁸ N.R. Hanson, “Observation,” in *Readings in the Philosophy of Science*, ed. by Theodore Schick Jr. (Mountain View, CA: Mayfield Publishing Co., 2000), 180.

and a trained physicist. Though they both have the same perceptual experience (the same sensations), it is very likely they ‘see’ two different things. Each is aware of something different due to the theories they hold. The physicist ‘sees’ “the instrument in terms of electrical circuit theory, thermodynamic theory, the theories of metal and glass structure, thermionic emission, optical transmission, refraction, diffraction, atomic theory, quantum theory and special relativity.”⁵⁹ The child sees none of this. Thus we don’t just see neutral facts. Rather, all facts are interpreted and theory laden. As Hanson states: “there is more to seeing than meets the eyeball.”⁶⁰ Michael Polanyi makes the point that what a medical student sees in an X-ray of a pulmonary disease is not what an expert in pulmonology sees.⁶¹ As a result, whether you are a metaphysical naturalist or a theist can determine what you ‘see,’ or what counts as an empirical possibility. A naturalist sees an alleged supernatural event not as an anomaly which discredits scientific naturalism, but as an event unable to be explained by science just yet. A theist sees an anomaly which discredits naturalism and provides evidence for theism.

8. Underdetermination of Theory and its Consequences for Metaphysics

Quine argues that our epistemic claims outrun our sensory input. Our claims to knowledge are underdetermined by the evidence. When I see the front of a coffee cup I do not see its back side, but I infer that it must have one based upon previous experience of coffee cups. As a result, Quine states that “the relation between the meager input and

⁵⁹ Ibid., 179.

⁶⁰ Alan Chalmers, *What is this thing called Science?* (Indianapolis, IN: Hackett Publishing, 1999), 5.

⁶¹ Ibid., 7-8.

the torrential output” of theory, is underdetermined.⁶² Quine is following Pierre Duhem, who recognized that many propositions have to be in place in order to verify or falsify a proposition, and if an experiment fails the fault could be anywhere.⁶³ Quine takes Duhem’s thesis and extends it beyond scientific beliefs to include all our beliefs. In doing so, Quine is attacking the positivists’ assertion that the meaning of a proposition is the sense experiences that count in favor of it. The logical positivists believed that immediate experience provides the foundation for beliefs, if beliefs cannot be reduced to or deduced from sense data, then what justifies them?

In *Two Dogmas*, he states: “The totality of our so-called knowledge or beliefs...is a man-made fabric which impinges on experience only along the edges....A conflict with experience at the periphery occasions readjustments in the interior of the field....Reevaluation of some statements entails reevaluation of others, because of their logical interconnections.... But the total field is so underdetermined by its boundary conditions, experience, that there is much latitude of choice as to what statements to reevaluate in the light of a single contrary experience.”⁶⁴ In other words, the inner ‘man-made fabric’ of our theories and metaphysical beliefs are underdetermined by the empirical data on the peripheral fringe. In addition, the fringe empirical beliefs are interpreted by the inner core. Available evidence is always compatible with a plurality of competing theories. Thus Quine argues that underdetermination allows for multiple ways to explain the facts.

⁶² W.V. Quine, “Epistemology Naturalized” in *Knowledge: Readings in Contemporary Epistemology*, ed. by Sven Bernecker and Fred Dretske (Oxford: Oxford University Press, 2004), 274.

⁶³ Pierre Duhem, “Physical Theory and Experiment,” in *Readings in the Philosophy of Science*, ed. by Theodore Schick, Jr. (Mountain View, CA: Mayfield Publishing Co., 2000), 55. Duhem states “In sum, the physicist can never subject an isolated hypothesis to experimental test, but only a whole group of hypotheses.”

⁶⁴ Quine, “Two Dogmas of Empiricism,” in *Classics of Analytic Philosophy*, 211.

The history of philosophy bears witness to the claim that there are innumerable ways to account for our sensory experience. Locke and Berkeley are a good example of this. Locke reasoned that even though we have no sense impression for ‘matter,’ it is rational to infer that material substances exist as the basis of our primary and secondary qualities. Just as clothes don’t hang by themselves in storefront windows, it is rational to infer there is a mannequin supporting them, even if one has no sense impression for it. However, while they can be inferred, Locke admits material substances can’t be known directly, stating they are something “to support those ideas we call accidents,” but beyond that, Locke states “I know not what.”⁶⁵

Berkeley responds, Well if they can’t be known, then how do you know they exist, or are material? Maybe God is the cause of primary and secondary qualities. In other words, both God and matter are sufficient explanations of the same sense data. Fichte’s idealism similarly argues that there is no one correct way to interpret the facts. He believed that “if we choose to approach nature scientifically, it is because we believe this method serves our interests and makes our world meaningful. In the final analysis, even science is based on subjective commitments...for the world I live in is always a world structured by the way I approach it.”⁶⁶

Scientific theories are supposed to be descriptive of nature, to offer a picture of the facts. But just because scientific theories work does not mean they correspond to reality ‘out there.’ Underdetermination of theory means that there are multiple interpretations of the same experienced world, and this yields an indeterminacy of just

⁶⁵ John Locke, *An Essay Concerning Human Understanding*, ed. by A.S. Pringle-Pattison (Oxford: Oxford University Press, 1969), 165 (Bk II, Ch. 23:15).

⁶⁶ William F. Lawhead, *The Voyage of Discovery, A History of Western Philosophy* (Belmont, CA: Wadsworth Publishing Co., 1996), 367.

what the ‘facts’ are. As a result, it is “impossible to float a reductionist program on this sea of indeterminacy.”⁶⁷ Quine undermines the idea that sense data can serve as a single, secure foundation in verifying propositions and theory, and in doing so, casts doubt on the idea that scientific theories mirror an independent nature. He notes that one “effect of abandoning [the two dogmas of empiricism] is, as we shall see, a blurring of the supposed boundary between speculative metaphysics and natural science.”⁶⁸ Electrons may be just as much a human posit as the Greek gods, but the conceptual use of electron is nevertheless justified for its pragmatic value in making predictions. This does not mean, however, that science delivers unvarnished truth. Newton’s theory of gravity allows us to make successful predictions, but it was wrong. In addition, Newton only described how gravity behaved, he did not explain what it is. Newton actually thought gravity was result of the finger of God acting on the universe in order to hold it together. The point is, as a result of underdetermination of theory it is possible that both the metaphysical positions of theism and naturalism might offer up ‘epistemologically adequate’ (similar to van Fraassen’s ‘empirically adequate’) theories to explain the data. But this is no indication of which theory is actually true in an independent-of-human-conceptualization sense.

Quine argues that we interpret and explain new experiences through the lens of old concepts and laws that are familiar to us. He states: “Inculcating a belief is like charging a battery. The battery is thenceforward disposed to give a spark or shock, when suitably approached, as long as the charge lasts.”⁶⁹ Similarly, Dr. V.S. Ramachandran, a

⁶⁷ Robert J. Fogelin, “Aspects of Quine’s Naturalized Epistemology,” in *The Cambridge Companion to Quine*, ed. by Roger F. Gibson, Jr. (Cambridge: Cambridge University Press, 2004), 26.

⁶⁸ Quine, “Two Dogmas of Empiricism,” in *Classis of Analytic Philosophy*, 197.

⁶⁹ W.V. Quine and J.S. Ullian, *The Web of Belief* (New York: Random House, 1978), 10.

neuroscientist, demonstrates that our mind is hardwired to fill in blank spots in our sensory data with information that is similar to it. In his book, *Phantoms in the Brain*, Ramachandran examines the phenomenon of phantom limbs that many amputees report having, of continuing to perceive the missing limb as still being there. He also examines the blind spot in our visual field, the spot where the optic nerve is attached to the eyeball. He notes that we don't perceive the blind spot as an empty 'hole' in our vision, which one would think would occur because there are no light detecting photoreceptor cells there. This is because our brains 'fill in' the missing information with data that is consistent with what is around it. He provides several diagrams which demonstrate as much, including one which allows the reader to perceive the gap in vision caused by the blind spot, and others which show how it is filled in. If one is looking at a vertical line, instead of seeing a hole in the middle where ones' blind spot is, one sees a continuous line because the brain fills the hole in with similar black pixels. Ramachandran also provides an explanation for this:

The answer lies in a Darwinian explanation of how the visual system evolved. One of the most important principles in vision is that it tries to get away with as little processing as it can to get the job done. To economize on visual processing, the brain takes advantage of statistical regularities in the world...The visual system might then apply surface interpolation to 'fill in' the [missing data].⁷⁰

This phenomenon might also serve as an example of a "covering theory," of our mind filling in gaps in information with information that is consistent with it, so as to cause us to think we know something (for example, a generalization), when in actuality we do not. It is possible to argue that just as Ramachandran demonstrates how our brain fills in our

⁷⁰ V.S. Ramachandran and Sandra Blakeslee, *Phantoms in the Brain, Probing the Mysteries of the Human Mind* (New York: William Morrow and Co., 1998), 103-4.

blind spot, gaps in knowledge are filled in or ‘covered’ by the theories we adhere to. A theist fills gaps in knowledge, or events with no known natural cause, to God. A naturalist fills in the same gaps with as yet unknown, but possibly one day known, natural processes.

Hanson and others have argued that even the most basic observation is theory laden, that there are no ‘facts’ independent of theory. Nietzsche said: “it is precisely facts that do not exist, only interpretations.”⁷¹ Kuhn similarly stated: “there is no theory-independent way to reconstruct phrases like ‘really there’; the notion of a match between the ontology of a theory and its ‘real’ counterpart in nature now seems to me illusive in principle.”⁷² Thus, what one sees is a reflection of what’s in one’s head; one’s theories read the evidence in such a way so as to confirm the theory that one upholds, as well as cover unexplained phenomena. What implications does this have for our discussion of the relationships between evolution, theism, and naturalism? When pondering the events of the world, a naturalist sees only natural processes, while a theist sees God’s design and providence. The New Atheists read the evidence in such a way that scientific naturalism provides evidence entirely for metaphysical naturalism and none for theism, thus substantiating the evidentialist objection to theism. Theists on the other hand, read all the data in such a way that all the evidence points to theism, and against metaphysical naturalism. Naturalists see only unguided, natural processes in evolution. Theists see guidance and divine intelligence at work.

⁷¹ Friedrich Nietzsche, *The Portable Nietzsche*, ed. by Walter Kaufmann (New York: Penguin Books, 1954), 458.

⁷² Kuhn, *The Structure of Scientific Revolutions*, 3rd edition, 206.

Does this underdetermination of theory mean that theism and naturalism are both equally good, as both are sufficient to explain the facts? Is there no way to judge between them? As we cannot obtain the third condition (objective truth) needed for definitive knowledge, such knowledge regarding metaphysical beliefs is impossible. Thus neither a theist nor a metaphysical naturalist can claim to ‘know’ their position is correct, and the other false. In addition, it has been shown that each side reads the evidence in such a way that it justifies its position and refutes the other. Quine uses the metaphor of Neurath’s boat to illustrate that we are adrift with no foundation under us other than the peripheral sensory contact we need to stay afloat, and must interpret sensory stimulations from the vantage point of the conceptual structure of the boat within which we find ourselves. Just as there is no way of constructing a new boat from outside the boat, from suspension above open water, so there is no way to gain an objective view of the world apart from the methods of science and the evidence of one’s senses.⁷³ There is no way of asking whether the entire boat or web of beliefs one has is justified; it is all we have and without it we are sunk.

Quine believes the ‘torrential output’ of our theories outstrip or are underdetermined by the ‘meager input’ of sensory stimulations. In other words, positing the existence of gravity may outstrip the empirical data, but this is allowed for pragmatic reasons because doing so allows for all sorts of useful predictions to be made. But what metaphysical reality actually corresponds to the concept of gravity? We may never know. In “Posits and Reality,” Quine argues that claiming a desk is made up of molecules which are “swarms of subvisible particles in vibration” is in the same

⁷³ W.V. Quine, “Epistemology Naturalized” in *Knowledge: Readings in Contemporary Epistemology*, ed. by Sven Bernecker and Fred Dretske (Oxford: Oxford University Press, 2004), 274.

Neurathian boat. While “posits are not *ipso facto* unreal,” what kind of metaphysical reality they ultimately have cannot be known, and is only pragmatically justified.⁷⁴

Although Quine seeks to naturalize epistemology, thus leaving us, according to Jaegwon Kim, without a normative element guiding justification, Quine does offer some pragmatic criteria which govern how one constructs a web of belief.⁷⁵ In “Epistemology Naturalized” and elsewhere in his writings Quine argues that the theories which should be adopted are those which have a higher rather than lower explanatory power, while causing as little disturbance as possible to the coherence of background knowledge.

While Kim claims Quine offers no guidance on what distinguishes a ‘good’ theory from a ‘bad’ theory, Quine does suggest that explanatory power serves a normative function.

Explanatory power dictates that some posits are “epistemologically superior” to others.⁷⁶

In the chapter on ‘Evidence’ in *Word and Object*, Quine lists further criteria that should govern belief revision: predictive power, simplicity, familiarity of principle, and conservatism.⁷⁷ A pragmatist suspends judgment concerning the reality of a theory’s posits, and is willing to live with metaphysical indeterminacy. The only concern for a pragmatist is whether or not the practice of positing these concepts pays.

9. Anomalies that are better ‘covered’ by theism than naturalism

⁷⁴ W.V. Quine, *The Ways of Paradox and Other Essays*, (New York: Random House, 1966), 238.

⁷⁵ Jaegwon Kim, “What is Naturalized Epistemology?” in *Knowledge: Readings in Contemporary Epistemology*, ed. by Sven Bernecker and Fred Dretske (Oxford: Oxford University Press, 2004), 279, 281.

⁷⁶ W.V. Quine, *From a Logical Point of View* (Cambridge: Harvard University Press, 1953), 44-45.

⁷⁷ W.V. Quine, *Word and Object* (Cambridge: M.I.T. Press, 1960), 18-20.

Since adherents to each metaphysical system often find the views of the opposing camp dissatisfactory, since naturalism and theism are contradictory, is there any way to judge between them, to determine who's right and who's wrong? As noted, the Correspondence theory of truth is unable to, as we can't get outside the natural world to know whether religious beliefs correspond to a transcendent reality, or whether all that exists are natural processes. Quine has suggested another normative guide in epistemology, the overall coherence of the web of belief, a web that must be squared with empirical input. The standard of coherence therefore offers some guidance as to which metaphysical system might be more satisfactory. Wilfrid Sellars, in his essay "Philosophy and the Scientific Image of Man," states that "The aim of philosophy, abstractly formulated, is to understand how things in the broadest sense of the term hang together."⁷⁸ We might call the ability to hang together 'coherence.' The system which is the most comprehensive in explaining how the universe hangs together is the most coherent. The system which leaves us with more unexplained events, more gaps in knowledge, more anomalous events which defy reduction, is less coherent. For the purposes of this study, we can apply Quine's standards to metaphysics and argue that if theism is 'epistemologically superior' to naturalism, then it should have greater overall coherence and explanatory power. In order to do so, let us examine how each handles some current scientific anomalies.

As stated earlier, there is a vast literature of phenomena that defy being 'covered' under the scientific naturalist paradigm. Hence they can be said to be anomalous, or recalcitrant phenomena in that they defy explanation by the paradigm of naturalism.

⁷⁸ Wilfrid Sellars, *Empiricism and the Philosophy of Mind* (London: Routledge & Kegan Paul Ltd, 1963), 1.

These included: near-death experiences, the hard problem of consciousness, paranormal phenomena, the existence of the world, and free will. These are the main ones. If God didn't exist, you wouldn't expect there to be religious and mystical experience, or for religions based upon revelation to exist. If only physical processes exist, then you would not expect anybody to be able to perform miracles, as it is claimed Jesus did. Why are there laws of nature? How can we account for the existence of order in the universe, including biological complexity? Can a physicalist account for the laws of logic? Do we discover or invent Modus Ponens? What about mathematics? A mathematical realist claims numbers are abstract, non-physical entities, and are independent of human minds, thus enabling us to know mathematical truths such as '3 is a prime number.' Yet nowhere can you point to the number three's physical counterpart. Similarly, what about intentional states, or beliefs, desires, wishes, and hopes? Where are they if they are physical, and can they be accounted for by a strictly natural order of the world? What about semantic understanding, something human minds have but artificial intelligence lacks? What about moral and aesthetic values such as goodness, justice, and beauty? These seem to exist, but not as physical entities. Theism can cover miracles by arguing that God is the author of the laws of nature and can override them at any time. The only recourse naturalism has is to deny them. What about love? If love is reducible to the hormones oxytocin, testosterone, vasopressin and others that stimulate the release of dopamine and serotonin in the brain, if you inject these drugs into your blood system does one feel love? If so, to whom is the love directed?

If one believes that these many phenomena are indeed anomalous as far as scientific naturalism is concerned, and one also believes that theism can provide a better

explanation of them, then theism might well be a better metaphysic than naturalism. In order to determine if this is possible, let us examine in greater detail five of the major beliefs considered anomalous, and then consider how evolution relates to them. In examining these phenomena, we will use Hempel's hypothetico-deductive, or 'covering' model to determine which of the two alternative metaphysical positions 'cover' the recalcitrant phenomena in question better. We will begin by assuming either theism or naturalism as a hypothesis, and then determine if it can cover the data. We will then hopefully be able to decide which worldview offers a more satisfactory explanation of the phenomena, and hence which metaphysic is epistemically preferable.

9.1 Near-Death Experiences

Dr. Michael Sabom, a cardiologist, interviewed a man who had been comatose and on life support following a bout of pneumonia. He states the man claims he left his body and "observed" a medical team working over his unconscious body. In this encounter, he felt he had been let in on 'the big secret' to life and death."⁷⁹ In this case, the patient felt that the 'Big Secret' is that death is not the end of consciousness, that consciousness can exist independent of the body and survives the death of the body. In terms of trying to resolve the metaphysical debate between naturalism and theism, near death experiences are perhaps one of our most valuable tools. The biggest problem confronting the debate between the two worldviews is that there is no objective way to decide between them, to get outside of our minds in order to determine if in fact there is

⁷⁹ Michael B. Sabom, M.D., *Recollections of Death, A Medical Investigation* (New York: Simon & Schuster, 1982), 15.

any type of transcendent reality apart from natural processes. The debate amounts to asking this question: if someone lops off your head with an ax, do you still have a mind?⁸⁰ Although survival of bodily death is a logically independent issue of the truth or falsity of theism, naturalists would generally say no, and theists would generally say yes. Is there a soul that survives death? Most people might answer, ‘I don’t know, I haven’t died yet.’ But there are people who have died, but are then resuscitated. If naturalism is true, you would expect them to have experienced nothing. But if theism is true, their claims to have experienced the afterlife, of having continued to live on despite the death (or near-death) of the body, are more credible. What is also interesting about people who have had near-death experiences, is that their epistemic claims about transcendent metaphysical realities shift from one of belief, to one of knowledge. One survivor stated, “I no longer ‘believe’ in God; I’m absolutely certain.”⁸¹ Another survivor states, “Now I know there’s more after death.”⁸²

Perhaps more than any other kind of medical specialist, cardiologists are prepared to ask these questions, because they have had the most patients who have ‘died’ due to cardiac arrest and been resuscitated by means of defibrillators and drugs. Pim van Lommel is a cardiologist who himself states in his book, *Consciousness Beyond Life*, that near death experiences are “anomalies because their cause and content cannot be accounted for with current medical and scientific ideas about the various aspects of human consciousness and the mind-brain relationship.”⁸³

⁸⁰ Or, similarly, if a human was genetically engineered, i.e., a human artifact, would they have a soul?

⁸¹ Pim van Lommel, M.D., *Consciousness Beyond Life: The Science of the Near-Death Experience* (New York: HarperCollins Publishers, 2011), 56.

⁸² *Ibid.*, 54.

⁸³ *Ibid.*, 247.

Near-death experiences have already been discussed in Chapter Four, so we will limit our discussion of them to the metaphysical implications they may or may not have. Patricia Churchland typifies the naturalist's response to near-death experiences. She asks, Were the people actually dead, or just near to death? She argues that if they were actually dead, then they would be brain dead, and not be having any experiences whatsoever. But if they were only near to death, as the term for these experiences implies, then their brains were still functioning, and they were still capable of having experiences. As a naturalist must, she attempts to provide a possible neurobiological account for them, such as loss of oxygen to the brain (anoxia and hypoxia), the release of endogenous opioids, hallucinations, self-deception, fraud, and “*neuro-oddities* for which we do not – not yet, anyhow – have complete explanations.”⁸⁴ This last possibility is strange in that Churchland allows for the possibility that science may not yet know what causes them, but at the same time she claims that this is a “neuro-oddity.” So we can't be sure what causes them, but nevertheless for her it must be some kind of neural malfunction.

It seems clear that the naturalists have not read much of the near-death literature. First of all, what is striking is the similarity of all the accounts. Raymond Moody gave an account of these which is stated in Chapter 4. This uniformity of experience suggests that the experience has an objective, uniform basis, which one would not expect if they were just subjective, variable hallucinations, as Churchland claims. Second, most people who experience them do not regard them as hallucinations. Many recount meeting long deceased friends and relatives whom they are shocked to find out are still alive. Some

⁸⁴ Patricia Churchland, *Touching a Nerve, The Self as Brain* (New York: W.W. Norton & Co., 2013), 67-72, 78-80.

recount meeting siblings they never knew they had.⁸⁵ Third, many experience an ‘autosopic’ element in which they experience their consciousness literally outside their body, looking down at it, as a spectator. To confirm this, several people are able to give accounts of what took place around them while they were ‘dead.’ Fourth, some can give empirical evidence of this, such as the woman who saw the red shoe on the roof, as cited in Chapter Four. Fifth, many of them report experiencing an immense love radiating from a divine being and describe a personal encounter with God. Sixth, many no longer have a fear of death as a result of their experience and feel at home in any place of worship.

Last, what is striking about such experiences, is that much of the data concerning them has been compiled by physicians who were hardened naturalists and then gradually changed their worldview as a result of hearing their patients’ stories. Michael Sabom, a cardiologist, was not only a naturalist but a religious skeptic when he first heard his patients describe their near-death experiences. Slowly, over time, as he accumulated one story after another, he gradually changed his mind.⁸⁶ Eben Alexander was a neurosurgeon who was a complete naturalist until he had a NDE as a result of meningitis. He considered his experience “Proof of Heaven,” and that is what he entitled his book describing it.⁸⁷ There are even accounts of skeptical nurses who changed their beliefs after hearing their patients describe what they were seeing in the moments before death.

⁸⁵ Eben Alexander believes he met a sister he never knew. Todd Burpey’s son states he met a sister who unknown to him had miscarried in his mother’s womb.

⁸⁶ Sabom, *Recollections of Death*, 3.

⁸⁷ Eben Alexander, M.D., *Proof of Heaven: A Neurosurgeon’s Experience into the Afterlife* (New York: Simon & Schuster, 2012).

All of these reasons suggest that near-death experiences are not illusory but veridical, and argue strongly that there is a real possibility the soul survives death.

Perhaps one of the most famous near-death experiences was that of A.J. Ayer, one of the founders of Logical Positivism, a proponent of the Verifiability Principle, and a hardened atheist. After battling pneumonia, Ayer's heart stopped beating for four minutes. He entitled his account of what happened, "That Undiscovered Country, What I saw When I Was Dead." Ayer describes coming upon a river which he successfully crossed on his second attempt. He then describes being "confronted by a red light....I was aware that this light was responsible for the government of the universe."⁸⁸ Ayer's doctor, Dr. Jeremy George, later made it public that upon awakening from his ordeal, Ayer claimed to have met the supreme Divine Being.⁸⁹ While Ayer does not say as much in his initial account, he did state that his experience constituted "strong evidence that death does not put an end to consciousness." However, he also stated that "the most probable hypothesis is that my brain continued to function although my heart had stopped." In any event, he concluded that the experience was enough to "slightly weaken my conviction that my genuine death...will be the end of me." Later, in a 1988 postscript, he seems to regain his skepticism once again. But the fact that Ayer would call into question his metaphysical naturalism on account of a near-death experience, and even admit in the Postscript that he is at least willing to entertain the possibility of theism, demonstrates that near-death experiences are a potential game changer in the naturalism vs. theism debate. Ayer's near-death experience can be given either a theist or naturalist explanation. Although his story is singular and ambiguous and is by no means

⁸⁸ <http://www.philosopher.eu/others-writings/a-j-ayer-what-i-saw-when-i-was-dead/>

⁸⁹ <http://web.csulb.edu/~plowentr/Ayer%20NDE%202.pdf>

indicative of the near-death experience in general, when the entire corpus of the near-death literature is considered, it is arguably more easily ‘covered’ under a theist metaphysic than a naturalist one.

9.2 Subjectivity and the Hard Problem of Consciousness

A naturalist approach to the philosophy of mind usually takes the position of reductive materialism, which says that all mental states can be identified with brain states. For that reason it is sometimes called identity theory, since it identifies mental states with brain states. Reductive materialism admits there are mental states, though they are not other than physical states. Eliminative materialism goes a step further and says we should just reject the existence of mental states altogether. Patricia and Paul Churchland, as well as Richard Rorty, are adherents of this position. Just as science has gotten rid of phlogiston, ether, and vital force, so must it get rid of belief, desire, and even hope.

The major problem with eliminative materialism is that it is obvious that we do have mental events. The fact naturalists must explain is how material neurons give rise to consciousness. David Chalmers refers to this in his book, *The Conscious Mind*, as the hard problem of consciousness. Chalmers finds a reductionist account of consciousness unsatisfactory. The hard problem of consciousness is that subjective awareness is so unlike matter it is hard to see how one can be identified with the other. He states:

Even if we knew every last detail about the physics of the universe – the configuration, causation, and evolution among all the fields and particles in the spatiotemporal manifold – *that* information would not lead us to postulate the existence of conscious experience. My knowledge of

consciousness, in the first instance, comes from my own case, not from any external observation. It is my first-person experience of consciousness that forces the problem on me.⁹⁰

Chalmers states that there is an “epistemic asymmetry” between our knowledge of consciousness and our knowledge of other phenomena, and as a result, mental states cannot be said to be identical to brain states, or said to be eliminated by them. Chalmers conducts a thought experiment in which one imagines a zombie who looks just like us, performs the same actions as us, but lacks any type of consciousness. The fact that we can imagine this, he claims, entails that consciousness is not the same thing as material processes – mental states are not physical states. It also states why ‘the problem of other minds’ is a problem, for we cannot be certain other people are conscious or what their experiences are as we do not have access to their mental states. For these reasons Chalmers thinks identity theory is wrong.

Given the failure of materialism to account for the mind-body problem, Chalmers states that we have three alternatives: interactionism, epiphenomenalism, and panprotopsychism.⁹¹ At the beginning of *The Conscious Mind*, he states “this work is perhaps unusual in largely eschewing the philosophical notion of identity (between mental and physical states, say) in favor of the notion of supervenience.”⁹² Chalmers argues that his form of supervenience is not classical dualistic epiphenomenalism, which sees the mind as different from the body but nevertheless dependent upon and arising from it, in the same way that one’s shadow is different from, but causally dependent

⁹⁰ David J. Chalmers, *The Conscious Mind, In Search of a Fundamental Theory* (Oxford: Oxford University Press, 1996), 101-2.

⁹¹ David Chalmers, “Consciousness and its Place in Nature,” in *The Blackwell Guide to Philosophy of Mind*, ed. by Stephen P. Stich and Ted A. Warfield (Malden, MA: Blackwell Publishing, 2003), 124-134.

⁹² Chalmers, *The Conscious Mind.*, xvii.

upon, one's body. The main problem with epiphenomenalism is that it makes the mind causally inert. As a result, this position resists a strong intuition almost all of us have, that the mind is causally active and produces changes in the body. Chalmers wants to maintain a type of property supervenience in which mental causation "remains open." He admits that epiphenomenalism plus free will, which seems to require mental causation of the physical, is a paradox, but he thinks that it is in a better position than the alternatives, which are far worse.⁹³ Chalmers holds that substance dualism might be correct, but he is unwilling to opt for it outright. In effect, he is left holding that the mind is causally inert, while at the same time wanting to say that this is not his position, and the mind is causally active. But which is it, and why?

Similarly, Thomas Nagel considers the biggest obstacle to naturalism to be consciousness itself, which "threatens to unravel the entire naturalistic world picture."⁹⁴ Nagel believes that science does not capture the common sense essence of human beings, which is consciousness and free will. Nagel's position is a continuation of his earlier project in the philosophy of mind put forth in *The View from Nowhere*, in which he argues that the objective method of science does not adequately address issues of first-person subjectivity. He argues that an objective viewpoint, though claiming to be complete, is not because it leaves no room for human subjectivity. "An objective standpoint is created by leaving a more subjective, individual, or even just human perspective behind....Physics is bound to leave undescribed the irreducibly subjective

⁹³ Ibid., 158-160.

⁹⁴ Thomas Nagel, *Mind and Cosmos, Why the Materialist Neo-Darwinian Conception of Nature is Almost Certainly False* (New York: Oxford University Press, 2012), 35.

character of conscious mental processes....The subjectivity of consciousness is an irreducible feature of reality – without which we couldn't do physics or anything else.”⁹⁵

In *Mind and Cosmos* he retools his argument into an “argument from the failure of psychophysical reduction” which asserts there are innumerable qualities of the mind that defy reduction, such as qualia, intentions, beliefs, desires, understanding, and moral values.⁹⁶ In this regard, theism is more attractive than naturalism because it at least admits the reality of these events.⁹⁷ However, this does not make him a Cartesian; it only forces him to side with the anti-reductionists. He deems as unacceptable the naturalist's attempt to overcome these problems by offering a promissory note to science in the hope that one day it will adequately explain them. He jokingly refers to the tendency to do so as the “Darwinism of the gaps.”⁹⁸ This is a play on a phrase made famous by Dietrich Bonhoeffer, who argued it was wrong to use God simply as a stop-gap for questions science is unable to answer. Naturalism, on the other hand, believes science will eventually explain everything. There are questions science has not resolved, such as the mystery of consciousness and the origin of the universe, but eventually the current faith in science and naturalism holds that they will be solved, not by God, but by Darwinism and science.

The shortcoming of Nagel's position is that he doesn't really have anything to offer other than a negative critique of naturalism. He states: “all that can be done in this stage in the history of science is to argue for recognition of the problem,” that is, that

⁹⁵ Thomas Nagel, *The View from Nowhere* (Oxford: Oxford University Press, 1978), 7-8.

⁹⁶ Nagel, *Mind and Cosmos*, 5.

⁹⁷ *Ibid.*, 25.

⁹⁸ *Ibid.*, 127.

various phenomena defy materialist reduction.⁹⁹ Yet he offers no positive alternative to either naturalism or theism except a vague neutral monism which somehow asserts the primary role of the mind. The starting point for this monism must be ourselves and our experiences and not an external natural world or transcendent mind. All knowledge is ultimately self-knowledge, and hence must always defer to the self that is doing the knowing. While Nagel concludes his book with the hope that the secular establishment will accept his critique and learn to wean itself off of materialism, without offering a plausible alternative (as theists do) it is highly unlikely that materialists will take note. As Nagel notes, his attempt is to disprove naturalism by showing it cannot account for certain phenomena. Naturalists might counter this by just claiming that science will eventually explain any missing gaps or alleged anomalies. But if Nagel is right, scientific materialism cannot, in principle, account for mental phenomena. Nagel's negative critique demonstrates that the New Atheists' claims that evolution disproves theism is unwarranted, and that the Conflict narrative in which Science slays Theism is a false narrative.

J.P. Moreland, on the other hand, argues for a much more positive conclusion, and thus leaves us in a less skeptical position than Nagel. He claims that all naturalist accounts of the mind, reductive materialism, eliminative materialism, and epiphenomenalism (which he calls the emergent property view) have problems that cannot be resolved. By default, this leaves us with substance dualism. Traditional dualism asserts there are two types of substances. Matter has the qualities of being solid, extended in three dimensional space, publically observable, measurable, and determined

⁹⁹ Ibid., 33.

by the laws of nature. Mind, on the other hand, has the properties of not being solid, not being extended in space, of not being publically observable but only observable to oneself, not measurable, and immune from the laws of nature. The Law of identity states: “If two things are the same, then their properties must be the same.” So if x and y are identical, x should have the same properties as y. If, as the naturalists claim, mind can be reduced to brain physiology, that mental states should be identical to brain states. But it has just been shown that consciousness has radically different properties from matter. Therefore, the mind \neq brain. Consciousness cannot arise from inanimate matter. In fact, Moreland argues, even if mental states could emerge from natural, material processes, such properties could not be causal agents, because only substances are. Moreland concludes: “the simple fact is that the existence of mind has always been a problem for the physicalists....Physicalism is false because it fails to adequately handle several general arguments raised against it....the endowments which we possess cannot possibly be from ourselves. They point to the ultimate Mind and ground of rationality himself.”¹⁰⁰

9.3 Paranormal Phenomena

Parapsychology is the scientific study of ESP, or extrasensory perception, often considered to be a sixth sense or an alleged power of the mind to attain knowledge in a way similar to but independent of the other five senses. Some of the more common examples of ESP are telepathy (reading others’ minds), clairvoyance (‘seeing’ events not physically present), precognition (foreknowing events before they occur), psychokinesis

¹⁰⁰ J.P Moreland, *Scaling the Secular City* (Grand Rapids, MI: Baker Books, 1987), 103.

(producing effects, usually motion, of objects without physical causation), out-of-body experiences (NDEs, or astral projection) and spiritualism (the ability to communicate with the dead).¹⁰¹ David Ray Griffin argues that paranormal experiences are anomalies for scientific materialism because it cannot explain such events.

James Alcock agrees that paranormal phenomena pose a problem. He believes they “cannot be explained in terms of presently accepted theories of nature because they violate one or more of the basic assumptions, or axioms, of the current scientific worldview.”¹⁰² In other words, such phenomena cannot be deduced from the laws of physics; hence naturalism cannot cover them. These scientific laws limit what the physical universe can and cannot do, and paranormal activity somehow falls outside these limits.

C.D. Broad lists the following four limiting principles of science:

1. General principles of causation (scientific determinism, for every event there is a cause)
2. Limitations on the Action of Mind on Matter (“it is impossible for an event in a person’s mind to produce directly any change in the material world except certain changes in his own brain” – you can move your toes through the workings of your mind but you cannot move the sun)
3. Dependence of Mind on Brain (no body or brain, no mind)
4. Limitations on Ways of acquiring Knowledge (“it is impossible for a person to perceive a physical event or a material thing except by means of sensations which that event or thing produces in his mind”)¹⁰³

In addition to these, there are the limits imposed on our sense data by space and time. Whereas telepathy and clairvoyance transcend limits imposed by space,

¹⁰¹ David Ray Griffin, *Parapsychology, Philosophy, and Spirituality* (Albany: State University of New York Press, 1997), 11.

¹⁰² James Alcock, *Parapsychology: Science or Magic?* (Oxford: Pergamon Press, 1985), 3.

¹⁰³ C.D. Broad, *Religion, Philosophy and Psychical Research* (London: Routledge & Kegan Paul Limited, 1953), 9-12. It is recognized these principles are dated.

precognition transcends limits imposed by time.¹⁰⁴ The dilemma, then, is if paranormal phenomena do not exist, they must either be illusions or the limiting laws are wrong (in which case they can't be considered laws). In other words, either paranormal phenomena are fictitious, since they violate the limiting laws, or they count as anomalies, which serve to undermine those laws. The 'covering laws' Broad identifies may be seen as predetermining what is considered possible or impossible in the world we inhabit. "Any event that is said to cause another event must be related to the causal chain. This principle appears to be violated...by telepathy, clairvoyance, and psychokinesis."¹⁰⁵ If certain paranormal events are unable to be accounted for by known laws of nature, paranormal events are anomalous to current scientific laws. Most naturalistic scientists would not recognize paranormal phenomena as anomalies. Instead, naturalists would be prone to look for evidence of fraud, incompetence, or trickery rather than admit the laws of physics have been broken.

Griffin, like Quine (who extended Duhem's principle beyond scientific beliefs to all beliefs), extends Kuhnian 'paradigms' beyond scientific theories to include metaphysical theories as well. He distinguishes two fundamental approaches to the study of science: paradigmatic thinkers (rationalists), who are theory led, and data led theorists (empiricists), who, as the name implies, are led by data.¹⁰⁶ Theists and naturalists could fall into either category, but are probably paradigmatic thinkers. Paradigmatic thinkers determine *a priori*, on the basis of their paradigm, what is possible and what is impossible, and this in turn determines the evidence which they consider. If the

¹⁰⁴ Griffin, *Parapsychology, Philosophy, and Spirituality*, 90.

¹⁰⁵ *Ibid.*, 23.

¹⁰⁶ *Ibid.*, 26.

paradigmatic thinker in this case is a theist or a naturalist, each will regard paranormal events differently. The naturalist presupposes a causally closed universe that is governed by the laws of nature and natural processes, and thus will be suspicious of any alleged paranormal phenomena which seem to defy them. The theist, on the other hand, will generally be more open to supernatural events, such as the existence of mental telepathy or other psychic phenomena. While such phenomena are regarded as ‘anomalies’ to the naturalist, they may not be anomalies to the theist.

Suppose, for example, we are confronted with a paranormal phenomenon which is clearly visible to all present, such as the Mystery Light of the Upper Peninsula of Michigan, sometimes called the Watersmeet light, which is basically lights in the woods with no known source of illumination that comes and goes every ten minutes. It has no recognized natural explanation.¹⁰⁷ Paradigmatic naturalists such as Quine or Sagan would judge this event by a web of beliefs which are governed by scientific naturalism, and thus attribute these fringe experiences to unknown natural causes at work, such as car headlamps on a nearby highway. A theist, on the other hand, might see the ghost of a railroad brakeman who got drunk and failed to issue a signal that let a train through and ended up killing a number of people.¹⁰⁸ Paradigmatic thinkers give an answer that is consistent with the worldview under which they operate, even if doing so involves pleading ignorance.

¹⁰⁷ Students at Michigan Technological University concluded the lights are caused by car headlights on a nearby highway, which is difficult to accept, as the highway is not behind the lights, and cars don't drive down it with frequent periodicity.

¹⁰⁸ This is the possible supernatural explanation stated on a sign next to the road from where the lights are seen.

Data-led thinkers, on the other hand, “wear their paradigms lightly” and are not bound by any pre-conceived notion of what is or is not possible. Rather, “what is possible is settled by what is actual, and not vice versa.”¹⁰⁹ An empiricist approach must take recalcitrant phenomena such as near-death experiences and the paranormal into account (as long as they are genuine and can be determined not to be a hoax). The empiricist approach tends to be more open-minded in examining the evidence because it tries to do so without any pre-conceived notions or assumptions. Nagel is a good example of a data-led thinker. The virtue of the data-led approach is that it is guided not by a paradigm, but by the evidence, and thus tends to consider the evidence more objectively than a paradigmatic thinker.¹¹⁰ However, the idea of paradigm-free data may not be possible, as Quine, Sellars, and Hanson have all demonstrated that data need to be interpreted, that all facts are theory laden and interpreted through paradigms.

The thrust of Griffin’s arguments are against paradigmatic thinkers in favor of data-led thinkers because the latter are more open to the evidence and less closed-minded. The virtue of this approach is that it recognizes that scientists tend to have a built-in bias against the paranormal. Hence, much of Griffin’s book is a careful analysis of the evidence for life after death, demon possession, reincarnation and apparition sightings (which is much too lengthy to summarize here). Rupert Sheldrake agrees. He thinks that many scientists dismiss paranormal phenomena not on the basis of the evidence, but on the basis of their scientific bias against it, which says it is impossible. Sheldrake says he himself expressed this attitude until he examined the research, which then convinced him otherwise. He cites numerous instances of psychic abilities: of a blind boy who could

¹⁰⁹ Griffin, *Parapsychology, Philosophy, and Spirituality*, 27.

¹¹⁰ *Ibid.*, 98.

read the mind of his mother after she looked at something, of a soldier who felt something was wrong and stopped his Jeep just before it would have fallen off a missing bridge, of animals that seem to know when their owner is about to arrive home.¹¹¹ Sheldrake and Griffin try to show that the data supporting parapsychology cannot be dismissed as easily as a thinker under the spell of scientism thinks it can. In cases in which there is no satisfactory explanation for a perceived phenomenon, sometimes the paranormal explanation is the best explanation, ‘scientifically’ inadequate though it may be. The conclusion that Griffin draws from paranormal events is that they provide substantial evidence for the existence of the soul. He states: “the fact that extrasensory perception occurs and cannot be understood in terms of physical fields suggests that we have a receptive center other than the brain and its sensory organs.”¹¹² Once again, we have anomalous phenomena which theism can ‘cover’ while naturalism cannot.

9.4 Why does the world exist?

William Lane Craig attempts to update the Cosmological Argument by supporting it with recent scientific discoveries. Craig argues science has confirmed one of the basic assertions in Genesis, that the universe was created by a singular event, the Big Bang. In addition, the universe is speeding up, not slowing down, which seems to disprove an oscillating universe that undergoes a series of bangs, expansions, and contractions. Background radiation from the Big Bang discounts the notion of a static, steady state,

¹¹¹ Rupert Sheldrake, *The Science Delusion, Freeing the Spirit of Inquiry* (London: Coronet, 2012), 231-259.

¹¹² Griffin, *Parapsychology, Philosophy, and Spirituality*, 272.

universe that has always existed. Similarly, the Second law of Thermodynamics suggests that the energy of an eternal universe will eventually dissipate and become uniform (the Big Chill). In advancing the Cosmological argument, Craig argues that whatever comes into existence must have a cause to explain its coming into existence. Therefore, the universe must have a cause. Theism has an explanation of this cause, whereas naturalism does not.

The Big Bang suggests the universe was created out of nothing, yet how can one get something from nothing? The Principle of Sufficient Reason states that for everything that happens, there must be a sufficient reason for its happening. Since there is a universe, there must be a sufficient reason for it. Naturalists lack a sufficient reason. Theists can at least give one – God. God is the first cause.¹¹³ Furthermore, the fine-tuning of the constants of physics so as to allow for stars, planets, and life to exist, suggests a designed universe, hence a designer. As a result, Craig concludes, “the most plausible answer to the question of why something exists rather than nothing is that God exists.”¹¹⁴ In addition, Craig believes this conclusion is justified by scientific evidence.

John Locke agrees that even though we lack a sense impression of God, we can infer God’s existence.¹¹⁵ The evidence of God’s existence is found in creation. Any rational creature reflecting upon this may arrive at the idea of God. Just as it is rational to infer an underlying substance supporting primary and secondary qualities, it is rational to infer God as the cause of the world. This inference is justified because of the principle of

¹¹³ William Lane Craig, “The Kalam Cosmological Argument and the Anthropic Principle,” in *Philosophy, The Quest for Truth*, ed. by Louis P. Pojman and Lewis Vaughn (New York: Oxford University Press, 2014), 63-76.

¹¹⁴ *Ibid.*, 79

¹¹⁵ Locke, *An Essay Concerning Human Understanding*, 172 (Bk I, Ch. 23:33).

ex nihilo nihil fit, ‘from nothing comes nothing.’ Locke states: “nothing cannot produce a being; therefore something must have existed from eternity...From what has been said, it is plain to me we have a more certain knowledge of the existence of a God, than of anything our senses have not immediately discovered to us.”¹¹⁶ As a result, a theist has a good answer to Heidegger’s famous question, Why is there something rather than nothing. A naturalist is left with a mystery.

Dawkins responds to this by arguing that the theist only further complicates the issue, since positing God as the first cause only raises the question, What caused God? He states: “as ever, the theist’s answer is deeply unsatisfying, because it leaves the existence of God unexplained...Any God capable of designing a universe...needs an even bigger explanation than the one he is supposed to provide...the designer hypothesis immediately raises the larger problem of who designed the designer.”¹¹⁷ Aquinas’s third argument, the standard theist response, is that the existence of the universe is contingent; it does not have to exist. But given its existence, a being whose existence is necessary is needed to account for the being of something contingent.¹¹⁸ If nature does not exist in virtue of itself, but contingently, then there are “no causal principles...that God cannot interrupt.”¹¹⁹ This explanation is at least consistent with Jesus’s alleged ability to work miracles, whereas the naturalist’s only explanation is: There are no miracles. If you think they did happen, you’re delusional.

¹¹⁶ Ibid., 312-3 (Bk IV, Ch. 10:3,6).

¹¹⁷ Dawkins, *The God Delusion*, 171,176, 188.

¹¹⁸ Thomas Aquinas, *Summa Theologica*, in *Introduction to St. Thomas Aquinas*, ed by Anton C. Pegis (New York: Modern Library, 1948), 26 (Question II, Article 3).

¹¹⁹ David Ray Griffin, *Religion and Scientific Naturalism, Overcoming the Conflicts* (Albany: State University of New York Press, 2000), 26.

While this argument may not appease Dawkins, it nevertheless is an answer to the question, Why does the world exist? The fact remains that the theist has a plausible explanation. The naturalist may posit a multiverse in response, as Hugh Everett did. But again, that only raises the question, What caused the multiverse (unless of course you want to argue ‘it’s turtles all the way down’)? Other naturalist attempts to explain the existence of the world include string theory, a Final theory of everything, and a quantum vacuum in which particles pop into existence by creating a paired particle of anti-matter at the same time, just as digging a hole creates both a pile and a hole.¹²⁰ However, not only are these theories mere conjectures – there is no strong evidence to support any of them – and not only is there no scientific consensus concerning them, but the fact remains that science cannot answer the question why the world exists. The domain of science is the physical world, and the question at issue is, Why is there a physical world at all? The moment before the Big Bang the physical world did not exist, and hence science cannot address this issue, as it is only concerned with studying the physical universe. Theism on the other hand, is able to speak on the matter. It can offer an answer. For Christians, the answer is given in Genesis. In the beginning, God created.

9.5 Free will

Peter van Inwagen arrives at a conclusion about free will similar to the one Kant arrived at in his third antimony. He believes we have two sets of conflicting beliefs: an intuitive belief that we have free will and are able to make free choices, and an empirical

¹²⁰ James Trefill, *The Edge of the Unknown* (New York: Houghton Mifflin, 1996), 9-11.

belief that the physical world is governed by deterministic laws of nature. But determinism is incompatible with free will, van Inwagen thinks. Incompatibilists believe that we must reject one or the other, free will or determinism. Yet good arguments can be made on both sides. Van Inwagen resolves the dilemma by asserting that while he believes in agent causation, i.e., the human ability to make free choices, he does not understand how this is possible. In short, human free will, though real, is a mystery.¹²¹ He states: “I accept this mystery because it seems to me to be the smallest mystery available. If someone believes that human beings do not have free will, then that person accepts a mystery and in my view it is a greater, deeper mystery than the one I accept.”¹²²

William James also believed neither free will nor determinism can be proven or disproven. Does this mean that the result is skepticism? James believes, no, free will seems the better choice. He thinks there are two kinds of people, possibility and anti-possibility people. “To this man the world seems more rational with possibilities in it – to that man more rational with possibilities excluded.” James is a possibility man. He believes that which way he walks home on any given night, by Oxford Street or by Divinity Avenue, is up to him to decide.¹²³ He finds the implications of accepting determinism untenable. He also cites the example of the murderer at Brockton, a man who took his wife to a deserted spot and shot her four times. Dying, she asked him, “You didn’t do it on purpose, did you, dear?” He replied, “No, I didn’t do it on purpose,” and then raised a rock and smashed in her skull. James states he would rather live in the type of world in which one can say, “Such a murder *ought not to* have happened.” In other

¹²¹ Peter van Inwagen, *Metaphysics* (Boulder, CO: Westview Press, 2014), 282.

¹²² *Ibid.*, 284.

¹²³ William James, “The Dilemma of Determinism,” in *Philosophy, The Quest for Truth*, ed. by Louis P. Pojman and Lewis Vaughn (New York: Oxford University Press, 2014), 408-9.

words, a world with free will. In a determinist world, one governed entirely by natural laws, one cannot assert this. The murder at Brockton had to happen, the determinist holds. While free will is not necessarily dependent upon theism, it is more likely that humans are completely determined if metaphysical naturalism is true, since, on naturalism, the mind is reduced to or dependent upon the brain, or is a causally inert epiphenomenon. James' asking which world you would rather live in, a world with determinism or free will, is akin to asking which metaphysic do you prefer, naturalism or theism?

In sum, it can be argued that theism offers a more satisfactory worldview than naturalism because it can 'cover,' i.e., provide an explanation for, near death experiences, the hard problem of consciousness, paranormal phenomenon, the existence of an ordered universe, and the problem of free will. As a result, Dennett's claim that Darwin is a universal acid dissolving any kind of mind-first view of the world is unfounded. Richard Dawkins states: "the true scientists...knows exactly what it would take to change his mind: Evidence....My passion is based on evidence. Theirs [theists'], flying in the face of evidence as it does, is truly fundamentalist."¹²⁴ This idea that all the evidence science musters favors metaphysical naturalism and disproves theism, simply is not true. If anything, the opposite is true. Not only is there evidence for theism, theism can explain many phenomena that scientific naturalism cannot. Jaegwon Kim has stated, "If a whole system of phenomena that are prima facie not among basic physical phenomena resists physical explanation, and especially if we don't even know where or how to begin, it would be time to reexamine one's physicalist commitments."¹²⁵ These

¹²⁴ Dawkins, *The God Delusion*, 19.

¹²⁵ Jaegwon Kim, *Mind in a Physical World* (Cambridge, MA: MIT Press, 1998), 96.

five phenomena demonstrate that naturalism is in need of reexamination and appears to be an insufficient explanation of reality, and to the extent that theism offers a better explanation for them, theism is a more coherent metaphysic.

9.6 Is Evolution better explained by theism or naturalism?

So far, we have cited five phenomena which appear anomalous to the scientific naturalist paradigm but which theism can 'cover.' What about evolution? Is it fatal to theism or naturalism? Let us now examine which model, theism or metaphysical naturalism, better covers evolution. As noted a number of times above, Daniel Dennett and others think evolution is not anomalous to naturalism, and see it as providing evidence against theism. Alvin Plantinga thinks evolution is anomalous to metaphysical naturalism because of the EAAN. His view is that evolution favors organisms constructed for survival, rather than for truth tracking, ones whose cognitive faculties are unreliable. Michael Behe sees evolution as anomalous due to its inability to account for biological complexity. Behe is an intelligent design theorist, but not a theist in the usual sense. However, the views of both can be used as evidence against metaphysical naturalism. Unlike the previous five phenomenon, which were cited as better explained by theism than naturalism, evolution seems equally well explained by both naturalism and theism. In other words, it appears possible that evolution could have occurred through strictly natural processes, or it could have been guided. In other words, evolution is not an anomaly to scientific naturalism. It is 'covered' equally well by either theory; each metaphysical position seems epistemologically satisfactory. However, if Michael

Behe is correct about the complexity of eukaryotic cells, then the evidence might tip toward theism.

As a result, how one interprets evolution, as guided or unguided, often depends on one's previous metaphysical beliefs. If one is a naturalist, one sees an unguided, blind process. If one is a theist, one is more likely to see a guided process. If one accepts many of the stories and claims found in the Bible, it is hard not to see evolution as guided. The Israelites constantly run to Daddy for help, who sends manna from heaven and rescues them when the Amalekites come knocking. The Jews consider themselves a 'chosen' people, which means God looks after and protects them. It appears that having the most powerful force in the universe behind you is an evolutionary advantage, and that having God's blessing rather than curse increases your chances of surviving, being fruitful, and multiplying. Belief in God and worship of God may serve as adaptive behavior which is highly favored by the selective pressures of the environment not only if God exists but even if He doesn't. Even Dennett and Dawkins admit that religion leads to social cohesion, clan protection, and helps one find mates. Of course, the belief that God is the creator of the universe, fine tunes the universe, jump-started life, and takes an active role in it, is more consistent with guided rather than unguided evolution.

If, on the other hand, a person is a metaphysical naturalist, evolution by means of unguided, natural selection is the only game in town. There is no explanation other than natural processes, so there is no explanation other than a naturalistic one for how complex creatures like ourselves have arisen, unless perhaps one wants to argue that extraterrestrials seeded the planet with life. But it is simply dogmatic to hold *a priori* that no explanation counts as an explanation except a strictly natural one.

10. Skepticism and the Limits of Knowledge:

Robert Solomon, in his book *Continental Philosophy since 1750*, raises the question whether many philosophers of the Western tradition, particularly Descartes and Kant, are guilty of what he calls ‘transcendental pretence.’ One way transcendental pretence occurs is when we project subjective knowledge of ourselves to ‘knowledge’ about a universal human essence. In doing so, we assume that the structures and workings of our own minds are universal and necessary to all. Hence the self, in knowing itself, knows all other selves, since everyone is essentially the same.¹²⁶ This is a weak inductive inference, based as it is upon an extremely small sample, only oneself. For such essentialists, the transcendental pretence is not pretentious at all because there is an objective human essence which we share. By knowing ourselves through introspection, we come to know this common human self. Many great thinkers have erroneously held to an essentialism so based. Just because Calvin thought he had a *sensus divinitatis*, does not mean everyone does. Just because Freud was attracted to his mother as a young boy, does not mean that all men have an oedipal complex. Just because Richard Dawkins is an adherent of scientism, does not mean that all non-scientists suffer from “physics envy.”¹²⁷ These are *non sequiturs*.

Existentialists argue that the only ‘essential fact’ about human nature is that we are indeterminate, self-determining beings whose self-essence is chosen rather than

¹²⁶ Robert Solomon, *Continental Philosophy since 1750: The Rise and Fall of the Self* (New York: Oxford University Press, 1988), 3-7, 31.

¹²⁷ Richard Dawkins, *A Devil's Chaplain* (New York: Houghton Mifflin Co., 2003), 6.

given. If there is no common human essence, then all we really know in introspection is ourselves and nothing more. To project our essence onto others is to be guilty of transcendental pretence, and we should not claim to know what others are like simply on the basis of ourselves. Almost all philosophers up to Kant assert that reason is the human essence. But can we know what people are like who make different choices, or have different backgrounds, or are of different races, genders, nationalities, or historical time periods? Empiricists such as Locke and Rousseau argue that at birth the mind is a *tabula rasa*. Our nature is therefore very plastic and is molded by all the unique experiences that collectively constitute our life, including religious experiences or the lack thereof. Charles Mills argues that knowledge of others seems limited to knowledge of one's local culture. A fairly affluent Caucasian in America can never really understand what it's like to be a minority who is discriminated against on the basis of skin color.¹²⁸

Population Genetics comes to a slightly different conclusion. Evolutionists generally think that human nature is determined more by our genes than by our environment. Studies of identical twins suggest that the ratio of what is determined genetically vs the environment, is roughly three to two (or 60% to 40%). IQ tends to be hereditary, but also needs to be exposed to the right environment in order to develop to its full potential. So whether one is 'rational' is more a result of nature (genes) than of nurture, but is influenced by both. Ernst Mayr argues that Darwin's basic insight was that organisms do not consist of invariable essences, but of highly variable populations.¹²⁹ Thus one can argue that each person is a law unto themselves, because they are

¹²⁸ Charles W. Mills, "Non-Cartesian Sums," in *Blackness Visible, Essays on Philosophy and Race* (Ithaca, NY: Cornell University Press, 1998), 1-20.

¹²⁹ Ernst Mayr, *What Evolution Is* (New York: Basic Books, 2001), 75.

genetically distinct. Evolutionary theory seems to confirm Solomon's claim that it is pretentious to argue that all humans are basically the same.

In his novel *Lord of Flies*, William Golding offers contrasting views of human nature as personified in the two groups of boys who are stranded on an island in the middle of the ocean. One group follows Ralph, and the other group follows Jack. Ralph represents the optimistic view of human beings. Ralph wants to maintain a link to civilization, to be civilized, and to be rescued. He has a peaceful, rational, methodical nature and puts the community first. In order to maintain law and order, Ralph argues the boys "gotta work together" and "have to have rules." Jack, on the other hand, is wild, violent, and irrational. He does not want to return to civilization, and leads his gang in chanting 'We like it here, we love it here, we found ourselves a home.'¹³⁰ Jack is bloodthirsty for meat and wants to hunt pig. He paints his face with blood and likes to fight. He does not follow rules but leads through raw power and the arbitrary dictates of his will. He steals and murders to obtain whatever he wants, with no remorse or guilt. Thus, if you extrapolate from Ralph's nature, you get an entirely different view of human nature than if you extrapolate from Jack's. But which archetype is indicative of *the* human essence? In a sense, transcendental pretence and population genetics says both are, and neither is. There is no such thing as an objective, human essence. Human nature is a social construction. Everyone is different; we are neither inherently selfish nor inherently rational and cooperative. Each human being is genetically and experientially a law unto him or herself.

¹³⁰ Found in the 1990 film based on the book.

Kant's pretense to 'know' the nature of every human being, is even more unbelievable given that Kant never travelled more than 50 miles from the town where he was born. The oldest bipedal hominin fossil finds date back to approximately six million years ago. The origin and evolution of life itself on earth began close to four billion years ago. Yet Daniel Dennett and Richard Dawkins claim to know what happened during those four billion years and that it was strictly by means of strictly natural processes. Again, such a claim seems to exceed the boundaries of what is knowable, hence is pretentious. Similarly, is Patricia Churchland really in a position to tell someone who has had a near-death experience and claims his or her soul survived death, that he or she is simply mistaken, when Churchland herself has never had such an experience? Just because Dawkins and Russell are not convinced by the arguments for God's existence, does this mean that others don't find them convincing? Isn't it a logical stretch to get from 'this is how I see the world hanging together', to the normative claim that 'this is how everyone ought to see the world hanging together'?

Nevertheless, Dennett, Dawkins, Churchland, and Harris are self-proclaimed experts, and say, "trust us, we *know*, those other people out there, the laymen, are unschooled in the ways of science and are not experts like us. *They don't know.*" But are there really any experts when it comes to metaphysics? Are there really any authorities on the topic that everyone else must listen to? Or are Dennett and Dawkins pretentious, guilty of hubris, guilty of making arrogant claims to knowledge they do not have? All Dennett is warranted in saying when he claims "Darwin is a universal acid who inverts the Mind-first view of the universe," is that *to him* Darwin is a universal acid. But to claim that Darwin should be seen as a universal acid by everyone else, is to be guilty of

transcendental pretence. If Socrates were alive today, Dennett would likely be targeted by Socrates as a ‘pretender’ to knowledge that he thinks he has, but really doesn’t. To claim one knows the universe was designed or that it is strictly the result of natural processes, is to make arrogant claims to knowledge one does not have.

Dennett, like Kant, claims too much. He claims to have knowledge where knowledge does not exist. If the traditional necessary and sufficient conditions for knowledge are justified true belief, it is clear when we come to metaphysics we have only two of these three criteria satisfied: justification, and belief, but not objective truth. No one can know with objective certainty whether the naturalist or theist metaphysic is true. Good reasons can be given for either, but there is no way of determining the truth value of either naturalism or theism. The method of science, if limited to studying the natural world, cannot provide sufficient justification for metaphysical conclusions. Hence there is no possibility for knowledge here. Kant argued in the antinomies, good arguments can be made for and against metaphysical claims. Hence justification concerning metaphysical beliefs is inconclusive. As the truth values of these claims contradict each other, either one or the other must be true. But which truth value it is, cannot be established.

Kierkegaard famously defined faith as an “objective uncertainty.”¹³¹ But this does not mean there is no evidence at all for religious belief or that all faith is blind. The point is simply that there is no way of distinguishing whether theism or naturalism is true with any kind of certainty. Reasons can be advanced to justify metaphysical beliefs, but ultimately one can never know with certainty which metaphysical beliefs are true.

¹³¹ Soren Kierkegaard, *Concluding Unscientific Postscript*, trans. by David F. Swenson and Walter Lowrie. (Princeton: Princeton University Press, 1974), 182.

Metaphysical beliefs, even more than empirical beliefs, are underdetermined. Evolution can be read as the result of a guided intentional process or as an unguided natural process.

Evolution is thus akin to a Rorschach, or inkblot test. What you see reflects your theories, the patterns of your thinking you use to structure experience, not necessarily ‘what’s out there.’ Here the ambiguous inkblot being studied is nature. How you interpret it is determined by your theory, and multiple theories are capable of ‘covering’ the facts. Underdetermination of theory states that scientific evidence falls short of providing conclusive proof based on the evidence. The fossil record is incomplete. Written history spans only a few thousand years. Yet we are making conclusions over what has took place over millions, if not billions, of years. As Sellars argues in “The Myth of the Given,” the sensory data we do have is in need of conceptual and theoretical interpretation, which is part of the superstructure of belief, and not given in sense experience. Much of evolutionary theory is inferred, not observed (no one has observed the transition from inorganic substances to living beings, or from one species to another). And those facts which we do have are always seen in light of the scientific theories of the day *and* the metaphysical beliefs of the individual scientist. So while Michael Ruse sees no good evidence for theism in evolution, Michael Behe does. They each interpret the facts differently. There are no theory-free ‘facts’ – all facts are theory laden. It is possible to read A.J. Ayer’s account of his near death experience as consistent with naturalism, and as consistent with theism. One person can see a heart attack as strictly natural processes, another can see it as ‘God taking him.’

So knowledge is not really possible here. The best we can do is better or worse belief. One can believe in theism or metaphysical naturalism, and one can provide

support for one's beliefs, but it is impossible to determine objectively the truth of either. This is Thomas Nagel's position in *Mind and Cosmos*. In addition, the issue defies an objective solution because what one sees as 'evidence' is determined or interpreted in light of one's own prior metaphysical views. As a result, any side that claims to *know* that either metaphysical naturalism or theism is true, is making claims which cannot be either sufficiently confirmed or justified to allow any one side to claim victory. As a result, the only possible position one can take is one of uncertainty.

Socrates was said to be the wisest man alive by the Oracle at Delphi. Yet Socrates is famous for stating that "All I know is that I know nothing."¹³² Socratic irony is based upon his claim to be ignorant while clearly knowing much. One way to make sense of what Socrates says is this: Socrates' *wisdom* consists in *knowledge* of his *ignorance*. Socrates does not claim to have knowledge he does not have. So the wisdom of Socrates, consists in recognizing the boundaries of one's knowledge and not violating them. Let us be willing to adopt some Socratic intellectual humility and admit there are limits to what can and cannot be known. The New Atheists claim to 'know' that naturalism is true, that religion is false, and that science delivers the epistemological goods and religion doesn't. But knowledge in this particular case is not possible.

Why set yourself up as an expert, and make inflated claims to knowledge? Because knowledge is power, and with the title of expert comes status, position, and power. One would not pay good money to see a physician if the physician did not know what causes illness, or how to treat illness. One would not go to college if the teachers there had nothing to offer in the way of knowledge or insight. The danger, however, is

¹³² Plato, *Apology*, 29b-c. Translations vary, but this is the general meaning.

that those who are experts in one field think they are experts in all the others. That one is an expert in biology or cognitive science does not make one an expert in metaphysics; specialized knowledge does not entail knowledge outside the specialization. In addition, since power, position, and wealth often accompany specialized knowledge, there are those who will make inflated claims to knowledge in order to advance their career, gain prestige, or set themselves up as an authority so as to bully others into accepting their beliefs. Daniel Dennett and other naturalists refer to themselves as ‘brights.’¹³³ He and other ‘brights’ claim they have solved the mystery of consciousness, know how life originated, and know how the universe came into being. Dennett says to theists, “I for one am not in awe of your faith. I am appalled by your arrogance, by your unreasonable certainty that you have all the answers.”¹³⁴ Yet who is being arrogant here? Is not the claim to have solved the mystery of consciousness arrogant? Is it not arrogant to claim to *know* the process by which life evolved over a 3 billion year time period, and to *know* that at no time ever did an intelligent designer interfere? Is Daniel Dennett omniscient and omnipresent? Did he carefully observe every mutation that ever arose, and is he able to discern that each was strictly the product of natural causes? Is this a claim that *anyone* could possibly claim to know, except maybe God? Who’s being arrogant here? One is reminded of God demanding of Job: “Where were you when I laid the earth’s foundation? Tell me, if you understand. Who marked off its dimensions? Surely you know!”¹³⁵

¹³³ *New York Times* essay, July 12, 2003 ‘The Bright Stuff,’ see also Dennett, *Breaking the Spell*, 21.

¹³⁴ Dennett, *Breaking the Spell*, 51.

¹³⁵ Job 38:2-5.

Dennett, Dawkins, and Churchland are guilty of claiming to *know* more than is possible, in this case, that God does not exist and that evolution is a strictly natural, unguided, blind process. Likewise, Aquinas and Locke are also all guilty of claiming to *know* that God does exist, as is Plantinga in claiming that evolution was probably guided by a divine designer. Knowledge here is not possible because metaphysical beliefs are not capable of being proven true or false. Whether God exists or not, or evolution was guided or not, is a gap in our knowledge that is filled by the prevailing metaphysical position which guides our system of beliefs. At best, we make an educated guess, based upon the worldview that each person thinks is the most coherent and comprehensive. As a result, how we fill in the gaps in knowledge is simply an extrapolation of those theories we already adhere to. But, at least in this lifetime, it is not possible to determine whether metaphysical naturalism or theism is true or false. While science can establish whether or not there is a causal connection between smoking and cancer, it cannot establish why there is a universe, or what happened the moment before the Big Bang. There are no authorities or experts when it comes to metaphysical beliefs.

11. Conclusion

Russell, Dawkins, Churchland, and others, all argue that science is in conflict with religion and triumphs over religion. Evolution is the latest battle in which science has emerged victorious, and is its most commanding victory. The solution to the problem that evolution poses for theism, Dennett and others say, is to abandon any type of Mind-first metaphysic and adopt metaphysical naturalism in its place. But this conclusion is

not warranted. Dennett and others create a straw man of theists by presenting them all as fundamentalists who have no evidence to support their beliefs. The New Atheists further claim that science contradicts theism and supports metaphysical naturalism. As previously argued, using methodological naturalism to justify metaphysical naturalism is not a legitimate inference. Naturalists say only scientific answers arrived at through methodological naturalism count as explanations or justification. If methodological naturalism is the only legitimate method of justification and explanation, and this method precludes from the outset explanations that transcend the physical universe, then the result is a foregone conclusion, all that exists is natural processes. Science studies the natural world. If science restricts itself to providing physical explanations, and God is an immaterial being, isn't the supernatural simply beyond the scope of science to investigate? But if God is the author of creation, isn't the study of nature the study of God's mind? To theists, the real goal of scientists is to think God's thoughts. Science is not incompatible with religion; in fact, science grew out of natural philosophy and theology.

Those who see the Conflict model as governing the relationship between science and religion, adhere to a false model. The Conflict or Warfare thesis of Draper, Russell, and the New Atheists is a caricature, based on cherry picking various passages in the Bible, taking them literally, and thus making the Bible ridiculous and easily knocked down by modern day scientific worldview. Brookes finds all four models of the relationship governing science and religion to be inadequate.¹³⁶ He argues that the best way of viewing the way science and religion interact is the complexity model.

¹³⁶ John Hedley Brooke, *Science and Religion, Some Historical Perspectives* (Cambridge: Cambridge University Press, 1993), 33-42.

Sometimes there is conflict, sometimes there is dialogue, sometimes there is independence, and sometimes there is integration. No one model fits, just like no single model of scientific reasoning captures how scientists do science. David Ray Griffin's position, however, is closer to describing the current debate over the role of evolution in deciding metaphysical standpoints. He sees the relation "in terms of two opposing trajectories: one of increasing conflict and one of convergence."¹³⁷ The New Atheists adhere to increasing conflict and hostility, while Process philosophies see integration and harmony.

Ultimately, science and religion are after the same thing. Both aim to satisfy curiosity, to provide answers to ultimate questions, to investigate why we're here. If truth is one, and both science and religion seek the truth about reality, then they both can be seen to converge. Scientific questioning might lead to theism to solve the questions we face. It has been shown how theism can provide answers to questions science cannot, and in that respect, it might offer up a more coherent worldview. In addition, science is neither unified nor internally consistent. It does not offer up a seamless view of the universe. Relativity contradicts Newtonian physics. Quantum theory contradicts relativity. Quantum theory, chaos theory, and evolutionary theory all fail to yield definite predictions and defy a mechanistic, deterministic view of the universe. Science lacks a firmly established method and even asserting that methodological naturalism is its guiding methodological principle is arbitrary and dogmatic. To divide religion and science into separate domains is arbitrary. How can a scientist tell the difference between a natural and a supernatural process, or a primary and a secondary cause? Is it possible to

¹³⁷ Griffin, *Religion and Scientific Naturalism*, 23.

determine if a heart attack was the result of strictly natural processes and not caused by the divine will?

Similarly, not all theists believe the same things. Theism says there is a transcendent divine being who is the creator of the universe, and omnipotent, omniscient, and benevolent. Christianity sees the revelation of this divine being as being recorded in the Bible. But the Bible should not be taken to be a science manual. Yes, some theists are fundamentalists and fideists and read the Bible literally, but this does not mean that all theists are fundamentalists or fideists or literalists. In view of all this, one might argue that the only plausible, justified model for the relationship between science and religion is the complexity model. Each particular clash between science and religion is so complex and unique that no general conclusion can really be offered up. Consider even the ‘Galileo affair.’ In truth, it was more about who was the governing authority to interpret Scripture than it was about whether the earth revolved around the sun.

In addition, why should we accept the evidentialist objectionist criteria, that only beliefs which are rational and have scientific evidence are justified? Should science as practiced by naturalists have a privileged position in our epistemology? If all there is, is the natural world, the view might be credible. But even then, science is a descriptive enterprise and can offer no guidance on ethics, or tell us how we should live. But if theism is true and there is a supernatural world, then no, science is not the final truth. C.P. Snow’s literary intellectuals derogated science out of Platonic contempt for the material and physical world, in favor of the spiritual. As a result, the “exploration of the natural order is of no interest” to them.¹³⁸ If this world is the world of appearances, the

¹³⁸ C.P. Snow, *The Two Cultures: And a Second Look* (New York: Mentor Books, 1963), 20.

world of Maya – if science studies the shadows on the cave’s wall, the baser of the two Platonic worlds of sensibility and intelligibility, a transient world in which we are merely passing through on our way to an eternal reality – then the science which is grounded in it should not be privileged over the study of that which is higher, eternal, immutable, and the ultimate ground of reality.

Is there any evidence that this world is only the apparent world and not the real world? Is it true that religious beliefs depend upon taking a blind leap of faith for which there no objective evidence? If it is, as Dawkins, et al. say it is, then why choose one religion over another? Why choose Christianity over Islam? Why not Buddhism? Or Hinduism? Or the Greek gods? Clearly, there are reasons one can give for favoring one religion over another. Suppose you were alive and in Jerusalem when Jesus was, and saw and heard him? Would you be convinced he was divine? In the *Philosophical Fragments* Kierkegaard says that if one were to see Jesus alive, all one would see is a man, and nothing would necessarily convince one that this person is God. No scientific test could confirm that Jesus was indeed the Son of God. Some believed it, others didn’t. Is there any way short of dying to determine the truth of this metaphysical belief? Can Science prove or disprove this belief? Concerning evolution, can Science prove that evolution occurred in a strictly naturalistic fashion? Or, that God never intervened in the process? The only correct answer is, no, there is no way to monitor billions of years of the evolutionary past to definitively rule out any kind of divine or supernatural intervention. If there is a being that is powerful and intelligent enough to create the universe, such a being could well interfere in evolutionary processes.

The evidentialist objection that theism lacks any kind of justification is just plain false. There is a wide range of evidence that has been provided, some of which even satisfies scientific criteria and is based upon empirical evidence: religious experiences, Aquinas' Five ways (all are *a posteriori* arguments), Paley's Watch/watchmaker design argument, Collin's Fine-Tuning Argument, Behe's Irreducible Complexity Argument, Locke's argument, and Plantinga's EAAN argument. To the religious skeptic who sees Scripture as simply expressing an outdated and pre-scientific world view, near-death experiences may well be particularly compelling evidence for theism, because they are reported by people who have a modern scientific understanding of the world. Moody reports that many who have them are convinced consciousness survives death and, as a result, have a reduced fear of death. He cites this as confirmation of their reality.¹³⁹

The naturalist's inability to explain various phenomena by means of strictly physical processes casts doubt on it as a credible metaphysic. The naturalist has no recourse to explain an event such as someone walking on water other than to merely say it didn't happen. If too many anomalous phenomena defy reduction and lie beyond the naturalists' ability to successfully explain them, and the theist model, with its expanded view of reality, is successful in accounting for them, then theism is arguably a more satisfactory metaphysic than naturalism. It is difficult to reduce the mind to the brain, love to hormones and neurochemicals, near-death experiences to hypoxia and hallucinations, morality to social values, mathematical and logical laws to tautologies. The law of identity says that if two things are identical, then their properties are identical, yet mental properties differ radically from physical properties. Since consciousness does

¹³⁹ Raymond A. Moody, *Life after Life, The Investigation of a Phenomenon – Survival of Bodily Death* (Atlanta: Mockingbird Books, 1976), 25-76.

not have the same properties as the brain, it must follow ‘the mind \neq brain.’ As a result of this asymmetry, consciousness is and remains a mystery, a Black Box.

When Michael Silberstein proclaims “the philosophy of mind is over,” that Scholasticism has been replaced by the fields of cognitive and neural science, all Silberstein is saying is “I don’t play the game of scholasticism and theism. I play the game of scientific naturalism.”¹⁴⁰ The Churchlands’ name for the language game of scholasticism is ‘folk psychology.’ There is no denying that cognitive and brain science has greatly expanded our knowledge of how the brain affects sense perception, movement, and consciousness. But it does not explain all the various phenomena associated with consciousness? Paul Feyerabend recognizes that philosophers who argue against materialism emphasize the fact that materialists change “the use of ‘mental’ terms, [and anti-materialist philosophers] illustrate the consequences of the change with amusing absurdities...The absurdities show that materialism clashes with our usual ways of speaking about minds.”¹⁴¹ But if ordinary language is an indication of anything, the language game of Scholasticism is embedded in the very way we conceive of consciousness. The fact that few have adopted the type of language game the Churchlands advocate – pure materialism – suggests that the philosophy of mind is not over.

To anyone who has studied the near-death experience literature, it is evident that the language game of Scholasticism is not dead, but alive and well and still being played by the living dead – those who died and are now alive. Naturalists often attempt to

¹⁴⁰ Michael Silberstein and Anthony Chemero, “After the Philosophy of Mind: Replacing Scholasticism with Science,” *Philosophy of Science* 75 (1):1-27 (2008).

¹⁴¹ Feyerabend, *Against Method*, (2010), 229.

justify their position by appealing to Ockham's razor. Quine argues that when unexpected observations or recalcitrant experience force us to reevaluate familiar principles, we should favor "minimum revision" to our core beliefs.¹⁴² Naturalism posits only one basic kind of metaphysical stuff, physical matter and energy. Theism, on the other hand, requires two worlds and two kinds of substances to explain what naturalism explains using only one. Which worldview is more economical? Naturalism. But consider: Thales's theory is that all is water. Modern chemistry states that there are 118 confirmed elements. Ockham's razor would have you side with the wrong theory. Yet no one would use Ockham's razor today to side with Thales.¹⁴³ Simplicity is not the only virtue, even if it is more aesthetically pleasing. And it also seems to be subjective. David Deutsch would have you believe a multiverse is the simplest explanation of why there is a world, while Richard Swinburne would say God is.¹⁴⁴

Russell, Dawkins, and Churchland say they are not content with mystery, or gaps in knowledge. Science, they claim, offers a method to solve the mysteries. Cognitive scientists such as Dennett and Silberstein, and biologists such as Dawkins, perpetrate the illusion that they have access to special, privileged information that the rest of us don't have, and that establishes them as authorities that the rest of us must bow to. Many people don't think so. Science can't cure the common cold, or even tell you what causes a headache. Can Science answer the question, Why is there something rather than nothing? Can science tell us what happened the moment before the Big Bang? Theists claim they have an explanation, but naturalists don't. But even if they do, both sides

¹⁴² Quine, *Word and Object*, 20.

¹⁴³ Jim Holt, *Why does the World Exist?* (New York: W.W. Norton & Co., 2012), 70.

¹⁴⁴ *Ibid.*, 125.

need to admit that when it comes to ultimate metaphysical explanations, claims by both sides are just proposed solutions to gaps in knowledge, mysteries for which knowledge may never be possible. What counts as a good answer here is often determined not by the evidence, but by the theories we already adhere to.

Gaps in knowledge are filled in by theists with God, whereas science fills in gaps by issuing promissory notes to yet unknown natural processes. But theism is not blind or without evidence. It is based upon all of the knowledge one has acquired during one's life, and sees it as the most coherent and comprehensive overall view of reality. While science may offer an adequate explanation of most physical processes, theists see it as inadequate, since it does not cover the whole of reality. Extrapolations from what we do know to 'cover' what we do not know with blank, contentless projections, does not result in knowledge. Whether we are merely bipedal apes with highly evolved brains or beings a little lower than the angels with divinely created souls, is an issue in which knowledge is not possible in this lifetime. Those who claim to know the answer transgress the boundaries of knowledge. If the history of philosophy teaches anything, it is that when it comes to metaphysics no one is in a position to declare victory, or in a position to announce that the mystery has been solved, or that the debate is over.

Metaphysical naturalism is not entailed or strongly supported by evolution. Evolution is a scientific theory. Metaphysical naturalism is a position that cannot be proven or disproven by science, since to use methodological naturalism to prove metaphysical naturalism is circular. Griffin nicely puts the point: "On the one hand the main reason for sticking with the consensus view of materialistic naturalism is that it is said to be adequate to account for all human experiences. On the other hand, this

materialistic view is used as the criterion for deciding *a priori* which alleged human experiences actually occur.”¹⁴⁵ If methodological naturalism does not allow for evolution to be guided by anything other than natural processes, this ensures that only natural processes will be considered. But this does not mean that evolution has not been guided.

Theism is more comprehensive and coherent than naturalism. Theism does not justify itself circularly, as metaphysical naturalism does when it claims methodological naturalism confirms it. Nor is theism simply dogmatically asserted, considering the vast amount of work in natural theology which constitutes an inspection of Clifford’s ship. Theism does not involve an infinite regress, as appeal to a multi-verse, or infinite possible worlds, might. Theism can be supported with foundational beliefs, such as the self-evident idea of a perfect being whose essence is existence, and whose existence is necessary. It can also be supported with noetic religious experience. Inductive inferences from the empirical facts, such as the existence of the universe and the presence of order and design, make theism more likely than not. Abductive reasoning from observed facts to unobserved causes finds theism offers a better explanation of the universe and design than naturalism. Last, naturalism appears internally deficient in that it fails to explain a wide variety of phenomena which serve as anomalies to the naturalistic paradigm. The physicist John Polkinghorne has stated: “Physics is unable to offer a seamless account of what is going on in the world...it has failed to establish the causal closure of the universe on its own physicalist terms.”¹⁴⁶ The reports of many people who have been declared medically dead suggest that consciousness survives death

¹⁴⁵ Griffin, *Religion and Scientific Naturalism*, 71.

¹⁴⁶ John Polkinghorne, “The Universe as Creation,” in *Philosophy of Religion*, ed. by Michael Peterson (New York: Oxford University Press, 2014), 582.

and can continue without the body and that there is more to reality than just the physical world.

It is impossible to determine if evolution proceeded from guided or unguided processes. As was demonstrated in Chapter five, it is impossible to even determine whether an event is of natural or supernatural origination. Metaphysics is not physics, and the rules that apply to physics do not apply to metaphysics. The alleged objectivity that scientists claim to achieve in physics is not possible in metaphysics. It is possible to see the universe idealistically, as a creation, an emanation, as energy, or as strictly physical. But there is no way of determining which it is with any type of certainty. If one is a neurophilosopher like Dennett or Harris, one sees strictly natural processes. If one is a theist, and views Scripture as divinely revealed truths, one sees a world guided by God. However, using Quine's criteria of comprehensiveness and coherence, it is possible to conclude with Thomas Nagel (although not with Quine) that scientism and naturalism cannot explain all of reality. All of the arguments in this study suggest the scales are tipped in favor of theism. But this does not mean that anyone can know, apart from a mystical experience, that theism is true and metaphysical naturalism is false. As Noson Yanofsky concludes, "Unless you are doctrinaire and accept on faith one of the schools of thought, you have to join the rest of us wavering mortals and realize that the fundamental nature of our universe is simply beyond the limits of reason."¹⁴⁷

¹⁴⁷ Noson S. Yanofsky, *The Outer Limits of Reason, What Science, Mathematics, and Logic cannot tell us* (Cambridge, MA: MIT Press, 2016), 212.

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