

Debating Delusion: A Critical Interrogation of Richard Dawkins' New Atheism

Gisèle Pritchard

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Abstract

Debating Delusion: A Critical Interrogation of Richard Dawkins' New Atheism

Gisèle Pritchard

Throughout his career, Richard Dawkins has argued that religious faith is incommensurable with the evidence of Darwinian evolution (Dawkins 2006). In his widely popular book, *The God Delusion*, he cements his perspective on religion: not only is religious faith tantamount to delusion, but it is also dangerous. This thesis aims to render explicit the presuppositions informing Dawkins' work and the Enlightenment debates in which they are so deeply rooted. In particular, this thesis aims to elucidate the ideology and secular worldview, with its attendant critical conception of the religious and religious institutions, that inform Dawkins' conclusions in order to show that they are not simply the obvious product of rational reflection or scientifically informed common-sense, nor are they necessarily a universal interpretation of the immutable evidence of nature, as he seems to claim. This project will interrogate the certainty and authority with which Dawkins presents his view of science and religion, arguing that his "scientific" viewpoint is itself a worldview, it is also constructed, and it has a history and context, which Dawkins too readily glosses over. This thesis maintains the importance of such a critical examination given the serious moral implications of Dawkins' position.

Dawkins' atheism entrenches the idea of an essential divide between scientific reason and religion that it presents as real, historical and natural; and it seeks not only to silence, but to eradicate any other perspectives, effectively rejecting and disregarding a huge segment of humanity and rendering untenable any possibility for inter-religious and pluralistic dialogue.

Table of Contents

Introduction.....	1
Chapter 1: Interpreting Existence – how our worldviews inform and are informed by the way we see the world.....	7
What’s in a worldview?	8
Dawkins’ worldview as it informs The God Delusion.....	13
Is Dawkins a fundamentalist?.....	25
The Historical Roots of Dawkins’ Atheism.....	29
Understanding Utopianism.....	32
The Danger of Utopian Thinking.....	35
Chapter 2: Science and its Limits.....	39
Is The Existence of God a Scientific Hypothesis?.....	39
How do we Define Science?.....	40
What does it mean to talk about the social construction of science?.....	46
Thomas Kuhn and Rethinking the Practice of Science.....	49
Dawkins’ Paradigm.....	57
Dawkins’ Account of the Biological Roots of Religion.....	65
A Critical Examination of Sociobiology.....	77
The Limits of Reductionism.....	80
The Problem of Scientific Imperialism.....	82
Chapter 3: Limited Definitions – Dawkins’ representation of God, Religion, Agnosticism and Atheism.....	84

The Christian roots of Dawkins' Perspective.....97

Pernicious Delusion versus Enlightened Reason.....99

Religion as Sciences' "Other".....107

Conclusion110

Epilogue 112

Works Consulted.....113

Introduction

“The enlightenment is under threat. So is reason. So is truth. So is science, especially in the schools of America. I am one of those scientists who feels that it is no longer enough just to get on and do science. We have to devote a significant proportion of our time and resources to defending it from deliberate attack from organized ignorance. We even have to go out on the attack ourselves, for the sake of reason and sanity.” - Richard Dawkins (<http://richarddawkinsfoundation.org/>)

Richard Dawkins is a well respected evolutionary biologist at the forefront of a very vocal and militant form of atheism often referred to as “The New Atheism” (Haught, ix) (Dawkins himself approves of the title militant atheism as he discusses in a TED talk). The emergence of this new atheist voice is one of the most recent developments in the public debate between science and religion. Often critiqued as a fundamentalist atheism¹, this recent expression of atheism positions itself in direct conflict with religion. Dawkins is one of a number of charismatic advocates for the New Atheism, including Christopher Hitchens, Daniel Dennet, Sam Harris and Bill Maher,² who see their popular writing, and various foundations, such as The Out Campaign³ and the Richard Dawkins Foundation for Reason and Science⁴, as forces for the protection and restoration of reason in a world that is increasingly overrun by superstition and faith. Throughout his career, Richard Dawkins has argued that religious faith is incompatible with the evidence of Darwinian

¹ cf Hedges, Beattie.

² Hitchens, Dennet, Harris and Dawkins are collectively referred to as “The Four Horsemen” within this movement. Hitchens publications include, *God is not Great: How Religion Poisons Everything* (Twelve Books, 2007); Dennet has written *Breaking the Spell* (Viking, 2006), *Freedom Evolves* (Viking Penguin, 2003) and *Darwin's Dangerous Idea* (Simon & Schuster, 1995); Harris has published *The End of Faith* (Norton, 2004) and *Letter to a Christian Nation* (Random House, 2006); and Bill Maher released the film *Religulous* (TVA Films, 2008)

³ Aimed at raising atheist consciousness and solidarity. (<http://outcampaign.org/>)

⁴ A British foundation with a sister organization in the U.S., it is committed to defending reason from deliberate attack from organized ignorance. (<http://richarddawkinsfoundation.org/>)

evolution (Dawkins 2006). In his widely popular book, *The God Delusion* (Bantam Press 2006) (with sales upwards of 1.5 million copies as of November, 2007), he cements his stance on religion: not only is religious faith tantamount to delusion, but it is also dangerous. Dawkins' work can seem very compelling to those who reject the chauvinism, intolerance, anti-intellectualism and self-righteousness of religious fundamentalists and it has found a certain acceptance with such an audience.

What might not be immediately apparent, however is the degree to which Dawkins himself is open to every one of his critiques. Dawkins fails to recognize the cultural specificity of his worldview – he fails to recognize that his “scientific” viewpoint is itself a worldview, that it is also constructed, and that it has a history and context. It is not the necessary, universal interpretation of the immutable evidence of nature, as he seems to claim. Nor is it simply the obvious product of rational reflection, or scientifically informed common-sense.

Dawkins' stated goals in writing *The God Delusion* are to convert people to atheism, to demonstrate how irrational faith is, and to convince his audience that labeling a child with a religious affiliation should be considered a form of child abuse. The conflict at the heart of *The God Delusion* - a clash between religion and science – is presented as real, historical and natural. As we will see, this is only one way of constructing the relationship between religion and science. This thesis proposes that the actual struggle informing *The God Delusion* is a battle of two fundamentalisms⁵: atheist and religious. More than anything else, this struggle reflects an encounter between two conflicting but related utopian ideals. When seen in this way, the model of conflict is

⁵ Dawkins explicitly refutes this claim (Dawkins 2006, 282). Chapter 1 will expand on both the support for this claim, and on his refutation.

indeed inherent and necessary. There is no room for two universal standards of good and evil. There is no room for two exclusive claims of truth. These worldviews are in conflict because they are essentially the same project with a slightly different content and both attempt to subjugate all other perspectives.

From the perspective of the New Atheists, either you are good, accept the logic and rigour of science, and subscribe to the type of atheism they uphold, or you are evil, deluded, and irrational. Ultimately, this thesis maintains the importance of examining the worldview underlying this perspective, given the implicit and explicit moral implications in Dawkins' work, namely that faith in god is the cause of much of the world's violence, both physical and psychic, and that morality not only does not require belief in God, but benefits from atheism. In clarifying the ideology and secular worldview informing *The God Delusion*, I aim to critique the unnecessarily and dangerously polarized representation of religion and science promoted by the New Atheists such as Dawkins. Their view of religion renders untenable any possibility for inter-religious and pluralistic dialogue.

Contribution to scholarship:

Critical responses to *The God Delusion* have tended to fall into one of two broad categories: the first could be called the high academic response, and the second is the response from people of faith.

Writers in the first group have presented a variety of critiques: Tina Beattie draws on her background in gender and critical theory to contextualize and critique the New Atheism and Mary Midgley provides an in-depth discussion of philosophical ideas informing popular science. She discusses how scientific discourse - specifically

evolution - is part of a greater complex of myths and narratives which function as vehicles for meaning, calling into question the conviction that scientific theories are mere objective fact.

Writers in the second group, including John Haught, Alister and Joanna McGrath and Joseph Poulshock, focus on making a case for God by demonstrating the plausibility of the existence of God, or the rationality of religious faith.

I submit that neither camp has succeeded in offering a straightforward, systematic critique of Dawkins' project that would engage his avid readers. The academic response, for instance in the work of Tina Beattie, presumes a working understanding of language and concepts that are not necessarily familiar to a general audience. And many readers may be predisposed to mistrust these concepts given Dawkins' rejection of postmodernism, dismissing Michel Foucault, Roland Barthes, and Julia Kristeva as "icons of haute francophonyism" and his total refusal of even the appearance of relativism (Dawkins 2006, 347). And those writing religious apologetics are starting from a position of faith. To use the language of Dawkins, they are themselves deluded, and thus not necessarily a credible source of critique. Furthermore, those writing from a faith-based perspective are often attempting not only to justify their own beliefs, but to present a persuasive argument for faith to the reader, or their writing is intended for a religious audience. In either case, their critical perspective is likely invalidated for many of Dawkins' fans.

Many reviewers of *The God Delusion*, including Fern Elsdon-Baker, Alister and Joanna McGrath, Mary Midgley and Allen Orr have shared a sense of confusion about Dawkins' motive. They wonder why an educated person who seems to know nothing

about religion, aside from a limited understanding of some fundamentalisms, has felt so compelled to write and talk about it so much, and with such vitriol. His rhetorical style is a mixture of argument and scorn, laden with insult, contempt and disdain, not only for religious people, but for scientists who disagree with him and anyone who might refute his approach.

These reviewers have also questioned his approach. Although he values the scientific method as the only truly legitimate approach to knowledge and understanding - Dawkins claims that as a scientist, he believes exclusively on the basis of evidence - he fails to hold his work in *The God Delusion* to the minimum standards of the scientific method. He positions himself as an authority on nearly everything without presenting supporting evidence. *The God Delusion* is very clearly not an academic book. Instead, it is more like a sermon or work of popular apologetics, complete with stories, illustrations and quotations mixed with personal anecdotes and digressions. Indeed, Dawkins relies more on anecdote in *The God Delusion* than actual evidence. And the evidence he does provide is frequently problematic.

Methodology:

This thesis is an attempt to address those questions in a way that will engage the very people that are (at least initially) persuaded by Dawkins' view of religion: secular atheists and agnostics. The aim is to will critique Dawkins' representation of both science and religion in *The God Delusion* in a way that is accessible to a general (thus not necessarily academic) audience, although I have kept a general undergraduate audience particularly in mind. I am in the unique position to undertake such a project given my

graduate studies in religion and previous undergraduate work in Environmental Science (BSc. McGill University, 2004).

While there are a number of possible approaches, I will use the concept of “worldview” in order to offer a systematic discussion aimed at uncovering the ideological underpinnings of Dawkins’ thinking. I do so to critically examine his classifications and ultimately call into question the certainty and authority with which he presents his view of science. Although this discussion is particularly well suited to post-modern analysis, I have chosen not to present an explicitly post-modern critique, because I intend to demonstrate that Dawkins’ perspective can be critiqued in terms that he would accept.

Considering the ideological underpinnings of his work allows us to understand *The God Delusion* in a way that may not necessarily be evident from a cursory reading. When considered in the context of his worldview, it makes sense that Dawkins would structure the discussion between religion and science as an intractable conflict. It also contextualizes his use of such a narrow and limited definition of religion to rail against. And finally, it helps us understand what is really at stake for Dawkins – illustrating why what Dawkins’ presents initially as an epistemological problem quickly reveals itself to be, more than anything else, for him, a moral problem – a question of good and evil. As a result this thesis will also demonstrate that the moral dimensions of Dawkins’ work have some very real, disturbing implications which must be carefully examined.

Chapter summaries:

Before describing Dawkins’ particular ideological commitments, in the first chapter, I will familiarize the reader with the concept of “worldview” to demonstrate how our knowledge of world and the meaning we ascribe to it both inform and are informed

by our worldviews. In particular, I will show that Dawkins' worldview, like all worldviews, is multi-faceted, a type of Universal Darwinism⁶ informed by secular utopian thinking rooted in an Enlightenment faith in the moral perfectibility of humankind through the power of scientific knowledge over superstition. After describing the particular contours of Dawkins' worldview - including its historical origins - I will provide a critical discussion of utopian ideologies in order to highlight their inherent and potentially dangerous totalitarian aspects, and lay the foundation for a critical appraisal of Dawkins' assertion that atheism is better for society than religion. Having provided this framework of descriptive definition in the first chapter, in the second chapter I will move on to an analysis of Dawkins' construction of science in *The God Delusion*. His representation of science presents it as a single coherent discourse that objectively reveals natural truths. A discussion of the social construction of scientific knowledge will call this representation into question with. I will also evaluate Dawkins' assertion that the existence of God is a scientific hypothesis, and that science can and should evaluate all truth claims. The third chapter will focus on a critique of his representation of religion, examining the way his presuppositions and worldview inform the way he defines God, religion, agnosticism and atheism. After providing alternate ways of thinking about these concepts, the chapter will evaluate his assertion that religion is not only a delusion, but is a *pernicious* delusion (Dawkins 2006, 31).

Chapter 1: Interpreting Existence – how our worldviews inform and are informed by the way we see the world

⁶ A term coined by Dawkins in 1983. "Universal Darwinism" in *Evolution for Molecules to Man* ed. D.S. Bendall. Cambridge University Press.

This chapter begins by introducing the reader to the concept of worldviews, and critique the confidence with which Richard Dawkins' presents his particular view of the world as objective truth. This discussion frames our systematic description of his ideological commitments, before moving on to establish the historical contingency of his worldview and providing a critical discussion of some of its aspects. Before proceeding, it is important to note that attempting to describe a person's worldview is difficult. It is an exercise in interpretation, and it is important to guard against over-extrapolation or overconfidence in the veracity or fixity of that interpretation, especially when the description is mostly based on a single work. The discussion of Dawkins' worldview that follows is based on his writing in *The God Delusion*, and while it would be more accurate to describe it as "Dawkins' worldview in *The God Delusion*," for brevity's sake of, I will frequently be referring simply to "Dawkins' worldview". This discussion is aimed at an analysis and critique of how science, religion and their inter-relationship are defined in *The God Delusion*. The presentation of his worldview will limited to a discussion of the aspects of his understanding of the world that contribute to these categories.

What's in a worldview?

Worldviews can be broadly defined as a general philosophy of life.⁷ As such, they make up the totality of our beliefs about reality. More specifically, worldviews

⁷ We will be using William Cobern's adaptation of the Kearney logico-structural model of worldviews as the foundation of our definition. Kearney's model, which is based on anthropological research, is developed in his book, *Worldview* (1984). Cobern's model differs from Kearney's in rejecting the Marxist and materialist tenets in Kearney's writings. Cobern asserts convincingly that Kearney's model is not inherently Marxist, nor is it essentially materialistic (two major critiques of this model), but that these tendencies are a result of Kearney's view of mechanism as not merely a method, but as a metaphysic (Cobern, 3). As a Professor of Biological Sciences and Science Education and the Director of the Mallinson Institute for Science Education, Cobern has adapted Kearney's worldview model to form part of a mechanistic method for exploring the interaction between a student's existing worldview, and scientific worldviews. His use of Kearney's worldview model is concerned with epistemology, not ontology

make up the basic, culturally-dependent, organization of the mind. Functioning as mental frameworks, they manifest themselves as a set of assumptions which predispose us to feel, think and act in certain ways. Worldviews are the matrices of thought, conscious and unconscious, that provide the tools with which we decide what is important and what can be ignored (Midgely 2004, 4). Worldviews are the interpretive frameworks that order a person's existence into a meaningful world, and they do so by performing five functions.⁸

The first function is to explain both how and why things are the way they are, as well as why they continue in the way they do. The second is to validate the goals, institutions and values of a society and to provide a means for evaluating both outside influences as well as activities and attitudes within society. Thirdly, a worldview both encourages and prescribes behavior –it supports people at times of anxiety or crisis by providing security and reinforcing behavior. As its fourth function, a worldview allows us to order and systematize our sense perceptions. And finally, worldviews perform an adaptive function by serving to reconcile differences between old understandings and new information in order to maintain a state of equilibrium. Worldviews are thus both stable and resilient (Cobern, 3). Thus, a worldview defines the self by setting the boundaries of who and what the individual is. At the same time, by determining everything that is not the self, it also defines the 'other', as well as our relationships and

(Cobern, 3) and as such is well suited to our discussion of how worldviews influence our understanding of the natural world. According to Micheal Kearney, all human activity proceeds from a cognitive root. Although this assumption could be called into question, this model remains useful as a framework for a systematic discussion of the influence of Dawkins' ideology on his work. As Cobern cautions, "it is important to note that the concept of worldview has no common sense counterpart. Any worldview model is an abstraction derived from certain observed phenomena, but is not a picture of those phenomena" (Cobern, 3).

⁸ When studied from the perspective of anthropology.

responsibilities towards all that is ‘other.’ It shapes our view of the universe and our conceptions of time. It influences our norms and values (Cobern, 3).

A worldview is formed as the result of our need to relate to the outside world. Humankind’s experience is useless unless interpreted. While a worldview consists of the basic assumptions and images that provide a more or less coherent way of thinking about the world, this view of the world is not necessarily accurate, (Kearney, 41) and it is not the manifestation of some universal truth. Rather than providing an accurate depiction of reality, worldviews are what make it possible for people to conceptualize what reality *should* be like. The evidence of daily life is understood according to this framework (Cobern, 3).

Beginning in childhood, we interact with our physical and social environments. Through these myriad interactions, worldview presuppositions are unconsciously constructed in a process that occurs over an extended period of time with the childhood years being the most important. Formal education also contributes to the development of a worldview (Cobern, 4). In adulthood, the malleability of one’s worldview begins to decrease; it becomes resilient in the face of change, thereby providing adults with cognitive stability (Cobern, 4). Worldviews are robust, able to accommodate the bulk of our experiences, yet flexible enough to negotiate paradox or evidence that is contrary to some previously held view without crumbling. Although an adult’s worldview presuppositions are strongly held, they are capable of changing. The strength with which a mature worldview is held appears to be inversely related to the degree of the surrounding culture’s heterogeneity. The more heterogeneous, the less strongly a worldview tends to be held (Cobern, 4).

When thinking about worldviews, we usually think about groups, not individuals. The concept of a worldview is most often associated with civilizations, religions and eras, such as a Western worldview, a Christian worldview, or a medieval worldview. Contrary to Dawkins' portrayal of religion as *the* most powerful force acting on an individual (e.g. Dawkins 2006, 303), it is but *one* of many factors that influence the way we see the world. And while religion can be a powerful force shaping the contours of a worldview, its influence varies depending on the cultural context, and in some cases, it is almost impossible to distinguish from other factors. Given that a worldview may be expressed more or less systematically in cosmology, philosophy, ethics, religious ritual, and scientific belief, it is sometimes more helpful to think of religion and philosophy as part of the specific content of a worldview (Cobern, 3). We only have to consider the wide variety of Christian responses to an issue such as evolution - from complete rejection to complete acceptance - to see that Christianity functions as part of a larger network of concepts and norms.

While it is commonplace to talk about various different religious or philosophical worldviews, particularly those that are clearly distinct from mainstream Western culture, it is less common to discuss scientific worldviews. This might be in part because the 'scientific' worldview is the *defacto* worldview of mainstream Western culture. And rather than being understood as a particular worldview, it is often understood as 'seeing the world as it really is;' the normative framework by which other worldviews are identified and evaluated. Furthermore, even when the scientific worldview is identified as such, it is frequently assumed that there is a single, unified scientific worldview, in large part because the popular perception of science is that there is a single, uncontested

discourse that we call 'Science'. We are fond of saying, "science says" or "science does" losing sight of the fact that science doesn't say or do anything. Science is a set of methods and practices by which we seek to answer certain questions and produce certain types of knowledge. Science as a field of study has a history; it is made up of a variety of subjects as well as a variety of cultures and philosophies with different values and ideals. As such, it is compatible with a number of worldviews, but does not represent the objective truth about the world.

The modern scientific worldview is a uniquely Western phenomenon that came out of intellectual tumult of the 16th, 17th and 18th centuries in Europe. The mechanistic view of the universe, exemplified by Descartes, and empiricism, exemplified by Bacon, and developed by the experimental work of Newton and Boyle became the basis of modern science. As will be considered in greater detail later in the second chapter, the scientific worldview as commonly presented is a reductionist worldview that sees the explanation of the whole in the parts, and considers machine-type analogies appropriate for natural phenomena (Cobern, 4). Though twentieth and twenty-first century physics is modifying the classical scientific worldview, it remains a thoroughly empirical view that stresses the importance of testable hypotheses concerning natural causes. Since its inception, modern science and its attendant worldview have slowly spread beyond European borders.

The emergence of science as an independent discipline requires a scientifically compatible worldview, and not all worldviews are entirely consistent with scientific thinking (Cobern, 4). For example, people of nonscientific, non-technological societies often have worldviews that are incompatible with it. Even in highly scientific cultures,

there are some whose worldviews are not entirely reconciled with a scientific worldview, such as those who find their religious beliefs are contradicted or disputed by the findings and conclusions of modern science. However, though their worldviews might be partially or totally incompatible with scientific thinking, this is not to say, as Dawkins does that these individuals are irrational. Rather, their rationality is based on a different worldview, which results in nonscientific ways of thinking.

The concept of rationality is a complex issue and a full discussion is beyond the scope of this thesis. But in brief, to be rational means to think and act with reason, and to be consistent with or based on logic. Thoughts or actions that are consistent with one's worldview, therefore, are rational. Scientific thinking, while employing logic and reason, is not the single definition of rationality. As there can be great discrepancies between worldviews: what is considered rational in the context of one worldview might seem completely irrational when evaluated according to the presuppositions of another. Some, like Dawkins, see replacing the worldview of nonscientific people as the ultimate goal of science education. If he is to be believed, this is the only option. But there is another perspective, one that might build bridges between the enterprise of science and nonscientific worldviews (Cobern, 5). Instead of converting or colonizing these worldviews, this perspective seeks to reconcile them with scientific thinking while continuing to recognize that the those functioning within these worldviews are fully rational, intelligent human beings with an alternate - not deluded - way of seeing and interpreting their experience.

Dawkins' worldview as it informs *The God Delusion*

Dawkins' worldview is rooted in utopian ideology and a nineteenth century development of the Enlightenment project, elements that result in its fundamentalist character. His perspective in *The God Delusion* can be somewhat artificially summed up under the title: Utopian Universal Darwinism - although properly speaking, the 'Darwinism' informing his worldview should be more correctly be called 'neo-Darwinism' (a term we will discuss in greater detail in chapter two) as it draws heavily on modern genetic theory. Universal Darwinism refers to the application of the ideas and theories of Darwinian evolution beyond their original sphere of organic evolution on earth. In *The God Delusion*, it is Dawkins' goal to explain the biological roots of religion and human morality with reference to Darwinian evolution, reducing them to a misfiring of otherwise beneficial adaptations and a sophisticated form of selfishness, respectively. To explain the origin and spread of particular beliefs, Dawkins proposes his "meme theory", a Darwinian approach to understanding mind, language and culture (we will elaborate on these ideas in the second chapter).

Universal Darwinism is a form of scientific naturalism, an extension of an enlightenment conception of science that achieved prominence in the early nineteenth century and gained importance throughout the Victorian period. This epistemological view undertakes explanation exclusively by reference to natural causes and events, holding that matter is the fundamental reality of the universe. Scientific naturalism asserts the universal scope of the scientific method, the universality of natural laws and the adequacy of science to provide a universal, deterministic cosmology beyond which no further knowledge or way of knowing exists. It denies teleology, metaphysics and miracle, thus effectively excluding and rejecting clerical authority and the credibility of

religious knowledge (Barnes and Shapin, 93). Dawkins takes a reductive approach to scientific explanation, believing that the whole can be understood in terms of its component parts. Like all reductionists, he believes that science should consist of a careful investigation of material/natural phenomenon in an attempt to break them down into their simplest, most basic parts. Once the phenomenon has been reduced to its constituent units, the scientist then studies how these units combine together to produce more complex phenomena. Thus, complex phenomena are reduced to a combination of far more simple, basic interactions. This methodology is rooted in the belief that nature is organized by simple universal laws of physics and that any phenomenon can eventually be reduced to these laws, and therefore explained. His work in *The God Delusion* combines a reductionist perspective with an assertion of the omniscience of science, extending scientific naturalism beyond material phenomena to cultural and psychological phenomena. Dawkins believes that the scientific method is the only reliable path to knowledge and he sees atheism as a necessary and obvious result of a scientific worldview. He also holds that this is the only legitimate perspective for a scientist. As evidenced in *The God Delusion*, Dawkins cannot tolerate alternative perspectives from other scientists. He claims that those with a different perspective are being disingenuous, dishonest, or have ulterior motives like greed, especially with respect to receiving a Templeton grant, which is awarded for research in science and religion (Dawkins 2006, 19), (Dawkins 2006, 153). He suggests that “great scientists of our times who sound religious usually turn out not to be so when you examine their beliefs more deeply,” regardless of what these scientists themselves have to say about their beliefs (Dawkins 2006, 14). He holds the same view of scientists who suggest science should be agnostic

about questions such as the existence of God, calling them “The Neville Chamberlain School of Evolutionists.” (Dawkins 2006, 66). He proposes that they are taking this position not as an epistemological position, but as a political position in response to “the threat of populist creationism,” arguing that they are “bending over backwards” to appeal to mainstream religion (Dawkins 2006, 66).

In his review of *The God Delusion*, evolutionary geneticist, H. Allen Orr suggests that one of the most interesting questions about Dawkins’ book is *why* it was written. “*Why* does he feel he has anything significant to say about religion and what gives him the sense of authority presumably needed to say it at book length?” (Orr, para 5).⁹ The purpose of this thesis is to provide a possible, systematic answer to that question. I believe that Universal Darwinism accounts for the ‘what’ of *The God Delusion* – the attempt to evaluate all knowledge claims using the methods of scientific inquiry and the inclination to apply the concepts of Darwinian evolution to explain cultural phenomenon. And the utopian/fundamentalist tendencies account for the ‘why’ of *The God Delusion* – why it is written in the tone that it is, why epistemological issues take on moral and ethical implications, and why Dawkins constructs the relationship between religion and science as one of immutable conflict.

Perhaps the best place to start an in-depth discussion of Dawkins’ worldview is with his response to the criticism that his perspective is “nineteenth century”. This criticism arose in the context of a conference on science and religion held at Cambridge

⁹ Orr frequently reviews books that seek to link biological ideas to religion or philosophy - this aspect of his work was specifically cited in his appointment as Shirley Cox Kearns Professor

University and sponsored by the Templeton Foundation.¹⁰ According to Dawkins, he was the 'token atheist' among eighteen invited speakers (Dawkins 2006, 153). As Dawkins tells it, he challenged the theologians to answer his assertion that "a God capable of designing a universe would have to be complex and statistically improbably" (Dawkins 2006, 153). Although he admits the possibility of a superhuman designer of the universe, he asserts that it would "most certainly not be a designer who just popped into existence or who always existed." He goes on to say that, while he doesn't for a moment believe that our universe was designed, if it was, "and *a fortiori* if that designer reads our thoughts and hands out omniscient advice, forgiveness and redemption, the designer himself *must* (my italics) be the end product of some kind of cumulative escalator or crane, perhaps a version of Darwinism in another universe" (Dawkins 2006, 156). According to Dawkins, the theologians (he doesn't specify who they were) responded by suggesting that he was "brutally foisting a scientific epistemology upon an unwilling theology" (Dawkins 2006, 153). He was asked "who was he to dictate to theologians that their God had to be complex?" and "who was he to say that rational arguments was the only admissible kind of argument?" The theologians claimed that there were other ways of knowing that must be deployed to know God, chiefly a personal

¹⁰ The mission of the Templeton Foundation is to serve as a philanthropic catalyst for discovery in areas engaging life's biggest questions. These questions range from explorations into the laws of nature and the universe to questions on the nature of love, gratitude, forgiveness, and creativity. Our vision is derived from Sir John Templeton's commitment to rigorous scientific research and related scholarship. The Foundation's motto "How little we know, how eager to learn" exemplifies our support for open-minded inquiry and our hope for advancing human progress through breakthrough discoveries (<http://www.templeton.org/>). The Foundation's views on the connections between religious and scientific inquiry and their awarding of significant grants for scientific research have led to criticism from some within the scientific community for promoting an agenda of reconciling religion and science and it is suggested that Templeton's money is used to influence scientific research towards a convergence between science and religion (eg Richard Dawkins; Peter Woit, a mathematical physicist at Columbia University; John Horgan, a science journalist; and Sean M. Carroll, a cosmologist at the University of Chicago).

subjective experience of God (Dawkins 2006, 154). Dawkins rejects discussions about subjective experiences of God, reducing them to illusion and hallucination. He complains that scientific arguments that he is accustomed to deploying were deemed inappropriate since the theologians maintained that God lay outside of science; and that the theologians were defining themselves into an epistemological safe-zone where rational arguments could not reach them because they had “declared by fiat that it could not” (Dawkins 2006, 154). He goes on to say,

The last ditch defense by my critics in Cambridge was attack. My whole worldview was condemned as nineteenth-century. This is such a bad argument that I almost omitted to mention it. But regrettably I encounter it rather frequently. Needless to say, to call an argument nineteenth-century is not the same as explaining what is wrong with it. Some nineteenth-century ideas were very good ideas, not least Darwin’s own dangerous idea...In any case, I know the ‘nineteenth-century’ taunt of old. It goes with the ‘village atheist’ gibe. It goes with ‘Contrary to what you seem to think Ha Ha Ha we don’t believe in an old man with a long white beard any more Ha Ha Ha.’ All three jokes are code for something else, just as when I lived in America in the late 1960s, ‘law and order’ was politicians’ code for anti-black prejudice. What, then, is the coded meaning of ‘You are so nineteenth-century’ in the context of an argument about religion? It is code for: ‘You are so crude and unsubtle, how could you be so insensitive and ill-mannered as to ask me a direct, point-blank question like “Do you believe in miracles?” or “Do you believe Jesus was born of a virgin?” Don’t you know that in polite society we don’t ask such questions? That sort of question went out in the nineteenth century.’ But think of why it is impolite to ask such direct, factual questions of religious people today. It is because it is embarrassing! But it is the answer that is embarrassing, if it is yes. The nineteenth century connection is now clear. The nineteenth century is the last time when it was possible for an educated person to believe in miracles like the virgin birth without embarrassment...Hence, if somebody like me insists on asking the question, it is I who am accused of being nineteenth-century. It is really quite funny if you think about it. (Dawkins 2006, 156-157)

Dawkins is right, calling an idea nineteenth-century is not the same as saying what’s wrong with it, and not all nineteenth-century ideas are bad. So what does it mean to call his worldview nineteenth-century, and why is this intended as critique? The meaning,

coded or otherwise, of calling someone nineteenth century in the context of this argument about religion is that, among other things, they are reproducing the nineteenth century model of inquiry in which imperialism and scientific rationalism go hand in hand. Contrary to Dawkins suggestion, the problem is not necessarily with the questions he asks of religious people, but lies instead in the *way* in which he asks them. He is perpetuating the scientific imperialism of the nineteenth century which sought to extend the reach of the scientific method beyond the study of the natural world and turned its thoroughly unsympathetic gaze on human feeling and behavior, objectifying and belittling large segments of the population under the auspices of scientific investigation, treating them as less than fully human. And this is decidedly not funny, if you think about it.

The influence of nineteenth century thought on Dawkins' work is nowhere more striking than in his construction and definition of religion. He presents religion as though it was a single, unitary object, alternately rejecting, ignoring or collapsing all diversity. Although he indicates that he is mostly talking about the three Abrahamic faiths, and Christianity in particular, because these will be the traditions most familiar to his readers, he over-extrapolates, arriving at conclusions about all religions on the basis of limited insight from these traditions – generalizations that are rarely justified or explained beyond his assertion that they are all just superstitious nonsense. His understanding of religion is clearly informed by his own religious experience (an idea that we will expand on in the third chapter), and a limited grasp of the most common forms of extremism, which he believes can stand in the place of any engagement with religious thought and, more surprisingly, any serious engagement with the considerable academic scholarship

on religion. He explicitly rejects the notion that he should deal with theology and indicates that Darwinian thinkers like himself are uninterested in any explanations for the origin of religion that are not based on natural selection, such as political or psychological explanations (Dawkins 2006, 34). However, much scholarship on religion is not limited to, or even particularly interested in the origins of the religion. Dawkins rejects all contemporary scholarship on religion, including the contributions of anthropology, sociology, psychology, history, and philosophy in favour of the nineteenth century religious theories of James Frazer,¹¹ Max Weber¹² and William James.¹³

In her critical rebuttal, Catholic scholar Tina Beattie contends that in order to understand “how ‘religion’ functions in the world according to Dawkins,” we must situate him in the context of nineteenth-century scholarship and imperialism in which cultures dominated by a white male elite remain caught up in a territorial battle of colonization and conquest (Beattie, 46). She argues that New Atheists such as Dawkins, in their uncritical engagement with outmoded theories of religion, are recapitulating the perspective of the Victorian scholars who saw themselves as beacons of progress in a world of seething ignorance and barbarism (Beattie, 46). Believing themselves to be at the highest level of knowledge and civilization, those early scientists sought an objective vantage point from which to study and categorize the ‘inferior’ races and tribes they were

¹¹ Sir James George Frazer (1 January 1854, Glasgow, Scotland – 7 May 1941, Cambridge), was a Scottish social anthropologist. His most famous work, and the one Dawkins cites, is *The Golden Bough* (1890), in which Frazer documents and describes similar magical and religious beliefs from across the globe.

¹² Max Weber (21 April 1864–14 June 1920) was a German lawyer, politician, historian, political economist, and sociologist, who profoundly influenced social theory

¹³ William James (January 11, 1842 – August 26, 1910) was an early American psychologist and philosopher, trained as a medical doctor. He also wrote influential books on the psychology of religious experience and mysticism.

discovering, championing the burgeoning, ‘scientific’¹⁴ disciplines of anthropology and psychology. These scientists believed that their work was necessary to understand and speed along what they saw as the natural evolution of human societies from primitive savagery to civilization for the benefit of all mankind. The evolutionary view of religion that Dawkins refers to was popularized in the nineteenth century by men like James Frazer (Dawkins 2006, 32). Frazer posited that human belief progressed through three stages: primitive magic, replaced by religion, in turn replaced by science. The notion that religion is a primitive version of science was popularized in late nineteenth century in Frazer’s, *The Golden Bough*. In this work, religion and superstition were understood to be rooted in fear and ignorance, vestiges of the primitive stages of human development that should and would disappear with the advance of knowledge. These scientists believed that their work had a moral as well as scientific purpose. Frazer asserts that,

the comparative study of the beliefs and institutions of mankind is fitted to be much more than a means of satisfying an enlightened curiosity and of furnishing materials for the researches of the learned. Well handled, it may become a powerful instrument to expedite progress if it lays bare certain weak spots in the foundations on which modern society is built – if it shows that much which we are wont to regard as solid rests on the sands of superstition rather than on the rock of nature (Frazer, 4).

Dawkins echoes the core of this sentiment in *The God Delusion*. And, although he mocks the religious beliefs described in *The Golden Bough*, he does not question Frazer’s conclusions or his credibility (Dawkins 2006, 36). Beattie argues that, like those nineteenth century scholars, “the New Atheists labour under the delusion of their own

¹⁴ There is and was some debate over whether these disciplines should properly be called scientific. In the nineteenth century, it was believed that human beings could be objectified and studied like any other natural phenomenon. This methodology and the ideology underlying it have been subject to vigorous critique coming out of feminist, post-colonial, post-structuralist and post-modern critiques to name a few, and both have been all but completely rejected by contemporary social scientists.

superior knowledge, from the perspective of an evolutionary ideology which clouds their judgment and distorts their understanding as surely as any religious world-view might” (Beattie, 46). As we will see, the war of scientific atheism against religion can be understood as a continuation of this endeavour to purge ‘cultured’ society of the influence of primitive superstition.

Orr asserts that the reason Dawkins thinks he has something to say about God is that he is an evolutionary biologist,¹⁵ and Darwinism had an early and noisy run-in with religion. Orr goes on to caution the reader that although Dawkins presents his argument as scientific, *The God Delusion* is not a work of evolutionary biology in particular or science more generally (Orr para. 5). What Dawkins fails to consider is that the reaction of many religious leaders to evolutionary theory had complex causes involving equal parts ignorance, fear, politics, power (Orr para. 5). It is also important to note that in the nineteenth century as much as in our own time, the conflict between science and religion involved a minority of extremists in both camps. The overall picture is far less antagonistic than the metaphor of warfare suggests. The current confrontation between atheism/science and religion must be understood within a particular context. Dawkins is responding, in part, to the very real contemporary conflict between evolutionary science

¹⁵ None of this is to say that evolutionary biology cannot inform our view of religion. It can and it does. We should not conclude that there is no dialogue to be had between science and religion. The view proposed by Gould in *Rocks of Ages* - that religion and science should be considered non-overlapping magisterium - is overly simplistic. Science and religion have informed each other’s development and there have been, and likely will continue to be, real disagreements between ‘legitimate’ science and ‘authentic’ religion. Orr suggests that some of the issues involved are epistemological (Do scientific and religious claims simply begin with different premises, the first materialist and the second not?) and others ethical (where do we draw the line between what medicine can accomplish and what it should be allowed to accomplish). He asserts, and I agree, that if such discussions are to be worthwhile, they will have to take place at a far higher level of sophistication than Dawkins seems willing or able to muster (Orr para. 5).

and creationism. However, in over-extrapolating from specific conflicts to suggest that *all* science and *all* religion are necessarily and eternally antagonistic, Dawkins is reproducing the nineteenth century's constructed battle, not revealing a natural and inherent conflict. Recent research by historians reveals a more complex, historical debate between scientists and Christian believers over the implications of the theory of evolution when it was introduced. The conflict between "Darwin's dangerous idea" and repressive, superstitious religion was not necessary, and may indeed have been somewhat exaggerated (Dawkins 2006, 156). Stephen J. Gould describes the late nineteenth century's construction of the model of warfare between science and religion as a guiding theme of Western history (Gould 2004).

Tina Beattie suggests that to understand the ongoing struggle between evolutionary science and religion, it is necessary to situate Darwin in the context of the changing relationship between theology and science in Victorian England (Beattie, 19). Both science and religion are umbrella terms for a wide range of human ideas and practices, and both have a long history of different meanings. According to Beattie, they acquired something close to their contemporary meaning in the nineteenth century (Beattie, 19). The word 'science' comes from the Latin *scientia*, meaning knowledge, and was a generic word to describe all forms of knowledge for most of Western intellectual history. For example, theology was known as 'the queen of the sciences' in medieval Europe because it was the form of knowledge which informed all others. When science was concerned with the study of natural laws and the material world, it was known as natural philosophy (Beattie, 20). In the middle of the nineteenth century, it acquired the narrower meaning that we are familiar with today.

The development of an independent, scientific worldview in the late nineteenth century affected all areas of knowledge, including religion. Although Beattie asserts that it is difficult to know precisely what the word meant in its initial usage, the word 'religion' comes from the Latin *religio*, which referred in various ways to the rituals and cults of the Roman empire and their associated duties (Beattie, 39). The term was adopted by the early Christians distinguish their own practices and beliefs from those of other religions, but it continued to have a variety of meanings throughout different Christian eras. In the nineteenth century, the category of religion came to be more narrowly understood as referring to all those aspects of human behavior and belief which had been bracketed out of a scientific world-view (Beattie, 39). Religion is explicitly defined as science's 'other'.

At the beginning of the nineteenth century, science had been the pursuit of more or less skilled amateurs, many of whom understood their work in terms of natural theology (Beattie, 20). The term 'scientist' became popular towards the end of the nineteenth century when science emerged as an independent profession. As scientists began to displace the authority of theologians and clergymen, some members of the scientific community came into direct conflict with the clerics and theologians who had, until that point, been the academic and moral authorities (Beattie, 20). Beattie argues that, from this perspective, the nineteenth century conflict between science and religion was not only a struggle between religious and scientific ways of explaining the world. It was, more importantly, a power struggle occurring at the extremes between men of science and men of God, most of them socially conservative members of the English ruling class (Beattie, 20). Beattie suggests that, given this power struggle, it was not in the interest of

those more militant scientists to make any concessions to their religious counterparts. The triumph of scientific authority required the total discrediting of theological knowledge (Beattie, 20). The assault of militant scientists on the Christian bastions of professional and academic life coincided with a widespread religious revival that extended from Britain and parts of Europe to America, and which was manifest in different ways in the Nonconformist, Anglican, and Catholic churches. All of which reinforced scientists' belief that they were locked in a battle for truth against the forces of religious intolerance and superstition (Beattie, 22). Dawkins understands the present as a near perfect repetition of the encounter between nineteenth century science and religion, with the same stakes. He positions himself as one of the militant scientist attempting to eradicate religion for the betterment of humanity.

Is Dawkins a fundamentalist?

Dawkins rejects the charge that he is a fundamentalist, devoting a section of *The God Delusion* to disposing of this “distressingly common” accusation. However, in defining fundamentalism as he does, his rejection is almost meaningless. Rather than presenting and engaging with a definition of fundamentalism that is rooted in careful academic research on the subject, his discussion reflects his personal opinion about what constitutes the defining characteristics of the phenomenon. His discussion of fundamentalism fails to do the due diligence one would expect of a scientist, especially one who is so strongly advocating a universal application of the scientific method. Dawkins defines fundamentalism with an eye to the conclusion he plans to draw: that he cannot rightly be called a fundamentalist. Instead, he suggests that “it is all too easy to confuse fundamentalism with passion” (Dawkins 2006, 283), and while he may appear

passionate when defending evolution against a fundamentalist creationist, this passionate response is not the result of a rival fundamentalism of his own (Dawkins 2006, 283). He goes on to “reject the ‘tiresome’ red herring that a scientists’ belief in evidence is itself a matter of fundamentalist faith because all of us believe in evidence in our own lives, whatever we may profess with our amateur philosophical hats on” (Dawkins 2006, 282). He admits the possibility that scientists might be fundamentalists when it comes to defining what is meant by ‘truth’ in some abstract way, but asserts that so is everybody else, stating that, “I am no more fundamentalist when I say that evolution is true than when I say it is true that New Zealand is in the southern hemisphere. We believe evolution because evidence supports it, and we should abandon it overnight if new evidence arose to disprove it. No real fundamentalist would ever say anything like that”¹⁶ (Dawkins 2006, 283). Dawkins is not entirely wrong in his characterization of fundamentalism. But, without presenting any supporting research, and basing his definition of fundamentalist in the proof that it does not apply to him, he has left out several key characteristics of fundamentalism - perhaps not coincidentally, the very characteristics that support the claim that he is a fundamentalist.¹⁷

In *The God Delusion*, Dawkins asserts that the defining characteristic of fundamentalism is that “fundamentalists know they are right because they have read the truth in a holy book and they know, in advance, that nothing will budge them from their

¹⁶ The section on the work of Thomas Kuhn in chapter 2 will demonstrate that this understanding of science is, at best, idealistic. The scientific discipline is a little more resistant to change than Dawkins suggests here. Indeed, although faced with growing evidence that his understanding of evolution might require some revision, Dawkins remains adamantly unwavering in his position, choosing to reinterpret that evidence to fit his theory in ways that are openly rejected by other members of the scientific community (Elsdon-Baker 2009). More on this in chapter 2.

¹⁷ Although the argument that I am making here is that his atheism is a fundamentalist form of atheism. Fern Elsdon-Baker has an excellent discussion of his fundamentalist tendencies with respect to evolutionary theory.

belief” (Dawkins 2006, 282). In order to dispose of the accusation that he is a

fundamentalism, Dawkins contrasts fundamentalism with scientific thinking stating that,

...the truth of the holy book is an axiom, not the end product of a process of reasoning. The book is true, and if the evidence seems to contradict it, it is the evidence that must be thrown out, not the book. By contrast, what I, as a scientist believe (for example evolution) I believe not because of reading a holy book, but because I have studied the evidence. Books about evolution are believed because they present overwhelming quantities of mutually buttressed evidence. When a science book is wrong, somebody eventually discovers the mistake and it is corrected in subsequent books. That conspicuously doesn't happen with holy books (Dawkins 2006, 282).

As we will see in chapter two, some of the assertions he makes here about science have been called into question, particularly when his definition is compared with one that takes research into fundamentalisms into consideration. The Fundamentalism Project is a five volume project, aimed at both academics and a more general audience, edited by American scholars of religion, Martin E. Marty and R. Scott Appleby while at the University of Chicago.¹⁸ In the first volume, *Fundamentalisms Observed*, they interrogate the tendency in popular discourse to uncritically talk about fundamentalism as though it was a single entity, ignoring the basic differences between these groups

¹⁸ The Fundamentalism Project is not without its critics. One objection is that many of the movements that Marty and Appleby categorize as fundamentalist seem to be motivated less by the rejection of modernity than by social, ethnic, and nationalistic grievances. Their work omits the crucial roles played by geopolitics in creating the contemporary dynamics of religio-politics (cf Mahmood, 29). Another critique of Marty and Appleby's approach calls into question such a broad application of the term fundamentalism, a term which originally referred to a movement in American Protestantism, to describe movements in other religions, particularly non-Western ones. Although the editors and contributors claim that they are emptying the term of its socio-historical specificity, their work has been denounced as Eurocentric conceptual imperialism, “exemplifying scholarship that utilizes European history as a privileged referent to social and political development in the non-Western world” (Mahmood, 29; cf Cassanova, 103; Westerman, 77). A third objection is that the term fundamentalism has significant negative connotations especially as this work seems to contrast it negatively with liberal thought and the liberal academic establishment (cf Casanova, 102; Swatos Jr, 67; Westerman, 77). While these critiques should be taken seriously, the Fundamentalism Project remains one of the most comprehensive studies of fundamentalism, and one that has provided a working definition of this phenomenon that takes into account a wide variety of movements and traditions, as such this work provides a valuable contrast and critique of Dawkins' narrow, unconsidered definition of fundamentalism.

(Appleby and Marty, 815). Following a discussion of fundamentalisms from a wide variety of religious traditions, they conclude that while fundamentalisms are plural, it is possible to discuss fundamentalism as a phenomenon, and that fundamentalism is a “useful label for movements that, despite their differences, bear a strong family resemblance and tend to follow a certain pattern” (Appleby and Marty, 815). Karen Armstrong provides an elegant summary of Appleby and Marty’s conclusions, stating that fundamentalisms are

embattled forms of spirituality, which have emerged as a response to a perceived crisis. They are engaged in a conflict with enemies whose secularist policies and beliefs seem inimical to religion itself. Fundamentalists do not regard this battle as a conventional political struggle, but experience it as a cosmic war between the forces of good and evil. They fear annihilation, and try to fortify their beleaguered identity by means of a selective retrieval of certain doctrines and practices of the past. To avoid contamination, they often withdraw from mainstream society to create a counterculture; yet fundamentalists are not impractical dreamers. They have absorbed the pragmatic rationalism of modernity, and, under the guidance of their charismatic leaders, they refine these ‘fundamentals’ so as to create an ideology that provides the faithful with a plan of action. Eventually they fight back and attempt to re-sacrilize and increasingly skeptical world (Appleby and Marty as described in Armstrong, x-xi).

This way of defining fundamentalism is far more complex than Dawkins’ attempt in *The God Delusion*. Let us compare the mission statement of the, Richard Dawkins Foundation for Reason and Science, with the above definition of fundamentalism.

The enlightenment is under threat. So is reason. So is truth. So is science, especially in the schools of America. I am one of those scientists who feels that it is no longer enough just to get on and do science. We have to devote a significant proportion of our time and resources to defending it from deliberate attack from organized ignorance. We even have to go out on the attack ourselves, for the sake of reason and sanity. - Richard Dawkins (<http://richarddawkinsfoundation.org/>)

Can a definition that has religion as one of its key parameters be applied to atheism?

Yes. Although atheism differs from religion in that it rejects the concept of divinity, like

religion, it is a matter of belief, rather than an empirical truth - contrary to Dawkins' suggestion. Furthermore, Dawkins' understanding of the relationship between science and religion, between liberal 'enlightened' models of society and 'medieval' religious models mirrors that described by Appleby and Marty's definition of religious fundamentalists, with the poles reversed. His perspective is a fundamentalist perspective. Switching the religious qualifiers with scientific qualifiers in Armstrong's summary, we find the attitude of Dawkins and the New Atheists. Rather than resisting against a liberal model of society, the work of the New Atheists has emerged as a response to the rise of creationism and terrorism, as they identify with an embattled form of enlightenment reason. They see themselves as engaged with enemies whose religious policies and beliefs are inimical to science itself. While evolution is the ground zero of this conflict, it has extended beyond this so that Dawkins frames the conflict between science and religion as a battle between good - reason, in the form of scientific atheism (Dawkins 2006, 232) and evil - in the form of all religion (Dawkins 2006, 286). Dawkins selectively draws on enlightenment ideas to reinforce his understanding of science and reason, as well as their relationship to religion.

The Historical Roots of Dawkins' Atheism:

Dawkins means something very particular when he uses the term 'enlightenment' - a term that he uses to refer to the ideology and development of scientific thought that occurred during the Enlightenment and is manifested in a contemporary scientific worldview. Dawkins' definition of science presents it as identical with reason. In asserting that science *cum* reason can not only answer any and all questions but will make the world a better place, Dawkins' sees himself as taking up the banner of the

Enlightenment project. Drawing on their discussion of the Enlightenment, we will use the work of historians Dorinda Outram (the Gladys I. and Franklin W. Clark Chair in History at the University of Rochester) and Roy Porter (a British historian, who specialized in the social history of eighteenth-century Britain and the Enlightenment and was elected to the British Academy in 1994) to interrogate Dawkins' narrow definition of enlightenment and call into question his uncritical acceptance of and admiration for the Enlightenment. Although we will be using the term 'enlightenment thought' to refer to Dawkins' narrow definition, it is important to note that this term encompasses a great diversity of thought; such diversity in fact, that it is difficult to provide a simple, complete definition of 'the Enlightenment'. Unlike certain agents in history such as political parties or religious sects, the Enlightenment didn't have a formal constitution, creed, programme, or party organization nor was it explicitly committed to some explicit -ology or -ism, as such. There was no public charter of the Enlightenment, no party manifesto. As a movement, the Enlightenment is amorphous, with divergent ideas and ideals, and was neither unitary, nor was it united (Porter, 10). In her introductory book about the Enlightenment, Dorinda Outram cautions that not only was there great diversity of thought during the period, but that the contemporary ways of interpreting and understanding "the Enlightenment" are many (Outram, 12). She asserts that historical study of the Enlightenment is unusual in that it is defined as a movement in thought, rather than as historical era circumscribed by a particular dynasty or the life of a great man. The extent to which its historical study has been influenced by analyses inspired by philosophical inquiry is also unusual. Not only have philosophers such as Habermas, Horkheimer and Adorno, as well as Kant and Hegel shaped our concepts about the basic structures of enlightenment thought, they

have also written with conviction that the Enlightenment is not a closed historical period, but one which whether for good or ill, continues to influence the present (Outram, 12). When considering the historical context of the Enlightenment, not only should we be aware of significant national, regional and confessional differences in the Enlightenment experience, but we should also consider the different Enlightenments experienced by men and women, by Europeans and indigenous traditions. All this diversity is hardly surprising, particularly when placed against the backdrop of the contemporary inability to define Enlightenment in any simple, single way (Outram, 12).

When Richard Dawkins talks about the Enlightenment, he is referring to, and identifying with what is commonly called 'the Enlightenment Project', a title used to refer to the writings of a number of scientists and philosophers whose work is understood as an attempt to create a rational, progressive and cultivated society based upon the empirically discovered and/or logically deduced laws of nature and human nature. Reason/rationality are the central values of the 'Enlightenment Project', which defines rationality as objective thinking, without passion, prejudice or superstition and without reference to non-verifiable statements such as those of religious revelation (Outram, 11). Typified by the work of Sir Frances Bacon, the Enlightenment Project is characterized by an attitude of systematic doubt, experimentation, reliance upon first-hand experience rather than second-hand authority and confidence in the regular order of nature (Porter, 17). The central belief of the Enlightenment Project is that the world has a fundamentally rational structure and that we have sufficient rational ability to uncover this structure. Human beings, unaided by divine revelation or intervention can and should understand the basic structure of the universe through the application of reason.

Supported by a belief in the fundamental unity of knowledge, these thinkers were confident that uncovering the natural laws governing the universe using the methods of natural science would reveal the Truth, not only about the natural world, but about human nature, economics, and social organization etc. This perspective looked forward to universal civilization - to recapitulate the European model - and universal emancipation. For some, emancipation of mankind from religious tyranny would be the first blow in general politics of emancipation, because the individual possessed by false religion could not be in full possession of himself. Thus, for many enlightenment minds, religion in many traditional shape or form was unacceptable (Porter, 32). This is a view explicitly supported by Dawkins in, *The God Delusion*. This perspective asserts that we will lead better lives if we exercise our reason in uncovering the rational structure of the universe because as our knowledge becomes both broader and more unified, we will experience continued progress (not only technologically, but also socially, politically, and morally). As we will see in our critique of the utopian character of his worldview, this construction of the Enlightenment is not value free, it has strong implications for how he sees the world, resulting in a worldview that is not necessarily wholly scientific. It is not a 'realist' perspective – it is informed by a specific utopian ideology.

Understanding Utopianism:

It is important to note that, as with fundamentalism or the Enlightenment, there is no singular definition of utopia. However, like those two, there are a number of shared characteristics within the umbrella of utopianism that makes it a useful category for discussing a variety of movements and ideologies. British political philosopher John Gray's look at the influence of utopianism on Western thought and politics will form the

basis of the definition that I will bring to bear in a discussion of the utopian tendencies in Dawkins' worldview.¹⁹ Dawkins' utopian tendencies are in line with what Gray calls "modern secular utopianism." The defining characteristics of this utopian thought include the following elements: the anticipation of ultimate social harmony that reduces the conflicts and shortcomings of all known societies to universal repression; the goal of emancipation from this universal repression, after which human possibilities are limitless; a conception of history in terms of its purpose – emancipation - rather than in terms of cause and event; and an understanding of progress that associates advances in science with necessary corresponding advances in ethics and morality.

The understanding of history at the center of Western utopian thinking is strongly informed by the enlightenment, although, like much Western thought, it has its origins in Christianity.²⁰ While the roots of utopian thinking are decidedly Christian, for over 200 years - the early Christian faith in a divinely initiated end-time²¹ has been transformed into the belief that Utopia could be achieved by human action (Gray 2007, 3, 9). Modern revolutionaries, such as the French Jacobins and the Russian Bolsheviks, were informed by the radical Enlightenment belief in a sudden break in history, after which the flaws of human society will be forever abolished (Gray 2007, 1). Unlike these revolutionaries, liberal humanists, like Dawkins, see history and progress as a slow incremental struggle. In this view, as "human knowledge advances so do improvements in ethics and politics:

¹⁹ In *John Gray and the Problem of Utopia*, John Hoffman asserts that Gray's definition of Utopia is overly pessimistic and should be re-classified as the traditional definition of Utopianism, leaving room for more productive possibilities for this concept.

²⁰ The Christian origins of Utopianism is the central argument of *Black Mass*. At this stage, it is sufficient to show that Dawkins' worldview is informed by Enlightenment utopianism, we will come back to the issue of Christian influence briefly in the third chapter.

²¹ Eschatology is the branch of theology that is concerned with the end times and includes discussions about things such as death and judgment; Heaven and Hell; the ultimate destiny of humankind. In Judeo-Christian theology this includes the second coming of Christ, the Apocalypse or the Last Judgment.

progress in science will be matched by progress in society and history is a march to a better world” (Gray 2007, 25). In *The God Delusion*, Dawkins asserts that the zeitgeist “moves on” - that there seems to be a steadily shifting standard of what is morally acceptable. He writes that the shift is in a recognizably consistent direction, which most of us would judge as improvement.²² He goes on to say that even Hitler would not have stood out in the time of Caligula or of Genghis Khan (Dawkins 2006, 268). Hitler just seems especially evil by the more benign standards of our time (Dawkins 2006, 269). Secular utopian thinking incorporates the enlightenment ideal that looks forward to universal civilization and interprets history in reductive terms, viewing technological and economic development as primary and religion as a secondary factor of dwindling importance (Gray 2007, 30). Dawkins and the New Atheists take this one step further, identifying religion as the central impediment to moral progress. Dawkins specifies that religion has nothing to do with the shift in the zeitgeist towards greater morality, writing that “if anything, it happens in spite of religion, not because of it” (Dawkins 2006, 268). This is because, according to Dawkins, religious faith takes some people outside of the “enlightened consensus of his ‘moral’ zeitgeist” (Dawkins 2006, 303). Although he is specifically talking about religious absolutists and extremists, he clearly specifies that because “even mild and moderate religion helps to provide a climate of faith” (Dawkins 2006, 303) it is not to be tolerated.

²² Zeitgeist is literally ‘the spirit of the time’. Popularized by Hegel’s philosophy of history it is the idea that society consists of a collective consciousness which moves in a distinct direction, dictating the actions of its members. This is a concept with strong metaphysical implications. The term is used to describe the trend of opinions, morals, thoughts, unquestioned assumptions, and other influences that belong to a particular culture, science, or art at any point in time.

All utopian thinkers understand history not in terms of the causes of events, but in terms of its purpose – the salvation of humanity. For secular utopians, this salvation is to be achieved exclusively through human means (Gray 2007, 5). For Dawkins, atheism (as he defines it) is the best bet for human salvation. He asserts that while atheism might not increase morality, humanism – the ethical system that goes along with it likely does (Dawkins 2006, 229). Even though secular utopian schemes are an extension of the Enlightenment project that sought to replace religion with science, by maintaining that the crimes of history are the result of error, Enlightenment philosophers have created a problem of evil as impossible as any that confronts theologians (Gray 2007, 25). Consequently, although modern thinkers try to avoid the view of history as a battle of good and evil, secular utopian projects cannot help but perpetuate the idea that history is a battle between light and dark. The struggle might be between knowledge and ignorance, or as in the case of Dawkins, reason and faith, but the understanding of the world is the same; both views take for granted that human salvation is worked out in history (Gray 2007, 25).

The Danger of Utopian Thinking:

The problems, limitations and dangers of utopian thinking are commonly neglected. While every utopia claims to embody the best life for all of humankind, it is never more than one ideal among many, (Gray 2007, 52). According to Gray, the pursuit of total harmony not only defines utopian thought, but discloses its basic unreality (Gray 2007, 17). While defining reality is problematic at best, it is nonetheless possible to recognize the absence of realistic goals or expectations. Utopian projects are not constructed through ignorance, error or disinformation – they are the product of

worldviews that fail to take into account the world as it is, and as it has been. Given clashes of interest between individuals and social groups, and antagonisms between varying ideals, conflicts are endemic in every society (Gray 2007, 17). All societies contain divergent ideals of life (Gray 2007, 53) and accordingly, it would appear that conflict is and has long been a universal feature of human life. At the very least, it seems natural for people to want incompatible things. However, utopian thinkers reduce these conflicts to insignificance so that the shortcomings of every known society represent not flaws in human nature, but the marks of universal repression. Many continue to believe in the enlightenment concept of progress - that there is nothing to stop humans from recreating themselves and the world in which they live (Gray 2007, 19). Others, while acknowledging the impossibility of actually achieving a perfect society, insist on the indispensable value of utopian imagination, suggesting that utopian thinking opens up otherwise closed vistas of possibility (Gray 2007, 18). According to those who accept this view, the disastrous consequences of utopian projects in Soviet Russia, or Maoist China, do not flow from the projects themselves (Gray 2007, 18). The mass repression in Stalinist Russia or Maoist China must be the by-product of their native traditions of despotism (Gray 2007, 36).²³ As a result, Western utopian theories are guiltless and harmless; it is the Russian or Chinese traditions that are at fault (Gray 2007, 18). Dawkins insists that while individual atheists might do evil things, they don't do evil in the name of atheism whereas religious wars really are fought in the name of religion and have been horribly frequent (Dawkins 2006, 278). This perspective completely ignores the degree to which atheism has been an integral part of the ideology informing a number

²³ Gray provides a compelling and detailed discussion demonstrating the flaws and fallacies in this line of thought.

of repressive and destructive regimes. State atheism has been as convenient an excuse for crime and corruption as state religion had been. This differs greatly from the vision of atheism that Dawkins presents in *The God Delusion*.

British philosopher Mary Midgley has spent much of her career strongly opposing reductionist and scientific ideas. Although she has responded directly to Dawkins in a number of her works, including *The Myths We Live By*, I draw on her more general critique of scientism in my critique.²⁴ For Dawkins atheism is a necessary corollary of a scientific worldview. However, it's not clear what, if anything, the metaphysical position of atheism has to do with the physical sciences. As Midgley establishes, atheism does not actually require a scientific materialist perspective. However, materialism seems to strike most contemporary atheists as the most straightforward justification of their claims about the existence of God, and by making this association, their atheism draws on the prestige and authority of 'Science' (Midgley 2004, 40). When Dawkins talks about science, he is not limiting himself to a method of investigation; he is including in the term 'science' the entire worldview out of which the discipline originated. Dawkins has faith in the Enlightenment's humanistic ethics as well as in its scientific discoveries. When he talks about science, he assumes that it includes Enlightenment values and ideals that are beyond the scope of the practice of science. Like others before him, he expects that the scientific enterprise will necessarily include wise and responsible use of its discoveries (Midgley 2005, 15). This utopian perspective equates reason with science and science with atheism and expects nothing less foundation for morality, a uniquely just basis for a

²⁴ For example: Midgley, Mary. "Gene-Juggling." *Philosophy*. vol 54 (1979) and Midgley, Mary, *Evolution as a Religion: Strange Hopes and Stranger Fears* (2002). Her response to Dawkins has been highly critical and has led to a public airing of bad feeling on both sides.

set of secular values that will replace earlier ones supplied by religion – in short, a true and better ethic (e.g. Dawkins 2006, 229, 286, 302). Secular utopians, like Dawkins, anticipate that this ethic will supersede and replace the corruption and confusion of traditional moral thinking. They fail to notice that the ethical component of this perspective is something much wider and actually quite independent from ‘science.’ And they fail to deal with the limitations inherent in the enlightenment reliance on rationality, specifically the assumption that once released from superstition, mythology and fear, humans possess the capacity to see solutions which are objectively correct and acceptable to all other rational minds (Outram, 9). The problem with this way of thinking is that, in practice, human beings do not in fact agree on what is ‘rational’.²⁵ Since this type of enlightenment thinking denies the validity of other ways of arriving at solutions such as tradition, mythology or religious revelation, it becomes difficult to resolve any conflicts without the use of force. In other words, lurking in the heart of enlightenment ideology is political terror (Outram, 9). The role of enlightenment ideals in twentieth century terror has been a blind spot in Western perception (Gray 2007, 36). And yet, the most powerful Western traditions have been those that looked to transform the very nature of human life by using the power of science – a project frequently given to violence (Gray 2007, 35). According to Gray, the terror practiced during the last century was on a scale unequalled at any other time in history, and unlike the terror most feared today, much of it was done in the service of secular hopes. The totalitarian regimes of the last century have embodied some of the enlightenment’s boldest dreams, and some of their worst crimes were done in the service of progressive ideals (Gray 2007, 36).

²⁵ The work of Horkheimer and Adorno on the Enlightenment is devoted to developing this critique.

Despite consistently being presented as having the authority of science, (Gray 2007, 5) theories of progress are not scientific hypothesis. Instead, they are myths which answer the human need for meaning (Gray 2007, 1). To suggest that the enlightenment and science offered not reason to supplant myth, but rather new ideologies, is not to debunk science. But it does mean that we must avoid taking its claims at face value. As we will see in greater detail in the following chapter, science is a social activity, performed by people with a wide variety of ideological commitments.

Chapter 2: Science and its Limits

The following chapter will analyse Dawkins' portrayal of science as the 'true' voice of nature, a presupposition that underlies his confidence in the omniscience of science. Our discussion of the social construction of scientific knowledge, the role of interpretation in scientific theory, and the limits of the scientific method will serve to critique his representation. As we will see, Dawkins is adamant that there is only one valid way of understanding evolution; this reflects his view that science reveals a singular truth. We will examine Thomas Kuhn's model of science, which will enable a critique of the idealized view of science Dawkins presents in *The God Delusion*, and then subverts in his response to alternate theories of evolution. This chapter is not meant to be anti-scientific, but is intended to disillusion the reader about the objectivity and vision of transcendent truth claimed by scientists like Dawkins. It will also acquaint the reader with science as a social activity in order to promote reasonable skepticism about the sweeping claims that some modern scientists make about understanding human existence.

Is The Existence of God a Scientific Hypothesis?

The central premise of *The God Delusion* is that the question of god's existence can be answered using the scientific method. Dawkins maintains that "God's existence or non-existence is a scientific fact about the universe, discoverable in principle if not in practice" (Dawkins 2006, 50) because religion makes existence claims – claims that, according to Dawkins, are of a clearly scientific nature; for example, miracles or the survival of the soul. Dawkins begins the second chapter of *The God Delusion* with an introduction to what he has called, "The God Hypothesis." In its simple form, this hypothesis asserts that "there exists a superhuman, supernatural intelligence who deliberately designed and created the universe and everything in it, including us" (Dawkins 2006, 31). He later expands this definition in order to accommodate the Abrahamic God, stating that God, "not only created the universe; he²⁶ is a *personal* God dwelling within it, or perhaps outside it (whatever that might mean) possessing the unpleasantly human qualities to which I have alluded" (Dawkins 2006, 38). Thus, "The God Hypothesis" proposes that "the reality we inhabit also contains a supernatural agent who designed the universe and – at least in many versions of the hypothesis – maintains it and even intervenes in it with miracles, which are temporary violations of his own otherwise grandly immutable laws" (Dawkins 2006, 58). Dawkins insists that a universe with a creative superintendent would be a very different kind of universe from one without (Dawkins 2006, 55) and that, even if it is not easy to test in practice, in principle, there is a fundamental difference between these two hypothetical universes (Dawkins 2006, 59). Dawkins insists that for this reason, "the presence or absence of a creative

²⁶ I am also conscious that the Abrahamic God is (to put it mildly) aggressively male, and this too I shall accept as a convention in my use of pronouns" (Dawkins 2006, 35).

super-intelligence is unequivocally a scientific question” as is “the truth or falsehood of every one of the miracle stories that religions rely upon to impress multitudes of the faithful” (Dawkins 2006, 59).

So, is the existence of God a scientific hypothesis?

How do we Define Science?

Answering this question depends, in part, in how we define science - what philosophers of science call the demarcation problem. James Ladyman, philosopher of science at the University of Bristol, affirms that although one of the most fundamental tasks for philosophers of science is to answer the question of how to distinguish genuine science from activities or theories that merely claim to be scientific, there is no easily accessible, simple definition of ‘science’ (Ladyman, 4). Many of the great scientific achievements of the past would not necessarily fit into our contemporary classification of science as separate and distinct from other forms of knowledge. Therefore, it is very difficult to construct a definition of science from a historical perspective. Even if we were to limit ourselves to a discussion of contemporary science, it is still difficult to provide an adequate definition of science, given that different scientists can have very different perspectives on what it means to ‘do science.’ These differences exist for a number of reasons, including disciplinary differences and, technological capabilities and can be influenced by a scientist’s personal or institutional traditions, culture and worldview.²⁷ Ladyman asserts that if science consists of anything, it is a method, or set of methods (Ladyman, 4). We use the term ‘scientific method’ to refer to a collection of

²⁷Some examples of the differences include questions such as, should all science be based purely on experimentation? Some sciences use only observations, or are highly abstract and mathematical. Or, to what degree do we assert the certainty of our findings?

techniques used to investigate phenomena, acquire new data, and to integrate and/or correct previous knowledge through the formulation and testing of hypotheses. In order to be called scientific, a method of inquiry must be based on gathering empirical²⁸ and measurable evidence and subject to specific standards of reasoning. Thus, empiricism, the attempt to construct an account of knowledge in terms of sense experience, observation and experimentation, is frequently identified as the basis of modern science.

What distinguishes scientific knowledge from the day-to-day ways in which we make sense of the world?²⁹ In everyday language, we tend to say that we *know* something when we feel that we are sure of something. We often use the word 'know' to express a personal conviction, even when our claim may, in fact, be groundless. We believe that our claim is correct, without necessarily having verified the evidence which supports the claim. In this context we use the word 'know' to indicate something that is not necessarily opposed to belief, but is instead a belief that may or may not be adequately justified. Our customary use of 'to know' is much more open than the philosophical definition of 'knowledge'. Although a definition of 'knowledge' is the subject of much debate, generally speaking, for a claim to count as a knowledge claim it must be made with sincere belief in its veracity and this belief must be adequately justified (Ladyman, 6). Knowledge is considered 'scientific knowledge' if it has been produced using a scientific method which provides the standards for justifying, and the means of verifying a given claim. Although there is a tendency to think of science and the scientific method as a progressive attempt to collect and faithfully communicate

²⁸ Empirical evidence is information derived from observation, experience, or experiment

²⁹ Answering this question is the goal of epistemology, and a full discussion engaging all of its complexities is beyond the scope of this paper.

observable facts about the world, to think of science as revealing absolute truths about the natural world is inaccurate. Science can only give us a *probable* knowledge about the world around us, not *certain* knowledge. And as we will see, the collection of data and its communication are contingent upon social and cultural contexts. Rejecting the idea of absolute certainty does not undermine the pursuit of science, or what it can tell us about the world, or the predictions it can make about natural phenomena. Even without certain knowledge in the absolute sense, we still have hypotheses and theories that are buttressed by empirical evidence and their ability to successfully predict phenomenon. Therefore, we are fairly safe in suggesting that science can allow us to determine certain facts about the universe within an interpretive framework.

Dawkins complains that some scientists and intellectuals are too eagerly convinced that settling the question of God's existence is forever inaccessible to science (Dawkins 2006, 48). Scientists and intellectuals such as Stephen J. Gould take the position that science can neither affirm nor deny God's existence. Dawkins wants to defend the view that, although science is currently agnostic about the existence of God, this is a temporary agnosticism and will one day be answerable (Dawkins 2006, 48). Furthermore, he rejects the position that science should be agnostic about the existence of God because it implies that science cannot even make probability judgments about the existence of God (Dawkins 2006, 58). Dawkins asserts that the existence of God is a scientific question – either he exists or he doesn't – and one which we might someday answer. In the meantime, Dawkins asserts, a strong determination can be made about about the probability of his existence (Dawkins 2006, 48). Dawkins concludes that even if God's existence is never proved or disproved with certainty, available evidence and

reasoning produce an estimate about the probability of God's existence that is far less than fifty percent (Dawkins 2006, 50).

Dawkins classifies his views on the probability of God's existence as "very low probability but short of zero." Therefore he qualifies himself as a *de facto* atheist who "cannot know for certain, but thinks that God is very improbable and lives his life on the assumption that he is not there," although he states that he is leaning towards the 'strong atheist' stance – atheists who *know* that there is no God (Dawkins 2006, 50). In this section, he stops short of embracing the strong atheist position because as he says, atheists don't have faith, and reason alone could not propel one to total conviction that anything definitely doesn't exist (Dawkins 2006, 51). And yet, at the beginning of the second chapter, he asserts that "God, defined as a super-human, supernatural intelligence who deliberately designed and created the universe and everything in it, including us, is a delusion; and, as later chapters will show, a pernicious delusion" (Dawkins 2006, 31).

In *The Selfish Delusion*, Fern Elsdon-Baker argues that Dawkins is publicly misrepresenting science in general and evolutionary theory in particular. Elsdon-Baker identifies two different approaches used somewhat interchangeably by Dawkins to arrive at the conclusion that god probably doesn't exist in *The God Delusion* - empiricism and a type of neo-rationalism or scientific reasoning.³⁰ While the two approaches are linked, they relate to the basis of knowledge quite differently (Elsdon-Baker, 184). As we have seen, empiricism asserts that knowledge can be based on our sense experience – we do not need 'certain' knowledge in order to understand, or predict what might happen in the world around us. When Dawkins uses the terms 'rational', 'rationalist,' and

³⁰ Although he does state that he can only say that there is probably no God, this important point sometimes gets lost in his otherwise black and white portrayal of the relationship between science and religion.

‘rationalism,’ he means ‘uses reason.’ This use of ‘rationalism’ should be distinguished from philosophical rationalism.³¹ Rationalists in Dawkins’ vein might argue that reason or logical thinking has precedence over other ways of acquiring knowledge (Elsdon-Baker, 180).

The problem is not that he should pick one approach or the other, as it is perfectly feasible to be both a scientist and a rationalist. The problem is that Dawkins blurs the boundaries between these two separate approaches so often that it is easy for the reader of Dawkins’ work to confuse ‘science’ and rationalism. Indeed, he so consistently conflates them that it is not clear that he understands or values the distinction between the two. His account of science presents it as the epitome of reason, but science is about empirical observation as well as logic, and what appears to be the logical conclusion is not necessarily the right one. While there are some very compelling rationalist arguments for the probable non-existence of God, they are not based in science. Thus, the probable non-existence of God is not a scientific fact, as Dawkins claims. Although the investigation of miracles might be a relatively safe area of scientific inquiry, the issue of whether or not souls survive after death is unlikely to be answered by science because asserting that the soul does not exist is as much a statement of belief as asserting that they do exist – we simply cannot know this empirically, just as we cannot devise any experimental basis on which to make assertions to what happens to ‘consciousness’ after death (Elsdon-Baker, 167). In maintaining that the existence of God is a scientific hypothesis, Dawkins misrepresents what science can actually tell us about the world.

Dawkins seems to be confusing what he can know empirically, or even rationally, with

³¹ philosophers take a different approach to what ‘rationalism’ means and have been committed to a great deal more, including innate or *a priori* ideas which are not based on experience.

what he believes. He fails to differentiate between two separate things, atheism – which is a personal conviction, and evolution – which is a scientific theory based on empirical evidence. He concludes that there is probably no God based on his personal experience, and particular worldview. This is a different kind of knowledge claim than those accepted as scientific, reflecting a different kind of truth. Neither evolutionary theory nor science makes any claims either way about the existence of a deity, even as it supports the theory that natural laws are responsible for the development of new species over a vast period of geological time. The mistake Dawkins is making is to unthinkingly accept the conclusion that the existence of God is automatically disproved or discounted by evolutionary theory. Dawkins is not an atheist merely because his acceptance of evolutionary theory will not allow otherwise; Dawkins is an atheist because he *believes* there is no deity (Elsdon-Baker, 168).

What does it mean to talk about the social construction of science?

Dawkins' book presents science as though it consists of the application of an unchanging technique called the scientific method, treating 'science' as a simple, consistent object that will one day give us a complete account of things. In this view, the world presents itself in a given, static form which is faithfully captured using the methods of science.

To critique this perspective is not to descend into obscure relativism, nor is it say that there aren't facts of matter independent of culture. Rather it is a recognition that when we make statements of fact, those statements belong to our culture. They come from our linguistic conventions – our views about space and time are embedded in language. Language informs our experience and perception such that these are cultural products themselves. While there is a world outside of us, a material reality independent

of our thoughts and our language, when we seek to understand it, when we start to interpret and represent that world to ourselves and others, we're talking about cultural entities. The reality of the external world is always mediated by cultural concepts, which is what is meant by "social construction of knowledge." These are the ways in which the methods, styles, preferred regimes of science etc. are thoroughly embedded in their social and cultural contexts.

Richard Lewontin, an American evolutionary biologist and geneticist, is critical of the view that the methods, institutions, and vast body of knowledge that we call "science" somehow stand outside of society; that the scientific method is objective, nonpolitical and true for all time; and that the product of science is claimed as a kind of universal Truth (Lewontin, 8). He asserts that "science" is a social institution, completely integrated into and influenced by all other social institutions (Lewontin, 3). Scientists, he notes, are social beings, immersed in a family, a state, and a productive structure, all of which contribute to and mold their worldviews (Lewontin, 3).

There is also a reciprocating exchange between science and other social institutions. On the one hand, social institutions influence science, both in its practice, and in how we think about it. On the other hand, these institutions appropriate the scientific concepts and ideas that support their existence, and make them seem legitimate and natural (Lewontin, 4). To take it one step further, work in biology, especially biomedicine, is broadening our understanding of the relationship between science and society. There is growing evidence demonstrating that culture doesn't just interpret human biology, but also shapes it. Thus, human biology is not a universal constant but is actively shaped at the material level by the way people live. Recent research in

epigenetics³² is changing our understanding of the ways in which genes communicate. Rather than entirely active agents driving cellular life, they exist in a dynamic interchange with their environments, giving and taking, sometimes expressed and sometimes not. As the relationship between science and society is reexamined and expanded, the sciences are becoming understood as inherently social. Scientific knowledge is a human product that is both constructed and maintained. The cultural embedding of science is not inconsequential. Reading our social arrangements into the natural world not only colours what we perceive in nature, but influences the questions that science takes up in the first place. It determines what it considers worth doing, and determines the values of science.

Sometimes the relationship between social experience and scientific theory are easy to trace, particularly in the way in which a scientific theory is a direct translation of social experience. Even Darwin's explanation of evolution was influenced by his social context. In examining the issue, we accept that the process Darwin described is real and functions as he describes it. But his explanation of this process is clearly influenced by his social context (Lewontin, 10). Lewontin asserts that Darwin took early nineteenth-century *political* economy and expanded it to include all of *natural* economy. Darwin claimed that there was a universal struggle for existence because more organisms were born than could survive and reproduce, and that in the struggle for existence, those organisms who were more efficient, better designed, cleverer, and generally better equipped for the struggle would leave more offspring than the inferior kinds. As a consequence of this victory in the struggle for existence, evolutionary change occurred.

³² A little more on this later in the chapter

Darwin himself was conscious of the source of his ideas about the struggle for existence, stating that the idea for evolution by natural selection occurred to him after reading the famous *Essay on Population* by Thomas Malthus. Lewontin claims that his theory of natural selection bears an uncanny resemblance to the early capitalist economic theory developed by the Scottish economists (Lewontin, 10). Furthermore, his view of sexual selection reflected the standard Victorian view of the relationship between middle-class men and women (Lewontin, 10). Sarah Blaffer Hrdy, an anthropologist and evolutionary scientist, has shown how romantic ideas of femininity and motherhood skewed the interpretation of evolutionary science, arguing that Victorian naturalists looked to nature to justify assigning female animals the same qualities that patriarchal cultures have almost always ascribed to 'good' mothers (nurturing and passive). Women were assumed to be 'naturally' what patriarchal cultures would socialize them to be: modest, compliant, non-competitive and sexually reserved (Hrdy, xiv). Another evolutionary biologist, Joan Roughgarden, argues that Darwin's understanding of the rules of natural selection was distorted by Victorian sexual stereotypes, not least in the suggestion that 'social life in animals consist(s) of discreetly discerning damsels seeking horny, handsome, healthy warriors.' She argues that there is far greater sexual diversity in the natural world and among humans than Darwin's cultural bias allowed him to recognize (Roughgarden, 167). Most of the ideological influence from society that permeates science is a great deal more subtle, coming in the form of basic assumptions of which scientists themselves are usually not aware, yet which have profound effect on the way in which the 'facts' of science are interpreted and theories are explained. This is inevitable,

and Dawkins is not unique in doing this. But a problem arises when this bias is smuggled in uncritically.

Thomas Kuhn and Rethinking the Practice of Science:

Thomas Kuhn's discussion of science gives us the ability to appraise the role of cultural influences (social, political, religious and institutional) on the development of science without necessarily reducing the explanatory value of the sciences. In short, Kuhn's work allows us to consider the influence of a scientist's worldview on his work. Dawkins' representation of science has remained static – he perpetuates a public image of science that is much the same as the public image of science in 1962 when Thomas Kuhn wrote *The Structure of Scientific Revolutions*. Dawkins subscribes to what Kuhn refers to as 'the received view of science.' This way of understanding science has seven key characteristics. It holds that science is cumulative, it's progress the result of a steady accumulation of knowledge over time; that science is unified, in the sense that there is a single set of fundamental methods for all the sciences and that because everything in the world is made of the same basic stuff in complex combinations, the laws of biology ought to be derivable from those of chemistry, and the laws of chemistry from the laws of physics; that context is of no importance, with questions such as 'who made a particular observation' or 'for what reason' being irrelevant to the issue of whether and how observations provide evidence for a theory; that there is an underlying logic of confirmation or falsification implicit in all scientific evaluations of the evidence for a given hypothesis and that these evaluations are value free, in the sense of being independent of the personal, non-scientific views and allegiances of scientists; that there is a sharp distinction between scientific theories and other kinds of beliefs systems; that

there is a sharp distinction between observational terms and theoretical terms as well as between theoretical statements and those that describe the results of experiments; that observation and experiment is a neutral foundation of scientific knowledge, or at least for the testing of scientific theories; and finally, that scientific terms have fixed and precise meanings (Ladyman, 95).

By applying the methods and tools of history to science, Kuhn revealed a very different concept of science, one that helps describe and critique the image of science perpetuated by Richard Dawkins in *The God Delusion*. As far as Dawkins is concerned science is the wholly objective handmaiden of truth – a truth that transcends society, culture and to some extent history. This idealized view ignores how scientists, and those who study the sciences, actually perceive that activity of science. Science is a dynamic process, not a static one.

Originally published as an essay, Kuhn's work was an attempt to demonstrate that we have been misled in fundamental ways in the image we have of science, leading many to question the rationality and objectivity of science. While there are a number of criticisms of this text, it has almost certainly led to near universal reappraisal of the way we understand scientific knowledge and the history of science (Elsdon-Baker, 203). Kuhn was a physicist who became interested in the history of science, especially as it pertained to the Copernican revolution. The standard view of scientific revolutions presented in textbooks, as well as historical and philosophical works presented the Copernican revolution as a battle between reason and experiment on one side and superstition and religious dogma on the other (Ladyman, 96). Kuhn saw this presentation as an oversimplification, and argued that this history of scientific revolutions was

incompatible with the scientific method (Ladyman, 96). *The Structure of Scientific Revolutions* provided a fundamentally different way of thinking about scientific methodology and knowledge. His essay radically altered the practice of the history of science by demonstrating that scientists' accounts of the history of their subject distort the actual processes of change and development in scientific thought. Given that they are intended to motivate and justify contemporary theories, traditional accounts serve a pedagogical and ideological function rather than providing an accurate history. This distorted image of science as the steady accumulation of knowledge and of scientific revolutions as the triumph of reason over superstition is generally constructed and transmitted through the classrooms and textbooks from which each new generation of scientist learns its trade (Kuhn, 1). Kuhn's work made some radical claims about scientific knowledge – specifically, his work demonstrates that although observation and experimentation constrain scientific beliefs, they do not determine them.

Kuhn's work is invaluable to a critique of Dawkins' representation of science, because it demonstrates that science is not, nor has it ever been, capable of a perfect, objective account of nature. Science is practiced by people according to how they see the world, an understanding that contrasts sharply with Dawkins' view which suggests that the opposite is true – that the objective truth of the world dictates the practice of science. Kuhn demonstrated that views of nature held in the past are neither less scientific nor more the product of human idiosyncrasy than those held today, that out of date theories are not in principle unscientific because they have been discarded (Kuhn, 2). In so doing, his work seriously undermines the model of a historic and necessary conflict between science and religion.

In *The Structures of Scientific Revolutions*, Kuhn demonstrates that scientific revolutions are not the result of truth and reason overcoming superstition and unscientific theories. Rather, scientific revolutions are the result of a ‘paradigm shift’ – a transformation of scientific thought so broad and so profound that it amounts to a transformation of the world within which scientific work is done (Kuhn, 6). He writes that “(t)he early developmental stage of most sciences have been characterized by continual competition between a number of distinct views of nature each partially derived from, and all roughly compatible with the dictates of scientific observation and method. What differentiated these various schools was not one or another failure of method – they were all scientific, but what we shall come to call their incommensurable³³ ways of seeing the world and of practicing science in it” (Kuhn, 4). Kuhn argues that every scientific community functions within a given paradigm³⁴ or model of scientific thinking, and that each scientific revolution, large or small, requires that the scientific community reject a time-honoured scientific theory in favour of new theories and models that are fundamentally incompatible with the old ways of understanding the world (Kuhn, 6). Kuhn’s description of scientific revolutions is as follows: before there is a central paradigm, there is a fact gathering phase during which a paradigm emerges. This occurs when texts are published by more than one scientist that define the discipline or field. Scientists whose research is based on shared paradigms are committed to the same standards and rules of scientific practice (Kuhn, 7). Kuhn states that “paradigms provide scientists not only with a map, but also with some of the directions essential for

³³ meaning lacking a common measure or standard of comparison. Observed evidence can appear different to members of different paradigms.

³⁴ One of the most fundamental concepts in Kuhn’s philosophy is that of the paradigm – the overarching theories and conceptual frameworks of a scientific discipline.

mapmaking.” That is to say that a paradigm provides the standards by which a given research tradition determines not only what should count as an admissible problem for scientific scrutiny but also which solutions are legitimate (Kuhn, 109). In learning a paradigm, the scientist acquires the theory, methods and standards of that research tradition. Commitment to these three inextricably linked aspects - and the consensus produced within a scientific community by that commitment – are pre-requisites for the foundation and continuation of a particular research tradition (Kuhn, 11). The science that occurs within a particular scientific paradigm fits the traditional public image of science, which Kuhn refers to as ‘normal science.’³⁵

The aim of normal science is the steady extension of the scope and precision of scientific knowledge. (Kuhn, 52). It is a highly cumulative enterprise with research firmly based on one or more past scientific achievements that the scientific community acknowledges (for a time) as supplying the foundation of its future practices (Kuhn, 10). In all these respects, it fits the usual image of scientific work with great precision. However, one standard aspect of the popular image of the scientific enterprise is missing. Normal science does not aim at novelties of fact or theory. When it is successful, it finds none (Kuhn, 52). Kuhn is very critical of Popper’s theory of falsification, according to which scientists should and do abandon any refuted theory. He asserts that it is just not the case that the knowledge of falsifying instances is enough to make most scientists

³⁵ There are two distinct types of scientific thought in Kuhn’s model: normal science which is fundamentally conservative and tradition bound; and extraordinary science, which is fundamentally innovative.

abandon their cherished theories³⁶. Normal science is predicated on the assumption that the scientific community knows what the world is really like (Kuhn, 5); its success is a result of the community's willingness to defend that assumption. For this reason, normal science often suppresses fundamental novelties because they are unavoidably subversive of its basic commitments (Kuhn, 5). Researchers are successful only when they collect further evidence to support the paradigm. They use the paradigm as a predictive model and work out new applications for it. Although normal science tends to reify and maintain the *status quo* within which it operates, it will eventually produce anomalies that the current paradigm cannot account for. These anomalies put stress on the paradigm, with the recognition that nature has somehow violated the paradigm-induced expectations that govern normal science (Kuhn, 52). When the scientific profession can no longer avoid the anomalies that challenge the existing traditions of scientific practice, some members of the scientific community begin what Kuhn calls 'extraordinary science' – which begins with an investigation of the area of anomaly and closes only when the paradigm theory has been adjusted so that the anomalous has become the expected (Kuhn, 52). The explorations of extraordinary science lead the profession to a new set of commitments that will form the new basis for the practice of science (Kuhn, 6).

Scientific revolutions are the very rare, tradition-shattering complements to the tradition bound activity of normal science (Kuhn, 6). As the science that occurs during scientific revolution, extraordinary science is the theoretical and practical work that proposes radically new ways of seeing the world. How a scientist sees the world – their

³⁶ Note that although this is one of Dawkins' most strongly valued virtues of science, especially as it contrasts with religion, he is actively engaged in suppressing or reinterpreting alternate ways of thinking when it comes to his theory of evolution.

scientific worldview – is determined jointly by the environment and the particular normal-scientific tradition they were trained in as a student. At times of revolution, when the normal-scientific tradition changes, the scientist's perception of his or her environment must be re-educated. In some familiar situations the scientist must even learn to see a new gestalt (Kuhn, 112).³⁷ However, scientists are unlikely to attest directly to the perceptual changes that accompany paradigm shifts. As Kuhn writes, a convert to the Copernican worldview does not say 'I used to see a planet but now I see a satellite' when looking at the moon. This statement implies a sense in which the Ptolemaic system had once been correct, that at one time, the moon was a planet. Instead, a convert to the new astronomy says, 'I once took the moon to be (or saw the moon as a planet) but I was mistaken' (Kuhn, 114).

Kuhn notes that many readers will be inclined to suggest that what changes with a paradigm is only the scientists' interpretation of observations, while the observations themselves are fixed once and for all by the nature of the environment and of the perceptual apparatus (Kuhn, 120). However, what occurs during a scientific revolution cannot be not fully reducible to a reinterpretation of individual and stable empirical evidence. More importantly, the process by which either the individual or the community makes the transition between paradigms does not resemble interpretation as much as it does conversion (Kuhn, 121). Scientific fact and theory are not categorically separable, except perhaps within a single tradition of normal-science practice. The unexpected discovery is not simply factually important, the scientist's world is qualitatively

³⁷ German for form, configuration, or appearance, designates a whole that recognizably has parts, but can only be experienced as an indivisible unity. A classic example of this is the popular image that can be seen as either a vase, or an old woman's face.

transformed as well as quantitatively enriched by fundamental novelties of either fact or theory (Kuhn, 7). Theories do fit the facts, but new theories can only account for previously existing evidence by transforming it into a fact that did not exist at all for the preceding paradigm.

A perfect example is found in the shift from Ptolemaic to Copernican astrology. Copernican astrology still accounts for the empirical fact of the moon's existence, but it is now a satellite, an object that did not exist in the previous paradigm. This means that theories do not evolve piecemeal to fit facts that were always in existence. Rather they emerge together with the facts, or facts emerge together with theories. Theories are developed and articulated according to how people see the world and not the other way around (Kuhn, 141). Thus scientific knowledge is not simply a product of gathering new, objective facts. It is also influenced by the cultural and social environments in which scientists work.

All scientists are working within a given paradigm. And like all individuals, scientists have a worldview, although not all scientists have the same worldview. Their worldview influences how they do science, not only determining what kinds of questions they ask, but also what data they deem to be significant, and more importantly, how they interpret that data. Scientific interpretation is bounded by the conventions of the scientific method and the consensus of one's peers. However, while the scientific community might agree on a fact of science, such as the existence of the moon or evolution, there are divergent views on what these facts mean. This does not mean that we have to downplay the role of science as a way of understanding the world around us. It does mean, however, that we cannot assume that scientific knowledge is based on 'absolute fact' or

‘truth’ but should concede that it is more like a model of best fit that can change with our understanding of the world – although not easily.

Dawkins’ Paradigm:

Dawkins is a contemporary neo-Darwinist. However, rather than providing a true account of evolution, Dawkins is actually describing *his* view of *neo-Darwinian evolution*. Elsdon-Baker argues that, in his work, Dawkins’ approach to evolutionary science, intentionally or otherwise, has come to dominate the public perception of evolutionary science. In *The Blind Watchmaker*, Dawkins explains that he wants to persuade the reader, not only that the Darwinian world view happens to be true, but that it is the only known theory that could, in principle, solve the mystery of our existence (Dawkins 2006, xvi). Although his “selfish gene” theory is presented as purified and concentrated Darwinism, reduced to its very essence, this work differs from Darwin’s description of evolution in some significant ways. The central argument of his book, *The Selfish Gene*, for instance, is that evolution is all about the natural selection of genes, and genes alone take Darwin’s theory of evolution by natural selection to its logical conclusion according to Dawkins (Elsdon-Baker,7). Dawkins defines this view in *Skeptic Magazine* as follows: “Darwinism is the differential survival of self-replicating genes in a gene pool, usually as manifested by individual behavior, morphology, and phenotypes” (Miele, 82). Yet, as Elsdon-Baker asserts, Darwin himself had no notion of ‘the differential survival of self-replicating genes in a gene pool.’ Furthermore, Dawkins and Darwin identify a different unit of selection; Dawkins cites the gene, while for Darwin, it is the individual organism. Dawkins’ idea of natural selection hinges the survival of the gene, whereas Darwin’s version is based on the transmission of variation

(Elsdon-Baker,103). Like neo-Darwinists before him, Dawkins has conflated his own ideas with Darwinism.

The term neo-Darwinian was originally coined by Darwin's friend George Romanes in the early 1890s as a slightly derogatory term to describe the theories of Wallace and Weismann (Elsdon-Baker,99).³⁸ Wallace's book *Darwinism* published in 1889 outlines *his* version of 'pure' Darwinism, and it is this version of Darwinism that we tend to think of today, one that is wholly reliant on natural selection with no role for the inheritance of acquired characters (Elsdon-Baker,108). Neo-Darwinism is a hybridized approach to evolution that is only partly based on Darwin's ideas. Wallace provided the idea of natural selection and, like contemporary neo-Darwinists, was a strict selectionist, while Weismann apparently introduced the idea of the isolation of the germ line, invalidating any other method of evolution *but* natural selection. It is because Wallace and Weismann's ideas were *not* strictly Darwinian that they were called *neo-Darwinian* (Elsdon-Baker, 104). While the concept of evolution was not new when Darwin published *On the Origin of Species*, his theory was innovative in two key ways. First, his assertion that life has evolved gradually over time. And second, he proposed natural selection³⁹ as the method by which evolution occurred. Although the theory of evolution quickly became orthodox, evolution by means of natural selection (Darwinism), was subject to critique from a number of competing evolutionary theories – some of which

³⁸ Alfred Russel Wallace, OM, FRS (8 January 1823 – 7 November 1913) was a British naturalist, explorer, geographer, anthropologist and biologist. He is best known for independently proposing a theory of evolution due to natural selection that prompted Charles Darwin to publish his own theory. Friedrich Leopold August Weismann (Frankfurt am Main, 17 January 1834 – Freiburg, 5 November 1914) was a German evolutionary biologist. Ernst Mayr ranked him the second most notable evolutionary theorist of the 19th century, after Charles Darwin. Weismann became the Director of the Zoological Institute and the first Professor of Zoology at Freiburg.

³⁹ The differential survival and reproduction of organisms with genetic characteristics that enable them to better utilize environmental resources.

significantly downplayed the role of natural selection or saw it as less important than other progressionist mechanisms (Eldson-Baker,84). Evolution by means of natural selection was disputed on the grounds that Darwin hadn't provided evidence showing how the inheritance of beneficial traits actually happened, or how these differences might be sustained and strengthened through the generations instead of simply blending in with the larger population (Eldson-Baker,4). It wasn't until the 1930s that developments in genetics fully addressed these concerns, producing what is commonly called the modern synthesis.⁴⁰ Dawkins and others also refer to the joining of genetics and evolution by natural selection as the 'neo-Darwinian' synthesis. The synthesis seemed so logical and powerful that soon natural selection of genetic variations was seen as the only possible method of evolution (Eldson-Baker,6). Stephen J. Gould refers to this as the hardening of the modern-synthesis, which became even more rigid in the 1960s when the gene (rather than groups within species or individual organisms) was identified as the level at which selection occurs (Eldson-Baker,6). Thus, it is misleading of neo-Darwinists to claim that the modern synthesis of genetics and natural selection is 'pure Darwinism.' Indeed, as Eldson-Baker indicates, it's not just that Darwin didn't know about genes, but his conception of natural selection is significantly different than that of the neo-Darwinists. The rigid natural selectionism that we associate with orthodox Darwinism is Wallace's development and this involved rejecting some of Darwin's own ideas (Eldson-Baker,99). Darwin began developing the concept of pangenesis - a particulate process that, as well as accounting for adaptation by natural selection, also allowed for use and disuse, and for

⁴⁰ Mendel's work on genetics provided a partial solution to this problem, but the either/or, stop-start nature of genetic inheritance seemed at odds with the gradualism that was needed to explain evolution by natural selection. The work of J.B.S. Haldane, Sewall Wright and Ronald Aylmer Fisher in the 1920's and '30s provided the necessary resolution (Eldson-Baker,5)

an organism's environment to play a major part in its evolution - almost as early as he began developing the idea of natural selection.⁴¹ Furthermore, as current trends in research change, it is just possible that Darwin's ideas of pangenesis might not have been so far off the mark as the neo-Darwinists assume (Eldson-Baker, 94).

No matter how compelling and forceful his presentation is, it is important to keep in mind that Dawkins' approach is just one of the many avenues of thinking on evolution. He frames the ongoing discussion as part of the conflict between evolution and creationism and takes a speculative, combative approach that will be familiar to readers of *The God Delusion* (Eldson-Baker, 16). He maintains that current debates in evolutionary biology that challenge the notion of evolution working solely by natural selection of genes are challenges to Darwinism (Eldson-Baker, 104). In fact, they are challenges to *neo*-Darwinism. The concept of pangenesis demonstrates that Darwin was far from the pure natural selectionist that neo-Darwinists often assume he was (Eldson-Baker, 95). It is *neo*-Darwinism which holds at its heart the doctrine that there can be no impact from the environment on any unit of heredity (Eldson-Baker, 106). For neo-

⁴¹ Pangenesis was Darwin's, entirely speculative, concept of how inheritance might occur. Darwin proposed countless minute particles which he called 'gemmules' that are released by each part of an organism at every stage of its development. Each gemmule could reproduce an exact copy of the part from which it was released. They must have a natural affinity which drew them together from all corners of the body to the sexual organs, or the areas where asexual reproduction took place. They not only played a part in the production of the next generation, but 'latent gemmules' could lie dormant and intact in order to be transmitted to future generations (Eldson-Baker, 92). The concept had to involve particles that preserve variation from generation to generation; particles are also needed to solve the problem of atavism – the reappearance of ancestral traits several generations later. His concept contrasts with modern classical genetics in three significant ways. In the first place, in modern classical genetics, the body cells are separate from the germ cells involved in reproduction, so only the information in germ cells is actually ever used to make a new organism. Secondly, Darwin didn't propose any mathematical laws to describe how different gemmules might be expressed – an essential feature of modern genetics. Lastly, pangenesis allows for a number of kinds of inheritance of acquired characteristics because gemmules could be developed and released during an organism's life in response to changing conditions. This contrasts entirely with genetic theory in which the genes involved in reproduction are never altered from generation to generation, they are merely exchanged during sexual reproduction or mutated during the reproductive process (Eldson-Baker, 93).

Darwinists, evolution can only take place through mutations in the heritable material of sex cells – what we currently think of as genetic material. Following the discovery of DNA, neo-Darwinists subscribed to the ‘central dogma’ of molecular biology introduced by Crick, believing that information could only be transferred from DNA to protein, and never be transferred from protein to DNA. The suggestion that the environment might have an impact on the genotype,⁴² might seriously weaken Dawkins’ singular vision of the selfish gene theory of evolution (Eldson-Baker,18). However, there has always been a contingent of evolutionary scientists who believed that the dogmatic neo-Darwinian line was misplaced and new research is supporting this perspective (Eldson-Baker, 13).

The most recent empirical research is blurring and complicating the apparently inexorable logic of the selfish gene vision. Eldson-Baker asserts that “(t)he shift has been so dramatic that I do not know of many practicing evolutionary biologists who are now committed ‘gene centrists’ in the Dawkins mould” (Eldson-Baker,11). The role of genes has turned out to be far more ambiguous than previously imagined (Eldson-Baker,10). The developing science of epigenetics may be showing how DNA may be bypassed altogether, enabling traits to be passed on “epi-genetically” – that is, outside the genes.⁴³ If this is the case, then the gene-centric view of many neo-Darwinists might start to look rather outdated (Eldson-Baker,119). Epigenetics may well be another key evolutionary mechanism, working in tandem with mutation and natural selection. Horizontal gene transfer is a new area of research that is also calling the narrow confines of the selfish

⁴² The genetic makeup, as distinguished from the physical appearance, of an organism or a group of organisms.

⁴³ The focus and meaning of epigenetics have both changed substantially since its inception in the 1940s by Conrad H. Waddington. Modern biologists disagree about precisely what it does mean but the core of the science is how genes are expressed – that is, just what effect the genes have on the organism. Epigeneticists talk about how particular genes may be ‘marked’, or switched on and off. (Eldson-Baker,119).

gene hypothesis into question. Horizontal gene transfer is the transmission of genetic elements sideways between individuals of the same generation rather than down the generations through the process of reproduction. Most interestingly, this kind of transfer can happen between organisms of vastly different species. These new genetic elements can then be passed down the generations via the usual process of reproduction (Elsdon-Baker, 133).

With their theory of evolution through punctuated equilibrium, Stephen Jay Gould and his supporters have provided one of the longest running and highest profile challenges to the Dawkins' supremacy.⁴⁴ Punctuated equilibrium envisages long periods of stability during which species changed little, occasionally interrupted by sudden (on the geological time scale) shifts to new species or range of species. Gould asserted that the fossil record shows that life, while becoming more diverse in terms of species, has

⁴⁴ Gould and Dawkins have famously clashed on a number of issues, including their interpretations of evolutionary theory and their understanding of the relationship between religions and science. Philosopher of biology, Kim Sterelny published, *Dawkins vs. Gould: Survival of the Fittest* detailing and analysing their differing views on evolution specifically and science more broadly, looking at the ways it informs their views on its application with respect to socio-biology. Sterelny suggests that "one sharp contrast between Dawkins and Gould is on the application of science in general, and evolutionary biology in particular, to our species" (162). While Dawkins is "fully committed to the idea that we can understand ourselves only in an evolutionary framework," (164–165) Gould rejects sociobiology. Sterelny speculates that the tendency "not to emphasise the importance of development and history in imposing constraints on adaptation, the problems in translating microevolutionary change into species-level change, the role of contingency and mass extinction in reshaping evolving lineages, or the importance of paleobiology to evolutionary biology likely played a part in Gould's hostility" (166), but notes that according to Gould the ideas of sociobiology are "dangerous and ill-motivated as well as wrong. They smack of hubris, of science moving beyond its proper domain, and incautiously at that" (166). In *Rocks of Ages*, Gould sought to address the relationship between religion and science with his NOMA theory. He proposes this theory of Non-overlapping magisteria as "a blessedly simple and entirely conventional resolution to ... the supposed conflict between science and religion." (Gould 1999, 3). He defines magisteria as "a domain where one form of teaching holds the appropriate tools for meaningful discourse and resolution"(Gould 1999, 5) and describes the NOMA principle as "the magisterium of science covers the empirical realm: what the Universe is made of (fact) and why does it work in this way (theory). The magisterium of religion extends over questions of ultimate meaning and moral value. These two magisteria do not overlap, nor do they encompass all inquiry (consider, for example, the magisterium of art and the meaning of beauty)." (Gould 1999, 6). Many, including Orr, have admired the sentiment underlying Gould's proposal but have rejected it for being too simplistic in creating an artificial separation between the two that is too often blurred in practice for it to be very useful. Not surprisingly, Dawkins rejects NOMA completely.

actually become less varied in its range of basic forms since the first explosion of multi-cellular life (Gould 2002). Furthermore, he and Niles Eldredge argued that the fossil record demonstrates that species show very little change from the first time they appear in the record to the time they disappear. Also, from time to time throughout the long history of the earth, huge numbers of species disappear and new ones appear in events called ‘mass extinctions.’ Gould argued that such events played a huge part in the evolution of new species. According to them, evolution appears to jump from one species to another with long periods of stability in between – in complete contrast to the gradual but continuous change of the neo-Darwinian model (Gould 2002). According to Gould, the neo-Darwinian view envisaged a gradual process of improving adaptation, increasing complexity and variety through natural selection over the entire span of life on earth – frequently interrupted by catastrophes such as meteorite impacts, but essentially moving on all the time (Elsdon-Baker, 129). For Dawkins, the development of life through evolution is entirely about natural selection of genes (Dawkins *Selfish* 2006). The few random mutations that improve survival thrive, and those that do not are eliminated. Through the gradual change in genes, driven by natural selection, population or lineages become adapted to their physical circumstances (Elsdon-Baker, 128). Alternatively, Gould asserted that evolution happened not at the level of the gene, but at the level of the species, citing the fossil record as evidence. Dawkins responded in, *The Blind Watchmaker*, that the punctuated equilibrium is a ‘minor gloss’ an ‘interesting but minor wrinkle on the surface of neo-Darwinism and that it lies firmly within the neo-Darwinian synthesis.’ But this was adamantly denied by Gould and Eldredge without rejecting Darwinian evolution, as Gould was an ardent Darwinist (Elsdon-Baker, 130). Gould

suggested that the range of evolutionary possibilities is limited by some as yet unknown mechanism that is consistent with Darwinian evolution (Gould 2002). This mechanism would explain why evolution has been conservative for long periods. Evolutionary development biology (evo-devo) is demonstrating that the standard picture of natural selection weeding out any traits which are not helpful and encouraging those that are is inadequate. Biologists are beginning to see that the process is much more complex than that. Toolkit genes (genes that code for the development of an organism) and an organism's development are both subject to an elaborate web of non-linear interactions and feedback mechanisms as though organisms develops in constant conversation with themselves (Elsdon-Baker, 141). There is some evidence that organisms actively influence their own evolution through some proteins. There is also some evidence that, as a result of these feedback loops, evolution can be sudden rather than gradual. Research in this field might well provide the as-yet missing mechanism that will support Gould and Eldredge's picture of sudden spurts of evolution (Elsdon-Baker, 141). All these developments are showing that evolution may be far, far more complicated than the neo-Darwinian synthesis allows. It may be that the idea of evolution solely or predominantly by means of natural selection has to be rethought. And yet, Dawkins is adamant that there is only one valid way of understanding evolution. This is neo-Darwinian imperialism. What they promoted as scientific thinking was actually a series of uncriticised ideologies.

Dawkins' Account of the Biological Roots of Religion:

Given that Dawkins' research background is in ethology,⁴⁵ it is not surprising that he did not limit his 'selfish gene' based theory of evolution exclusively to physical traits, but extended it to include the evolution of behaviour. Following his logic, if animals evolve, so must their behaviour, and, gene selection has been a very successful way of explaining some otherwise inexplicable patterns of behavior. Furthermore, if this theory is applicable to animals, it must also be applicable to humans (Eldson-Baker, 14).

Although Dawkins' claims that he is discussing the biological roots of religion, his work falls under the more controversial umbrella of sociobiology. According to Dawkins, morality and religious behavior are universal, and "universal features of a species demand a Darwinian explanation" (Dawkins 2006, 166). Dawkins asserts that, although there are some other theories on the origin of religion which might hold some psychological truth, they miss the point of Darwinian explanations (Dawkins 2006, 168).⁴⁶ In order to distinguish what he means by a Darwinian explanation, Dawkins introduces the concept of *proximate* and *ultimate* explanations, roughly, explanations of the *how*, and the *why* of a phenomenon, stating that Darwinian thinkers are interested in ultimate explanations.⁴⁷ While a possible proximate explanation of religion would

⁴⁵Ethology: is a branch of zoology concerned with the study of animal behavior. Ethologists take a comparative approach, studying behaviors ranging from kinship, cooperation, and parental investment, to conflict, sexual selection, and aggression across a variety of species.

⁴⁶Such as: it, "gives consolation and comfort; fosters togetherness in groups; satisfies yearning to understand why we exist" (Dawkins, 163)

⁴⁷As we have seen, Dawkins' understanding of evolution is not the only possible way of understanding Darwin's theory or evolution more broadly, however, throughout the following section, when we discuss Dawkins' ideas, we will use evolutionary terms as Dawkins defines them. Dawkins explains the distinction between proximate and ultimate explanations as follows: "The proximate explanation for the explosion in the cylinder of an internal combustion engine invokes the sparking plug. The ultimate explanation concerns the purpose for which the explosion was designed: to impel a piston from the cylinder, thereby turning a crankshaft" (Dawkins, 168). Dawkins is careful to be clear that "the Darwinian ultimate question is not a better question, not a more profound question, not a more scientific question than the neurological proximate question. But it is not the one that I am talking about here (Dawkins, 169). He does not make these caveats about any of the other theories with a less clear basis in the 'pure' sciences.

probably be a neurological explanation, an ultimate explanation would involve explaining the existence of this neurological function in terms of evolutionary theory. As Dawkins puts it, “even if neurologists were to locate a ‘god center’⁴⁸ in the brain, Darwinians, like me, will want to understand the selection pressure that favoured it” (Dawkins 2006, 168). Thus, Darwinians, like himself are not satisfied what they consider to be explanations that do not engage with the more fundamental evolutionary factors. In response to political explanations that identify religion as a tool used by the ruling class to subjugate the underclass, the Darwinian thinker would want to know why people are vulnerable to the charms of religion and therefore open to exploitation (Dawkins 2006, 169). In order to develop a Darwinian explanation for religion, Dawkins asks “what pressure or pressures exerted by natural selection originally favoured the impulse to religion?” (Dawkins 2006, 163).

Dawkins begins his evolutionary explanation by introducing the “standard Darwinian consideration of economy” as one of the central principles of natural selection, stating that “ruthless utilitarianism trumps even if it doesn’t always seem that way” (Dawkins 2006, 163). Thus, for Dawkins, the persistence of religion is particularly problematic because “religion is wasteful and extravagant and Darwinian selection targets and eliminates waste” (Dawkins 2006, 163). In order to demonstrate that this seeming wastefulness does not disqualify religion from Darwinian explanation, he provides a number of examples of seemingly frivolous behavioral or physical adaptations which actually benefit the survival of an individual’s genes (mating rituals, a peacock’s

⁴⁸ Some scientists hope use neurology to locate and identify the portions of the brain that are responsible for mystical, religious experiences, this, or these areas are referred to as the ‘god centre’ in the brain.

tail and “anting”) ⁴⁹ (Dawkins 2006, 163) and introduces what I would call the central assumption of Darwinian explanation: given that Darwinian logic dictates that natural selection “punishes wastage of time and energy,” if a behavioral or physical adaptation persists, Darwinians will presume with great confidence that it is ‘for’ something, because if the adaptation wasn’t “positively useful for survival and reproduction, natural selection would long ago have favoured individuals who refrained from it” (Dawkins 2006, 163). Thus, in the specific case of anting, although there is currently no consensus on the purpose of this behavior, Darwinians assume that it serves some significant purpose and that “if birds didn’t do it, their statistical prospects of genetic success would be damaged” (Dawkins 2006, 163).

Although one might be tempted to draw a parallel between anting and religion – just like anting, religion persists although it costs time, energy and resource and there is, as yet no, consensus with respect to its evolutionary function – Dawkins insists that they are not comparable because religion is not obviously about the perpetuation of an individual’s genes, and in fact contributes to the opposite, death or celibacy (Dawkins 2006, 164). Dawkins claims that by assessing the question of Darwinian benefit we can confidently reject the superficial parallel between behaviours like anting and religion (Dawkins 2006, 164). He cites philosopher Daniel Dennett’s example of the common cold to support his assertion. Although the common cold is as ubiquitous as religion among people, there is no question that the cold has no Darwinian “benefit” to

⁴⁹ “Anting” is a behavior observed in birds. Birds will either pick up ants with their beak and rub them over their feathers, or lie over an anthill. Although there is much speculation about the function of this behaviour (anting might act as way of reducing feather parasites such as mites or in controlling fungi or bacteria through the discharge of formic acid from the ants onto the feathers, that it makes the ants edible by removing the formic acid or that it might be related to feather molting) there has been no convincing support for any of these theories.

humankind (Dawkins 2006, 165). While a Darwinian normally defines “benefit” as some enhancement to the survival of the individual’s genes, there are three possible alternative targets of benefit - the group, another individual, the adaptation itself - which might explain not only the persistence of religion but might provide some insight into its evolutionary origins. The possibility of seeing the group as a potential target for Darwinian benefit arises from the theory of group selection,⁵⁰ which Dawkins defines as the “controversial” idea that Darwinian selection chooses among species or other *groups* of individuals (Dawkins 2006, 170). However, Dawkins rejects this line of explanation, asserting that there are formidable objections to the concept of group selection, and arguing that some biologists betray a confusion between true group selection and what should more properly be called kin selection or reciprocal altruism.⁵¹ Although Dawkins admits that, in principle, group selection could happen, he rejects the idea that it amounts to a significant force in evolution and that lower-level selection is always likely to be a stronger explanation (Dawkins 2006, 170). The second possibility is that the observed individual may be working under the manipulative influence of genes in another individual such as a parasite. This is a theory that Dawkins advocated in *The Extended Phenotype*. In this book he argues that “an animal’s behavior tends to maximize the survival of the genes ‘for’ that behavior, whether or not those genes happen to be in the body of the particular animal performing it” (Dawkins 2006, 165). Extrapolating from

⁵⁰ Group selection describes natural selection operating between groups of organisms, rather than between individuals. This would produce adaptations that benefit the group, rather than the individual.

⁵¹ Kin selection is an evolutionary theory that proposes that people are more likely to help those who are blood relatives because it will increase the odds of gene transmission to future generations. The theory suggests that altruism towards close relatives occurs in order to ensure the continuation of shared genes. Reciprocal altruism is an evolutionary theory suggesting that altruism (defined as an act of helping someone else although potentially incurring some cost for this act) could be explained from an evolutionary perspective by suggesting that it might be beneficial to incur this cost if there is a chance of reciprocity (the person I helped might behave altruistically towards me in the future).

the premise of *The Extended Phenotype* brings us to the third possible target for Darwinian benefit. Dawkins states that the fact that religion is ubiquitous means that it has worked out to the benefit of something. Essentially, Dawkins is proposing that, to the extent that they behave as replicators,⁵² religious ideas act in their own benefit (Dawkins 2006, 165).

Dawkins identifies himself as one of an increasing number of biologists who see religion as a by-product of something else (Dawkins 2006, 172). He proposes that those who speculate about persistence and Darwinian benefit need to reframe the question because it is possible that the adaptation in question does not have a direct survival value of its own, but is a by-product of something else that does (Dawkins 2006, 172). He cites the “self-immolation behavior” of moths as an example of what he means.⁵³ Moths fly into open flames, not as a distinct behavior but, Dawkins speculates, as a by-product of their celestial navigational systems (Dawkins 2006, 173). Dawkins postulates that, like the self-immolating moths, religious behavior could be a misfiring – an unfortunate by-product of an underlying psychological propensity that was or may still be useful

⁵² In the context of evolution, a replicator is an entity (such as a gene, a virus, or a meme) which can get itself copied, including any changes (mutations) it may have undergone. We will go into the notion that ideas can behave as replicators a little later in this section.

⁵³ Although it is not my intention in this thesis to refute Dawkins’ particular arguments, it is worth very quickly calling into question the fundamental presupposition underlying his assertion that religion should be called a misfiring. Dawkins assumes that he can draw unjustified conclusions about human behavior based on animal, or in this case, insect behavior. Biologist Richard Lewontin calls the confusion between qualities of animals and qualities of human society the problem of homology and analogy. By homologous traits, biologists mean those properties of an organism that are shared by different species because they have a common biological origin and some common biological genetic ancestry, and they derive from common features of anatomy and development. Even though they look very different and are used for very different purposes, the bones of a human arm and of a bat’s wing are homologous because they are anatomically derived from the same structures and influenced by the same genes. On the other hand, a bat’s wing and an insects’ wing are only analogous, that is they look superficially alike and they seem to serve the same function, but they have no origin in common at the genetic or morphological level (Lewontin, 95). It is very easy to confuse analogy for homology, however, just because two things seem similar does not mean that they are biologically similar. As Lewontin cautions, analogy is in the eye of the observer (Lewontin, 95).

(Dawkins 2006, 174).⁵⁴ According to this view, religion is not itself the product of natural selection, rather, some other tendency, with some other benefit was naturally selected in our ancestors and only incidentally manifests itself as religious behavior (Dawkins 2006, 174). Thus, the Darwinian question (as defined by Dawkins) becomes, what is that ‘other tendency’? What is religion a by-product of?

The specific hypothesis that Dawkins proposes revolves around the gullibility of children, although he is clear to stress that it is only an example of the kind of explanation he means, and that he is much more “wedded to the general principle that the question should be properly put” than he is to any specific answer (Dawkins 2006, 174). To explain his hypothesis, he argues that we survive based on the accumulated experience of previous generations and that experience needs to be passed on to children for their protection and well-being. Therefore, natural selection builds child brains with a tendency to believe whatever their parents and tribal elders tell them (Dawkins 2006, 176). The crux of Dawkins’ argument is that although such trusting obedience is valuable for survival, its inevitable by-product is vulnerability to infection by mind viruses as the ‘truster’ has no way of distinguishing good advice from bad (true things, like crocodiles will kill you, from false things, such as the existence of a deity) (Dawkins 2006, 176).⁵⁵

In order to reinforce his broader claim that religion should be considered a misfiring of some useful tendency, Dawkins moves away from the specific postulate that

⁵⁴ Dawkins supports this perspective with reference to the work of ethologist Robert Hinde (*Why God Persists*) and anthropologists, Pascal Boyer (*Religion Explained*) and Scott Atran (*In Gods We Trust*) who have independently promoted the general idea of religion as a by-product of normal psychological dispositions (Dawkins, 177). Although Dawkins doesn’t specify what he means by useful, given the context, I think it’s safe to assume that ‘useful’ relates to Darwinian benefit and evolutionary survival value.

⁵⁵ Dawkins repeatedly suggests that religion can and should be thought of as functioning like a virus. We will elaborate in this idea a little later in this section.

religion is a by-product of childhood gullibility and provides some alternate possibilities, providing explanations based in evolutionary psychology, child psychology and philosophy. According to Dawkins, evolutionary psychologists suggest that the brain is a collection of organs (or 'modules') for dealing with a set of specialist data-processing needs, and religions can be seen as a by-product of the misfiring of several of these modules, such as the module for forming theories of other minds, for forming coalitions, and for discriminating in favour of in-group members and against strangers (Dawkins 2006, 179). He suggests that any of these could serve as the human equivalent of the moth's navigational system and is vulnerable to misfiring in the same kind of way as childhood gullibility (Dawkins 2006, 179). He cites the work of psychologists Paul Bloom and Deborah Keleman who argue that the human mind, especially as children, has a natural propensity towards dualism and teleology (inherent tendency to assign purpose to everything) which predispose us, given the right conditions, to religion (Dawkins 2006, 180-181).⁵⁶ Dawkins speculates that the Darwinian advantage of innate dualism and teleology might come about in an increased capacity for predicting the behaviour entities in our world, which is important for our survival (Dawkins 2006, 180).

He defends this hypothesis with reference to philosopher Daniel Dennett's three-way classification of the 'stances' - physical, design and intentional - that we adopt in trying to understand and predict the behavior of entities such as animals, machines or each other.⁵⁷ Specifically, Dawkins supports this hypothesis with a discussion of

⁵⁶ According to Dawkins, our innate dualism prepares us to believe in a 'soul' or in the existence of a deity that is separate from and independent of matter. Childish teleology sets up for religion by imputing the perceived purpose to God (Dawkins 2006, 181).

⁵⁷ The core idea is that, when explaining and predicting the behavior of an entity, it can be viewed at varying levels of abstraction. In principle, the more concrete the level, the more accurate the predictions are

Dennett's 'intentional stance.' According to Dawkins, we are biologically programmed to impute intentions to entities whose behavior matters to us (Dawkins 2006, 183).⁵⁸ An entity is assumed to be not merely designed for a purpose, but to be, or contain an agent with intentions that guide its actions. Dawkins asserts that it seems entirely plausible to him that the intentional stance has survival value as a brain mechanism that speeds up decision-making in dangerous circumstances and in crucial social situations (Dawkins 2006, 182). He goes on to suggest that both the 'intentional stance' and the 'design stance,' (considering the function of an entity, in order to understand how it works) are useful brain mechanisms, important for speeding up the second-guessing of entities critical for survival, such as predators or potential mates (Dawkins 2006, 182). But, like other brain mechanisms, they can misfire and we end up imputing intentions to entities without agency or design to entities that have not been designed (Dawkins 2006, 184).

The last explanation he offers presents religion as a by-product of psychological predispositions that are constructively irrational.⁵⁹ He finds Dennett's proposal that the irrationality of religion is a by-product of our irrational, in-built tendency to fall in love - which presumably has genetic advantages - "especially intriguing" (Dawkins 2006, 184).

likely to be. Physical stance, the first level of abstraction, is concerned with the laws of physics and chemistry. When we predict where a ball is going to land based on its current trajectory, we are taking the physical stance. Design stance is the second level of abstraction and is commonly used in biology and engineering. It is concerned with purpose, function and design. When we predict that a bird will fly when it flaps its wings, on the basis that wings are made for flying, we are taking the design stance. The Intentional stance operates at the greatest level of abstraction and is concerned with things such as belief, thinking and intent. When we predict that the bird will fly away because it knows the cat is coming, we are taking the intentional stance.

⁵⁸ He cites Paul Bloom, quoting experimental evidence that children are especially likely to adopt the intentional stance (Dawkins, 183).

⁵⁹ Although he doesn't define what he means by irrational, given the context, it seems to refer to something illogical, where Dawkins understanding of what logical is strongly informed by what he calls Darwinian logic, or what appears to be logical in light of evolution. For example, according to Dawkins, falling in love with one and only one person is irrational because we accept that there is lots of love to be shared among other relations, and this behaviour does not necessarily confer genetic advantage (Dawkins, 186).

He asserts that falling in love is an extremely potent force in the brain and it is not surprising that some mind viruses have evolved to exploit it (Dawkins 2006, 186). He concludes that it is easy to see ‘falling in love’ as a special case of Lewis Wolpert’s ‘irrational persistence’ - his claim in *Six Impossible Things Before Breakfast* that in some circumstances, it is better to persist in an irrational belief than to vacillate even if new evidence favours a change. He supplements ‘love theory’ with a discussion of the evolutionary benefits of self-deception based on the work of Robert Trivers in *Social Evolution* and anthropologist Lionel Tiger in *Optimism: The Biology of Hope*. According to this perspective, people have a biological predisposition towards self-deception which is, like love, a form of ‘constructive irrationality’ (Dawkins 2006, 187). Dawkins asserts that the relevance of these claims to a Darwinian understanding of religion needs no “spelling out” (Dawkins 2006, 188). However, for the sake of clarity, I think that it is safe to assume that Dawkins is implying that this biological predisposition for self-deception can account for the persistence of religious beliefs that are unsupported by empirical evidence.

Dawkins also applies this concept of misfiring to uncovering the evolutionary roots of human morality, maintaining that the motives underlying human morality, the urge to kindness, to altruism, to generosity, to empathy, and to pity are all misfirings, Darwinian mistakes “blessed and precious mistakes” resulting from four basic “selfish”⁶⁰ altruistic drives (Dawkins 2006, 221). According to Dawkins, there are a number of

⁶⁰ Dawkins is using selfish here as he defined it in the context of “the selfish gene” which he describes as follows,” the whole idea of the selfish gene is that the unit of natural selection is not the selfish organism, nor the selfish group, or selfish species or selfish ecosystem, but the gene. It is the gene that in the form of information either survives for many generations or does not” (Dawkins 2006, 215).

fairly common circumstances in which genes ensure their own selfish survival by influencing organisms to behave altruistically. He identifies four altruistic drives which he claims can account for human morality and yet which ultimately function in the service of our selfish genes. The first two altruistic drives form the primary structure of altruism and can be observed in a variety of species. In the first case, kin altruism, a gene that programs individual organisms to favour their genetic kin is statistically likely to benefit copies of itself. The second case, reciprocal altruism, works because of asymmetries in needs and in capacities to meet them (Dawkins 2006, 216). The secondary structures of altruism are especially prevalent in human society - although examples can be observed in other species. In the third case, altruistic behavior is motivated by the importance of having a good reputation, which Dawkins argues is especially important in human society with language and gossip. The last altruistic drive may be related to social hierarchy. Dawkins argues that altruistic giving may be an advertisement of dominance or superiority (Dawkins 2006, 218). Dawkins cautions that it is important not to mis-state the reach of natural selection.⁶¹ Natural selection favours rules of thumb which work in practice to promote the genes that built them (Dawkins 2006, 220). These rules of thumb do occasionally misfire - for example, parental drive misfires to produce the human urge to adopt a child. Contrary to his discussion of religion, Dawkins is careful to specify in this context that misfiring or by-product carries no suggestion of the pejorative (Dawkins 2006, 221).

⁶¹ Dawkins claims that selection does not favour the evolution of a cognitive awareness of what is good for your genes, asserting that, that awareness had to wait for the twentieth century to reach a cognitive level, and even now, full understanding is confined to a minority of scientific specialists (Dawkins 2006, 220). Not surprisingly, Dawkins is one of the very few qualified to interpret for the rest of us.

Dawkins asserts that while conventional Darwinian selection of genes might have favoured psychological predispositions that produce religion as a by-product, it is unlikely to have shaped the specific details. Dawkins offers his meme theory as explanation, applying natural selection, and genetic drift to understand the evolution and spread of religious ideas (Dawkins 2006, 201), (Dawkins 2006, 189). Dawkins returns to his “gullible child” theory for the sake of illustration, asserting that it is representative of ‘by-product’ theories in general (Dawkins 2006, 188). This theory states that the child brain is, for good (i.e. Darwinian) reasons, vulnerable to infection by mental ‘viruses’ Dawkins claims that religion is one of these mental ‘viruses’. Dawkins claims that it doesn’t matter “what particular style of ‘nonsense’ infects the child brain, once infected, the child will grow up and infect the next generation with the same nonsense, whatever it happens to be” (Dawkins 2006, 188). Dawkins cites the work of nineteenth century anthropologist James Frazer who identifies certain general principles that are widespread across “the diversity of irrational human beliefs,” which suggests to Dawkins that the nonsense that infects vulnerable brains is not entirely random, arbitrary nonsense and that once entrenched in a culture, they persist, evolve and diverge in a manner reminiscent of biological evolution (Dawkins 2006, 188). He proposes that in order to apply some form of selection theory to those details, we must look at the cultural equivalents of genes – ‘memes’ which can be broadly defined as unit of cultural transmission (Dawkins 2006, 189).

Dawkins reminds us that in its most general form, natural selection must choose between alternative replicators. A replicator is a piece of coded information that makes

exact copies of itself,⁶² along with occasional inexact copies or mutations. He asserts that those varieties of replicator that happen to be good at getting copied become more numerous at the expense of alternative replicators that are bad at getting copied, calling this natural selection at its most rudimentary (Dawkins 2006, 191). Although he does provide the following caveat, “I am not saying that memes necessarily *are* close analogues of genes, only that the more like genes they are, the better will meme theory work; and the purpose of this section is to *ask* whether meme theory might work in the special case of religion” his follow up discussion demonstrates that he has effectively concluded that it does (Dawkins 2006, 196).

A Critical Examination of Sociobiology

The presentation of the evolutionary roots of morality and religion in *The God Delusion* serves a number of purposes. At its most basic, it allows Dawkins to promote the universal application of the scientific method to fully investigate and explain all phenomena. Furthermore, providing a biological origin allows Dawkins to effectively disprove - if not the existence of God, then at least revelation. By revealing the Darwinian roots of our sense of right and wrong, Dawkins is able to refute the assertion

⁶² Richard Lewontin is very critical of speaking as though genes, and presumably other replicators, are self-replicating. He argues that, “It is usually said that genes *make* proteins and that genes are *self-replicating*. But genes *make* nothing. A protein is made by a complex system of chemical production involving other proteins, using the particular sequence of nucleotides in a gene to determine the exact formula for the protein being manufactured. Sometimes the gene is said to be the “blueprint” for a protein or the source of “information” for determining a protein. As such, it is seen as more important than the mere manufacturing machinery. Yet proteins cannot be manufactured without *both* the gene and the rest of the machinery. Neither is more important. Isolating the gene as the “master molecule” is another unconscious ideological commitment, one that places brains above brawn, mental word as superior to mere physical work, information as higher than action. Nor are genes self-replicating. They cannot make themselves anymore than they can make a protein. Genes are made by a complex machinery of proteins that uses the genes as models for more genes. When we refer to genes as self-replicating, we endow them with a mysterious, autonomous power that seems to place them above the more ordinary materials of the body. Yet if anything in the world can be said to be self-replicating, it is not the gene, but the entire organism as a complex system” (Lewontin, 48).

that religion is necessary for people to be good (Dawkins 2006, 214). And yet, while he presents his ideas with the authority of science, Dawkins' work on human behavior in *The God Delusion* is mostly speculative. While his logic might be superficially persuasive, it is based in un-testable conjecture and the line between clear-sighted, scientifically informed speculation and Dawkins' own personal and political agenda is rarely clear. This is one of the fundamental problems of sociobiology, according to Richard Lewontin.

Sociobiology is a synthesis of scientific disciplines which attempts to explain social behavior by considering the Darwinian advantages of specific behaviors. It is often considered a branch of biology and sociology, but also draws from ethology, anthropology, evolution, zoology, archaeology, population genetics, and other disciplines. Within the study of human societies, sociobiology is closely related to the fields of human behavioral ecology and evolutionary psychology. Richard Lewontin is one of a number of evolutionary scientists who is highly critical of sociobiology for, among other things, its claims to describe a fundamental, universal human nature that, because it is coded in our genes, is both necessary and inevitable. According to Lewontin, sociobiological theories of human nature are constructed in three stages (Lewontin, 89). The first stage is comprised of a description of what human nature is really like, based in the attempt to build a fairly complete description of those features that appear to be common to all human beings, in all societies, in all places, in all times. The second stage involves claiming that those apparently universal characteristics identified in the first stage are, in fact, coded in our genes – thus, there is a genetic basis for religiosity, for morality, indeed, for any characteristics that appear to be built into the

human psyche and human social organization. The third stage involves asserting that natural selection, through differential survival and reproduction, has inevitably led to the particular gene characteristics of individual human beings, characteristics that are responsible for the form of society. Given that sociobiological theory has evolutionary theory as its foundation, it goes one step further than the purely descriptive biological theory of human nature articulated in the first two stages in order to explain and in some sense justify why we come to have these particular genes (Lewontin, 89).

Lewontin argues that the claims in the third stage serve to legitimize the *status quo* because it goes beyond mere description to claim that the human nature it describes is inevitable, given that it is the product of the universal law of the struggle for existence and the survival of the fittest (Lewontin, 90).⁶³ The critique that follows should be familiar by now – although sociobiologists claim to be describing scientifically revealed truths, they are at best offering their particular interpretations based on scientifically informed speculation, and at worst presenting an uncritical, unexamined description of their worldview with all its attendant prejudice and bias as though it was scientific fact. Lewontin categorically rejects the narrow, ahistorical claims of sociobiology, arguing that sociobiologists construct their description of what is universal in all human beings by drawing upon their own society and, to some extent, telling their own life stories. Having looked inward at themselves and outward at modern capitalist society for a description of human nature, they then extend it slightly further by looking into the anthropological record in order to assure us that those very same elements that they find in twentieth-

⁶³ Although it is not essential to our current discussion, Lewontin provides a very interesting discussion of the interrelationship between the production of scientific knowledge and the justification and perpetuation of existing social structures in *Biology as Ideology*.

century North America and Britain are also in one form or another, displayed by the others (Lewontin, 90). Further calling into question the foundational assumption of sociobiology – that the heritability of ‘universal’ traits provides evidence for a genetic basis of human social behavior – Lewontin argues that there is absolutely no evidence that these traits are inherited (Lewontin, 96).

Lewontin goes on to critique the assumption held by sociobiologists that we are essentially the instruments of our genes, the temporary vehicles through which they either succeed or fail to spread through the world (Lewontin, 13). He rejects that, as Dawkins put it, we are “lumbering robots” whose genes “created us body and mind” (Dawkins 1999, 13). Dawkins extends this view to all replicators (as he defines them) speaking as though religion is a powerful force acting on otherwise innocent victims (as we will see in chapter three). Lewontin asserts that this assumption - that we are totally at the mercy of genetic forces present within us from birth - is part of a deep ideological commitment that goes under the name of reductionism.⁶⁴ As we have seen reductionism prescribes a way of studying the world, which is to cut it up into individual bits that cause it and to study the properties of these isolated bits presuming that this will adequately describe the whole.

The Limits of Reductionism

Although reductionism clearly works for some scientific explanations, Lewontin maintains that it is not a universally applicable method for the study of all nature. The reductive approach is not just a way of simplifying the conceptual sciences. Formal reductions do not just present themselves, they are informed by an individuals’

⁶⁴ Recall our discussion reductionism from the first chapter.

worldview. Thus, they are not value free but are always parts of some larger enterprise. Furthermore, Lewontin asserts that not all of nature can be broken up into independent parts to be studied in isolation, and it is pure ideology to suppose that it can (Lewontin, 15). He states that reductionism, the ideology behind much of modern science, including modern biology, makes the atom or individual the causal source of all the properties of larger collections (Lewontin, 13). We have seen that Dawkins takes this approach with respect to evolutionary theory and it strongly influences the way he constructs his explanation of religion and morality. Given his focus on the gene and the individual as the locus of natural selection, Dawkins summarily dismisses even the possibility of considering greater social context when thinking about religion. Mary Midgley is also highly critical of the suggestion that reductionism is the only truly scientific - one that should take precedence over all other methods. She specifically targets Dawkins' reduction of culture into the standard unit of the meme (Midgley 2004, 56). Midgley argues that the trouble with this approach is that thought and culture do not have a granular structure and therefore cannot have distinct units for the same reason that ocean currents do not have one - namely because they are not objects, but patterns (Midgley 2004, 57). Midgley asserts that what she finds most worrisome is the hasty use of certain patterns that have been found useful in biology to explain human affairs where they have only a somewhat artificial application, at the expense of the directly relevant study of human motives (Midgley 2004, 87). She asserts the need to stop thinking about 'science' as if it was a single monolithic entity, treating it as an expanding empire, destined to one day take over the whole intellectual world and unite all knowledge into a, a unified, rational Theory of Everything balanced securely on a single foundation (Midgley 2004,

22-23). This is clearly in direct contrast with the Enlightenment version of science that Dawkins espouses. With its dual claims to infallibility and the formal unity of the whole of thought, Midgley asserts that the Enlightenment idea of science was imperialistic from the outset (Midgley 2004, 24). She writes that certain reductive ways of thinking that proved to be immensely successful in the early development of the physical sciences have been idealized, stereotyped and treated as the only possible forms of rational thought across the whole range of our knowledge (Midgley 2004, 13). She goes on to qualify that the trouble is not in the methods themselves, as they are admirable in their own sphere. The problem lies in the impulse to universalize them, exemplified by “the naïve academic imperialism that insists on exporting them to all other topics” (Midgley 2004, 13).

The Problem of Scientific Imperialism

Tina Beattie writes that scientists like Dawkins believe that they are the custodians and interpreters of the one and only truth. She goes on to assert that beliefs like this always mask imperializing tendencies which risk colonizing and negating different ways of interpreting the world (Beattie, 10). The problem with this perspective is that such singular and exclusive concepts of truth stifle plurality and difference. Too often, conviction in exclusive access to truth and knowledge justifies the silencing and ultimately the destruction of those who offer different versions of truth or reality. Beattie suggests that in its war on religion, scientific rationalism is simply the latest in the West’s long history of imperial domination by which it seeks to defeat every form of difference, including religious difference. The vast majority of the world’s religious believers belong among non-Western cultures, and they include many millions of women whose views are

seldom represented by their scholarly elites. This means that we need to cultivate a much greater awareness of both the limits and oppressive effects of a debate dominated by the opinions of a small clique of white English speaking men staging a mock battle about rationality and God (Beattie, 10). Midgley additionally argues for the recognition that there are many independent forms and sources of knowledge rather than the reductive conviction that one fundamental form underlies all knowledge and is capable of answering everything (Midgley 2004, 27). Contrary to the view of imperializing science, our knowledge is a network involving all kinds of lateral links, a system in which the most varied kinds of connection may be relevant for helping us meet various kinds of questions (Midgley 2004, 25). Conceptual monoculture cannot work because in almost all our thought, we are dealing with subject matters that we need to consider a multiplicity of aspects (Midgley 2004, 47).

In *The God Delusion*, Richard Dawkins perpetuates the view that science consists of simple, objective truths, and that biologists can and will know everything worth knowing about human existence. The powerful public image of science that he presents includes two distinct meanings. He praises science for being value-free, objective, unbiased, and neutral, defining it as a pure source of facts. He also presents it as perhaps the only legitimate source of values. The first way of defining science is as a pure articulation of objective facts about the world as it really is – a warehouse of data about things such as natural laws, measurements, chemical composition etc. The second is dependent on a particular worldview or paradigm; it is what Mary Midgley refers to as the “huge, ever-changing imaginative structure of ideas by which scientists contrive to connect, understand and interpret these facts” (Midgley 2004, 3). Dawkins doesn't

differentiate between these two meanings in *The God Delusion*, perhaps because he is oblivious to the way he conflates these two distinct concepts. His failure to make this distinction is at the heart of my critique of his representation of science. The general concepts, metaphors and images that make up the second definition of structure cannot possibly be objective and antiseptic in the same way as the ‘facts of science’. As we discussed in the first chapter, we have no way of talking about, let alone understanding evidence without an interpretive matrix, without the mediation of our particular worldviews. Because the ‘facts of science’ must be filtered through our interpretive frameworks, no one person can speak for science, or can claim that science is the unfettered voice of nature.

Elsdon-Baker warns us that confusion about what we can and cannot claim to *know* in the realm of science can have huge implications for society and it has contributed to a lack of trust in scientists. When scientists like Dawkins make claims that go beyond what we can really know through scientific research – for example that God’s existence or non-existence is a scientific fact about the universe, discoverable in principle if not in practice – it can contribute to public confusion and distrust about what science can and cannot say. As we have seen, Dawkins’ version of science does not necessarily fit with some of the models we have at our disposal to describe how we *know* things in science, and may indeed go beyond what some scientists see as being within the bounds of science (Elsdon-Baker, 183)

Chapter 3: Limited Definitions – Dawkins’ representation of God, Religion, Agnosticism and Atheism

This chapter will investigate the ways in which Dawkins' worldview informs his discussion of religion and will attempt to show that his use of the general term 'religion' is misleading and ill-informed. Although he presents his arguments as though they carry the authority of 'science,' most of his work in *The God Delusion* is either philosophical wrangling, speculation or simply personal opinion. Specifically we will demonstrate that his definition of religion and God are informed by his ideological commitments rather than any strong engagement with scholarship and that his nineteenth century perspective colours his understanding and treatment of religion. We will cast serious critical light on his claim that religion is and has been evil and that atheism is blameless.

It is clear that *The God Delusion* is not intended to be a balanced investigation of religion, or an unbiased application of Darwinian evolution to propose an explanation for the material origins of religion. It was written to demonstrate that belief in God's existence is a delusion – and a dangerous delusion at that. Dawkins is writing to justify a pre-existing set of conclusions, conclusions that are strongly informed by his worldview presuppositions. As such, he presents his arguments within a framework of meanings that prefigure his conclusions. In order to support his conclusions, his definitions are partial, or so narrowly circumscribed as to be effectively meaningless. We have already seen an example of this with his treatment of fundamentalism. This manipulation of meaning is not insignificant and is not limited to superficial digression but occurs at the very core of his argument, specifically in the way he defines God and religion.

Dawkins first concern in *The God Delusion* is to clarify and explain the difference between what he calls "Einsteinian religion" and supernatural religion. Dawkins provides the following quote, in which Einstein describes what he means when he

describes himself as religious, “(t)o sense that behind anything that can be experienced there is a something that our mind cannot grasp and whose beauty and sublimity reaches us only indirectly and as a feeble reflection, this is religiousness, In this sense I am religious” (Dawkins 2006, 19). Dawkins asserts that although he prefers not to call himself religious because it is destructively misleading because for the vast majority of people “religion” implies “supernatural,” he considers himself religious in the same sense as Einstein describes – although Dawkins stipulates that “cannot grasp” does not have to mean “forever ungraspable” because to his understanding, ‘science’ can and will lay bare all mystery and fully explain all of existence (Dawkins 2006, 19). According to Dawkins, although physicists, including Einstein have used the word ‘God’ when talking about the universe, they have meant it poetically or metaphorically. He rejects this usage, insisting that the word God should be used in the way people have generally understood it, to denote a supernatural creator that is appropriate for us to worship (Dawkins 2006, 13). Dawkins submits that the view of these physicists should be more properly called pantheism, which is really just ‘sexed up atheism,’ especially when compared to the supernatural perspectives of theism and deism.⁶⁵ According to Dawkins, “Pantheists don’t believe in a supernatural God at all, but use the word God as a non-supernatural

⁶⁵According to Dawkins, “theists believes in a supernatural intelligence who, in addition to his main work of creating the universe in the first place, is still around to oversee and influence the subsequent fate of his initial creation. In many theistic belief systems, the deity is intimately involved in human affairs. He answers prayers; forgives or punishes sins; intervenes in the world by performing miracles; frets about good and bad deeds, and knows when we do them (or even *think* about doing them)” (Dawkins 2006, 18). Compare with the Oxford English Dictionary’s definition: Theism – Generally used to mean belief in a deity or in deities, it also means belief in one God as creator and supreme ruler of the universe, without denial of revelation. Dawkins defines desists as those who “believe in a supernatural intelligence, but one whose activities were confined to setting up the laws that govern the universe in the first place. The deist God never intervenes thereafter and certainly has no specific interest in human affairs” (Dawkins 2006, 18). Compare with the Oxford English Dictionary’s definition: Deism – belief in the existence of a Supreme Being as the source of finite existence, with rejection of revelation and the supernatural doctrines.

synonym for Nature, or for the Universe, or for the lawfulness that governs its workings” (Dawkins 2006, 18).

This definition of pantheism is partial; I suspect that this is not only because it allows him to draw the conclusion that he intends, but is also a product of his limited conception of God (more on this later in the chapter). Although some scientists may use this term to refer to their understanding of the scientific laws governing the universe, this is not how it is universally defined. According to the Stanford Dictionary of Philosophy, pantheism can be understood as an alternative to, and denial of, theism and atheism. Pantheism refers to the concept of an entirely immanent God. Pantheists deny the idea that God is completely transcendent, "totally other" than the world or ontologically distinct from it. Contrary to theists, pantheists usually deny the existence of a personal God, rejecting the existence of a "minded" Being possessing the characteristic properties of a "person," such as having intentional states, and the associated capacities like the ability to make decisions. Although Pantheism rejects the idea of God having a personality, it does not reject the concept of divinity, understanding God to mean something like an all-inclusive divine Unity. Pantheists hold the belief that every existing entity (humans, animals, etc.) together, is a part of God – that the entire universe is divine. Pantheism was a common attitude in the early societies of Egypt, India, and Greece as well as many indigenous religious/spiritual traditions. The term derives from the Greek *pan* meaning all and *theos* meaning deity. This understanding of divinity and its relation to the world are not simply “metaphoric or poetic synonyms for the laws of the universe” (Dawkins 2006, 18). Therefore, while divinity is understood to be immanent in the material world, it is not reducible to the natural laws of the universe.

Many, if not most pantheists believe in an order of existence beyond the scientifically explainable universe, which could be called a supernatural dimension. Pantheism, as a general category, is not, as Dawkins asserts, “sexed-up atheism” (Dawkins 2006, 18). This is not to call into question his assertion that some physicists use ‘God’ metaphorically or poetically, rather this is the first indication that Dawkins is using definitions to suit his purpose and the first suggestion that Dawkins might suffer from a fundamental failure of the imagination when it comes to thinking about God.

The article on Pantheism in the Stanford Dictionary of Philosophy suggests that one of the primary reasons for equating pantheism with atheism is the assumption that belief in any kind of "God" must be belief in a personal God. This is the assumption that Dawkins makes explicitly in *The God Delusion*. As we have seen, Dawkins provides the most explicit definition of what he means by God in the context of the God Hypothesis, asserting that God is a personal, superhuman, supernatural intelligence, possessing unpleasantly human qualities, who deliberately designed and created the universe and everything in it (Dawkins 2006, 31 and 38). Although he provides this narrowly circumscribed definition of God, he goes on to assert although Yahweh, the God of the Old Testament, is the supernatural god most familiar to his readers “the God Hypothesis should not stand or fall with its most unlovely instantiation, Yahweh, nor with his insipidly opposite Christian face, ‘Gentle Jesus meek and mild’” (Dawkins 2006, 20 and 31). He continues: “For brevity I shall refer to all deities, whether poly- or monotheistic, as simply ‘God’” (Dawkins 2006, 35). Dawkins asserts that his goal is not to attack any particular version of God or gods but rather to attack “God, all gods, anything and everything supernatural, wherever and whenever they have been or will be invented”

(Dawkins 2006, 36). It is not entirely clear whether he believes that the narrow definition of God he provides really does stand for all the possible iterations of God or whether he is over extrapolating from his specific understanding of what God means in order to broaden his rejection of religion.

Dawkins writes that although he “is aware that critics of religion can be attacked for failing to credit the fertile diversity of traditions and world-views that have been called religious,” given that his purpose is “to decry supernaturalism in all its forms, the most effective way to proceed will be to concentrate on the form most likely to be familiar to my readers – the form that impinges most threateningly on all our societies” (Dawkins 2006, 36). He explains: “For most of my purposes, all three Abrahamic religions can be treated as indistinguishable. Unless otherwise stated, I shall have Christianity mostly in mind, but only because it is the version with which I happen to be most familiar. For my purposes the differences matter less than the similarities” (Dawkins 2006, 37). As we will discuss in greater detail later in the chapter, to suggest that religion can be universally defined *and* condemned by extrapolating from specific denominations of particular traditions is not only to deliberately and uncritically reduce a huge diversity of human thought and experience to conform to Dawkins’ pre-existing definitions and biases, but presents a distorted view of a complex and varied human phenomenon.

As we have seen, Dawkins argues that religion is a by-product or misfiring of some other predisposition that was naturally selected in our ancestors, and that the specific content of religion can be accounted for with his theory of mental ‘viruses’ or a ‘memes.’ However, although Dawkins attempts to uncover the biological origins of

religion, he only provides a speculative account of the biological predisposition for belief. Dawkins demands proof of God's existence because according to his perspective, only that which can be proved is worthy of belief. However, as Tina Beattie reminds us, the word 'God' has almost never been used to denote a 'thing' whose existence can be proved. She goes on to remind us that people are not irrational or deluded when they say that they believe in things like love, beauty, compassion, or hope whose 'existence' we cannot prove (Beattie, 13). His cursory attempt to refute the traditional arguments for God's existence presents religion as a series of creedal propositions. However, as John Gray asserts, religions do not consist of propositions struggling to become theories. The incomprehensibility of the divine is at the heart of Eastern Christianity, while in Orthodox Judaism practice tends to have priority over doctrine. Buddhism has always recognized that in spiritual matters truth is ineffable, as do Sufi traditions in Islam. Hinduism has never defined itself by anything as simplistic as a creed. It is only some western Christian traditions, under the influence of Greek philosophy, which have tried to turn religion into an explanatory theory (Gray 2008). Dawkins has an essentially cognitive definition of religion which suggests that a discussion of religion is indistinguishable from a discussion of the existence of God. In *The New Atheists: The Twilight of Reason and the War on Religion*, Tina Beattie argues that Dawkins' conflation of belief in god with religion is problematic because many people who believe in God are not religious, and those who manifest the most intense religiosity may have little faith in God (Beattie, 50). Contrary to Dawkins' claim that all religion must be abolished in order to eradicate the breeding grounds for uncritical faith, Beattie suggests that religion can survive just as readily without belief in God as belief in God can survive

without religion (Beattie, 50). She goes on to assert that the relationship between belief in God, religious affiliation and religious observance is complex (Beattie, 50).

Beattie cautions that the word religion cannot be defined with any precision. We have seen that our contemporary understanding of religion originated in the nineteenth century as a category that refers to those aspects of human behavior and belief that are not accounted for in a scientific worldview. The nineteenth century confidence that human experience could be ordered and categorised according to a set of scientifically revealed universal laws meant forcing a wide range of cultural phenomena into the narrow category of religion (Beattie, 46). The nineteenth-century invention of religion as an independent category meant the grouping together of a diversity of cultural practices vaguely associated with religious beliefs (Beattie, 46). Thus, 'religion' loosely refers to an inclusive and yet difficult to define landscape of culture, theology and philosophy, art, history, politics, myth and devotion (Beattie, 11). It refers to that particular genre of enacted stories which are, for the most part, informed by a sense of transcendence and which seek meaning beyond the material facts of our biological existence (Beattie, 11). The fact that 'religion' has been used to cover such a broad range of practices and ideas means that every scholarly attempt to come up with a workable definition has failed. This is either because it is so broad that it encompasses everything from football to Marxism, or because it is so narrow that it excludes belief systems such as Buddhism and Confucianism which do not necessarily appeal to a divine origin or source of revelation (Beattie, 46). Scholars of religion, such as Tina Beattie, argue that although the complex of ideas and behaviour labeled 'religion' is not readily susceptible to scientific scrutiny, rationalisation and proof, this does not necessarily render it false or unreal (Beattie, 11).

It may simply mean that the tools and methods of reductive science are not able to provide a sufficient account of these phenomena. This has been the position of a number of scientists who argue that 'science' should be agnostic about many religious claims, such as the existence of God.

Dawkins accuses agnostic scientists of being disingenuous, and castigates them for their claims of agnosticism, comparing them to Neville Chamberlain. His rejection of agnosticism is necessary to support his assertion that the probability of god's existence is so slight that any rational person has no excuse in taking a 'noncommittal' position. However, like his definition of pantheism, his definition of agnosticism is also partial. Dawkins asserts that his boyhood preacher was partly right to condemn agnostics as "namby-pamby, mushy pap, weak-tea, weedy, pallid fence-sitters" (Dawkins 2006, 46). Contrary to his boyhood preacher, Dawkins argues that agnosticism is not an inherently flawed position as it is the only reasonable position in cases where we lack evidence one way or the other. A certain kind of agnosticism is an appropriate stance on many scientific questions - Carl Sagan, for instance, was proud to be agnostic when asked whether there was life elsewhere in the universe (Dawkins 2006, 46). In order to answer the question of whether agnosticism is an appropriate stance to take with respect to the question of God, Dawkins distinguishes between two kinds of agnosticism: Temporary Agnosticism in Practice (TAP), and Permanent Agnosticism in Principle (PAP). "Temporary Agnosticism in Practice is the kind of legitimate fence-sitting where there really is a definite answer, one way or the other, but we so far lack the evidence to reach it (or don't understand the evidence, or haven't had time to read the evidence, etc.)." TAP would be a reasonable stance towards the cause of the Permian extinction, the greatest

mass extinction in fossil history. “There is a truth out there and one day we hope to know it, though for the moment we don’t” (Dawkins 2006, 47). “Permanent Agnosticism in Principle is a deeply inescapable kind of fence-sitting. The PAP style of agnosticism is appropriate for questions that can never be answered, no matter how much evidence we gather, because the very idea of evidence is not applicable. The question exists on a different plane, or in a different dimension, beyond the zones where evidence can reach. An example might be that philosophical chestnut, the question whether you see red as I do” (Dawkins 2006, 47). According to Dawkins, God’s existence belongs in the TAP category, and, as we have seen, when the issue of probability is factored in, the appropriate response is a kind of qualified atheism because, according to Dawkins, atheists don’t have faith, and reason alone could not propel one to total conviction that anything definitely doesn’t exist (Dawkins 2006, 50). He contrasts this view with agnosticism, treating the term ‘agnostic’ as though it meant simply and exclusively doubtful or noncommittal. Dawkins presents the position of the completely impartial agnostic as one that holds that “God’s existence and non-existence are exactly equiprobable” (Dawkins 2006, 50). However, this interpretation applies more to the colloquial use of the term and fails to engage with the legitimate epistemological claims inherent in agnosticism, claims that seriously undermine Dawkins’ position on the omniscience of science.

The term ‘agnostic’ was originally coined by English biologist, Thomas Henry Huxley from the Greek *agnōstos*, meaning ignorant, and *gnosis*, meaning knowledge. Known as “Darwin’s Bulldog” for his tenacious and uncompromising defense of Darwin’s theory of evolution and natural selection, Huxley is said to have coined the

term in 1860 at the founding party of the Metaphysical Society in London in order to describe a methodology for approaching metaphysical questions. Dawkins quotes Huxley's explanation of agnosticism. He states that, "(a)gnosticism, in fact, is not a creed but a method, the essence of which lies in the rigorous application of a single principle ...Positively the principle may be expressed: In matters of the intellect, do not pretend that conclusions are certain that are not demonstrated or demonstrable" (Dawkins 2006, 49). Dawkins rejects this position, asserting that what matters is not whether God is disprovable, but whether his existence is *probable* (Dawkins 2006, 55). He argues that Huxley was so focused on the absolute impossibility of proving or disproving God that he seems to have been ignoring the shades of *probability*. As we have seen, Dawkins' intention in this section of *The God Delusion* is to demonstrate that God's existence is so improbable that the only reasonable, scientific position is *de facto* atheism (Dawkins 2006, 50).

Evolutionary scientist, Stephen J. Gould explicitly refutes this position, arguing that given its empirical basis science must be agnostic about the existence of God. He asserts that "(w)e neither affirm nor deny it (God's possible superintendence of nature); we simply can't comment on it as scientists" (qtd in Dawkins 2006, 55). Dawkins strenuously rejects the idea that the question of God's existence is beyond the scope of the scientific method, calling it a "remarkably widespread fallacy" that "embodies the poverty of agnosticism," because it implies that science cannot even make *probability* judgments on the question of existence (Dawkins 2006, 58). Dawkins fails to see the greater issue at the heart of agnosticism. By treating agnosticism as though it was the centre point on a spectrum between complete faith in God's existence and complete faith

in his non-existence, Dawkins seems to believe that not only does agnosticism represent a position with respect to God's existence, but that this position is based on the belief that existence and non-existence are equally probable. As stated by Huxley, and quoted by Dawkins, agnosticism is not a creed but a methodology. It is not a position on God's existence, but a different way of thinking about the question itself. In its original usage, agnosticism was a form of skepticism applied to metaphysics and theology based on the position that that which cannot be grasped by experiment is inaccessible to the human mind and to perception. Thus, agnostics are not those who have simply not formed a judgment on the existence of God, but are those who have concluded that, human reason, or - in the case of later thinkers like Gould - the scientific method, is incapable of making such a judgment at all. Dawkins seems to be confused by Gould's position, asserting that "Gould, by the way, was not an impartial agnostic but strongly inclined towards *de facto* atheism," and asking, "on what basis did he make that judgment, if there is nothing to be said about whether God exists?" (Dawkins 2006, 58). Gould's statement was about the limits of what science can say about the existence of God, whereas atheism, *de facto* or otherwise is a question of personal conviction, contrary to Dawkins' contention that atheists do not have faith (Dawkins 2006, 51). Implying that god doesn't exist surpasses the limits of methodological naturalism (exclusively natural explanations) and ends up making a metaphysical claim; he is really doing negative theology in *The God Delusion*.

Dawkins relies on the work in Julian Baggini's *Atheism: A Very Short Introduction* to formulate his definition of atheism, asserting that "what most atheists believe is that there is only one kind of stuff in the universe and it is physical, out of this stuff comes minds, beauty, emotions, moral values – in short the full gamut of the

phenomena that gives richness to human life” (Dawkins 2006, 13). He goes on to elaborate, specifying that “human thoughts and emotions *emerge* from exceedingly complex interconnections of physical entities within the brain. An atheist in the sense of philosophical naturalist⁶⁶ is somebody who believes there is nothing beyond the natural physical world, no *supernatural* creative intelligence lurking beyond the observable universe, no soul that outlasts the body and no miracles – except in the sense of natural phenomena that we don’t yet understand. If there is something that appears to lie beyond the natural world as it is now imperfectly understood, we hope eventually to understand it and embrace it within the natural” (Dawkins 2006, 14).

Dawkins’ definition of atheism equates it with scientific rationalism and relies on a specific understanding of what is natural and what is supernatural. Beattie cautions us to keep in mind that the categories of natural and supernatural are culturally defined. When we talk about nature, we are using language to describe the world around us with all its species, life forms and landscapes; and nature is a concept whose meaning changes with different perceptions and ways of looking at the world across different cultures and throughout history (Beattie, 51). The way we define ‘supernatural’ is based on our definition of ‘natural’ as it refers to phenomena or experiences which do not seem to fit within our particular expectations of what nature is or should be. This means that ‘supernatural’ is also a concept which has different meanings (Beattie, 51). Beattie also suggests that for many people who are less determinedly materialistic than Dawkins, there may exist a middle state, an indeterminate region which is neither strictly natural

⁶⁶ Dawkins specifies that for many of us, naturalist simply means a student of the natural world, whereas for philosophers, naturalist is used “in a very different sense, as the opposite of *supernaturalist*” (Dawkins 2006, 13). Recall the discussion of naturalism in the first chapter.

not strictly supernatural. Many people experience a range of emotions, memories, and associations which endow 'natural' objects with symbolic significance that transcend their natural, biological functions and communicate something in the realm of beauty, hope and love, making them in some sense 'supernatural' (Beattie, 51).

Dawkins asserts that faith is maladaptive because it is based on inner conviction rather than empirical evidence. Contrary to Dawkins' claims, atheism is not the absence of faith, and it is not science. Atheism includes beliefs and metaphysical presuppositions. As we have seen, scientific understanding is socially constructed. One might go so far as to suggest, as Beattie does, that it is a delusion to think that science offers an objective, value-free position from which to evaluate all claims of truth and meaning (Beattie, 12). Dawkins' atheism is thoroughly embedded in his broader worldview, one full of convictions and metaphysical presuppositions, most notably his utopian understanding of history, progress and human perfectibility. We all have metaphysical assumptions about the world, we all have beliefs that we cannot prove using the scientific method, we all have faith that is not founded on empirical evidence –faith in love, for example. Our moral attitudes are informed by our sense of what is right, of what is just, of how people ought to behave and what the world ought to be like. These beliefs are almost always informed by metaphysical presuppositions and there is nothing inherently wrong with that. There is nothing disreputable about having ideals; what is problematic is when we assume that our ideals are universal, when we assume that they are a reflection of the Truth, when we try to force others to see the world as we do.

The Christian roots of Dawkins' Perspective

Dawkins' worldview is strongly informed by Christianity. Tina Beattie asserts that Britain and America are Christian nations with a strongly Protestant tradition, and as such, anyone brought up in such an environment is likely to be shaped by that tradition unless he or she has had a specifically different religious upbringing (Beattie, 43). Many of the concepts that Dawkins deploys, including the idea of religion itself, have been shaped by monotheism. His atheism involves a rejection of religion which he has defined based on his understanding of fundamentalist forms of Christianity, and to a lesser extent, Islam. As such it is both defined by and dependent on Christianity. Tina Beattie argues that Dawkins' conception of religion, like that of most nineteenth century thinkers, follows the Protestant model which placing a strong emphasis on individual faith, scripture, and morality, and is primarily concerned with questions of evidence and rationality (Beattie, 42), (Beattie, 5). Like those Victorian thinkers, Dawkins is ill equipped to understand the religious ideas and practices of non-Western cultures (Beattie, 42). Many religions have little to do with the kind of solitary one-to-one relationship with the divine that this model takes for granted. Contrary to Dawkins' interpretation of religion, informed by his understanding of evolution and the Protestant model and concerned only with the individual, most religions are primarily collective expressions of social narratives and traditions, and are not necessarily associated with the kind of individualistic beliefs he presupposes (Beattie, 42). Beattie suggests that the cultural assumptions about religion, such as those informing Dawkins, still mask considerable prejudice and ignorance with regard to non-Christian religions as can be seen in his treatment of his treatment of Buddhism and Hinduism in *The God Delusion*. Furthermore, Gray articulates the ways in which Dawkins' conception of history, of progress, of what

would constitute “a better world” and how that is to be achieved are conditioned by the West’s religious inheritance. Gray argues that utopian ideologies like Dawkins’ are informed by concepts that entered Western thought with Christianity and have shaped it ever since (Gray 2007). Our history has been so thoroughly shaped by Judeo-Christian tradition that we cannot conceive of society without it. All judgments, including ethical ones, begin somewhere and those of Westerners, most often begin in Judaism and Christianity (Gray 2008). Gray asserts that intellectual honesty demands that he at least acknowledge that his moral vision derives, to a considerable extent, from the tradition that he despises (Gray 2008).

Given Dawkins’ assertion that religion is the source of much of the world’s evil, and his insistence that religious extremism is one of the greatest dangers we face today, it is remarkable that he spends so little time or effort trying to understand it. If we are going to have any hope of understanding religion and the role it plays in peoples’ lives, we need to pay attention to the many different ways that religious and cultural narratives act to impart meaning. Beattie argues that the attempt to use ‘religion’ in a generic, universalizing sense eradicates the real differences, resulting in a distorted understanding of the diversity of human cultures with respect to their historical and geographical contexts as well as their social, political, and domestic dimensions (Beattie, 48). She suggests that in order understand anything about religion, we have to go beyond the idea of ‘religion’ and include the diverse cultures, identities, and histories which make up different traditions (Beattie, 47). In *The God Delusion*, Dawkins claims to be perplexed by Astronomer Royal and President of the Royal Society, Martin Rees who describes himself as an ‘unbelieving’ Anglican...out of loyalty to the tribe’ (Dawkins 2006, 335).

And yet, as Beattie reminds us, religion has always been as much about tribal loyalty as it has been about belief in God (Beattie, 50) - something that Dawkins might account for if not for his refusal to deal with any scholarship on religion. His work in *The God Delusion* suffers from a serious lack of insight which would invite a more nuanced approach to the role played by religion in different contexts. However, Dawkins is writing with the foregone conclusion that religion is bad, and that the best thing would be to eliminate it all together. He spends the last section of *The God Delusion* attempting to demonstrate that religion is a harmful, destructive force in the world.

Pernicious Delusion versus Enlightened Reason

The last section of *The God Delusion* is devoted to demonstrating that God is pernicious delusion. In attempting to demonstrate that religion is dangerous, Dawkins points out the dark, dysfunctional, or destructive actions of people 'possessed' by religion. He argues his case by contrasting the evil done under the influence of religion with the benign or even positive influence of atheism, presenting the more extreme cases and then positioning himself and his perspective as the very representative of reason and liberal values in comparison. Demonstrating both his lack of interest in the complexities of social context and his reductionist fixation on a single, biological cause, Dawkins asserts that he is "inclined to suspect that there are very few atheists in prison," going on to state that he is "not necessarily claiming that atheism increases morality, although humanism- the ethical system that often goes with it probably does" (Dawkins 2006, 229).

It is Dawkins' contention that while it is clear that religion systematically influences people to do bad things, there is not the smallest bit of evidence atheism does

(Dawkins 2006, 273). He asserts that while individual atheists, like Hitler or Stalin, may do evil things, they don't do evil in the name of atheism (Dawkins 2006, 278).⁶⁷ By contrast, he maintains not only that religious wars are truly fought in the name of religion but that they have been horribly frequent. He states that he cannot think of any war that has been fought in the name of atheism, asking, "why would anyone go to war for the sake of an absence of belief" (Dawkins 2006, 276). He claims that terrorists and Christians who murder abortion doctors are motivated by their perception of righteousness, doing what their religion tells them to do. He asserts that they are "not psychotic, they are religious idealists who by their own lights are rational. They perceive their acts to be good...because they have been brought up, from the cradle to have total and unquestioning faith" (Dawkins 2006, 303). He rejects the claim that religious faith might not be unique in inspiring extremism, arguing that "religious faith is an especially potent silencer of rational calculation which usually seems to trump all others." He suspects that this is mostly because of the easy and beguiling promise that death is not an end, and partly because it discourages questioning by its very nature (Dawkins 2006, 303). He asserts that only religious faith is a strong enough force to motivate such utter madness in otherwise sane and decent people (Dawkins 2006, 303).

⁶⁷ He complains Hitler's atheism is an assiduously cultivated legend which is intended, at least in part, to discredit atheism. Although he has already argued that "the interesting question is not whether evil (or good) individual human beings were religious or were atheists – what matters is not whether Hitler and Stalin were atheists but whether atheism systematically influenced people to do bad things" (Dawkins 2006, 272-273), he attempts to argue that the real problem was probably German Christianity. He points to the long Christian history of hating Jews as 'Christ Killers' before attempting to demonstrate that Hitler, himself, had at least some religious feeling (Dawkins 2006, 273). He then goes on to argue that Hitler didn't carry out his atrocities single-handedly, that his orders were carried out by soldiers and officers, most of whom, he asserts, were surely Christian before suggesting that that, if his actions didn't actually flow from his personal religious feelings, it is possible that Hitler used religion to cynically manipulate the Germans (Dawkins 2006, 276) concluding that, "in any case, the evils of Hitler's regime can hardly be held up as flowing from atheism" (Dawkins 2006, 273)

As we saw in chapter two, according to Dawkins, people are in some sense at the mercy of replicators. This understanding is what informs his assertion that not only is religion a strong force for evil that acts on “otherwise sane and decent people.” He provides the example of evangelical Christian and geologist Kurt Wise, who when faced with a conflict between the teachings of his religion and his science, chose his religion. Dawkins explains this decision by asserting that Wise’s mind was mind fatally subverted and weakened by a fundamentalist religious upbringing calling the imperative of religious faith a form of mental torture (Dawkins 2006, 284), (Dawkins 2006, 286). He goes on to state that he is hostile to religion because of what it *did to* Kurt Wise, cautioning that “if it did that to a Harvard educated geologist, just think what it can do to others less gifted and less well armed” (Dawkins 2006, 286). He also discusses the example of Paul Hill, a fundamentalist Christian who murdered abortion doctors, maintaining that he does not consider Hill to be a psychopath, just dangerously religious. Dawkins asserts that what was wrong with Hill was his religious faith, suggesting that if not for this faith, he never would have acted as he did (Dawkins 2006, 297). These examples are an illustration of how Dawkins understands religion; he denies Wise, and any other religious person, any agency in how they negotiate their worldviews, in how they contend with paradoxical or conflicting explanations or moral dilemmas. According to Dawkins, religion is an overwhelmingly powerful force that compels otherwise intelligent and good people to behave badly. Following the methodology of sociobiologists discussed in the second chapter, Dawkins states that there is a universal moral zeitgeist, going on to argue that that there are some people whose religious faith *takes* them right outside of what he calls the “enlightened consensus” of that moral

zeitgeist. Dawkins suggests that these people represent the dark side of religious absolutism, and they are often called extremists (Dawkins 2006, 303). And yet Dawkins is not merely denouncing extremism, he is denouncing all religion, stating that “the take home message is that we should blame religion itself, not religious, ‘extremism’ – as though that were some terrible perversion of real, decent religion” (Dawkins 2006, 305).

Dawkins insists that as long as we accept the principle that religious faith must be respected simply because it is religious faith, it is hard to withhold respect from the faith of Osama bin Laden and suicide bombers, although he does not justify this assertion. He suggests that this is one of the reasons that he does everything in his power to warn people against faith itself, not just so-called ‘extremist’ faith, asserting that the teachings of ‘moderate’ religion, while not extremist in themselves, are an open invitation to extremism because even mild and moderate religion helps to provide the climate of faith (Dawkins 2006, 306), (Dawkins 2006, 303). Dawkins protests that faith means that you don’t have to make the case for what you believe, that if somebody announced that something is part of their ‘faith,’ “the rest of society, whether of the same faith, or another, or none, is obliged by ingrained custom, to respect it without question, respect it until the day it manifests itself in a horrible massacre like the destruction of the WTC” (Dawkins 2006, 306). Dawkins claims that suicide bombers do what they do because of their faith and they were taught that that faith not necessarily by extremist fanatics but by gentle mainstream religious instructors (Dawkins 2006, 306).⁶⁸ He suggests that Christianity and Islam teach children that “unquestioned faith is a virtue” and in so doing

⁶⁸ The idea the suicide bomber act exclusively based on their religious beliefs has been strongly refuted in a number of sources. Indeed, suicide bombing had its origins with the atheist, socialist Sri Lankan Tigers. We will look at Hedges discussion of the motivation for suicide bombers later in the chapter.

non-fundamentalist, 'sensible,' religion is making the world safe for fundamentalism (Dawkins 2006, 297).⁶⁹ More generally, Dawkins would like to argue that what is really pernicious is the practice of teaching children that faith itself is a virtue because faith can be fatally dangerous, and to deliberately implant it into the vulnerable mind of an innocent child is a grievous wrong (Dawkins 2006, 308). He goes so far as to suggest that the teachings of the Catholic Church amount to mental abuse that might ultimately be more damaging to children than any of the sexual abuse that has plagued the Church (Dawkins 2006, 312).⁷⁰ Dawkins maintains that faith is an evil precisely because it requires no justification and brooks no argument. He asserts, with no support or justification, that teaching children that unquestioned faith is a virtue primes them to grow up into potentially lethal weapons for future jihads or crusades and that if children were taught to question and think through their beliefs - instead of being taught the superior virtue of faith without question - it is a reasonable assertion that there would be no suicide bombers (Dawkins 2006, 307-308).

Dawkins champions atheism for its roots in empirical evidence over faith based on inner conviction. And yet, as we have seen, atheism and science do have some faith claims, make some metaphysical propositions and, as a human enterprise, science is as liable to be used for inhumane purposes as any other human institution. As Beattie writes, both science and religion are umbrella terms for a range of human ideas and practices. Neither of them can be judged in the abstract, for they are only as good or as bad as the people who practice them. They both include individuals who commit

⁶⁹ Not only does he treat these two very diverse traditions as though they unitary monolithic objects, but he in no way supports this assertion.

⁷⁰ He makes this assertion by comparing a friend's explanation of her childhood terror of hell with his experience of molestation as a child.

themselves wholeheartedly to working for the good of humanity and they both include individuals who are driven by personal ambition, greed and lust for power (Beattie, 69). Although he provides some violent and destructive examples of religion, as well as a litany of statistics revealing that red states with many conservative Christians suffer higher rates of crime, including murder, burglary, and theft, Dawkins does not successfully establish that all religious faith produces destructive behavior (Dawkins 2006, 229). His argument here is based on a logical fallacy that is commonly refuted in the sciences - the assumption that correlation proves causation, that two events that occur together have a cause-and-effect relationship. This is yet another example of how Dawkins' argument in *The God Delusion* fails to live up to the standards of scientific inquiry he values so highly.

In his review of *The God Delusion*, Orr identifies the assertion that religion is a pernicious force in the world as Dawkins' key empirical claim, and asks the very important question: compared to what? Although his work in *The God Delusion* is anecdotally convincing that religion *can* be bad, Orr points out that he fails to examine the question in a systematic way, comparing religion as it is practiced in the world, with all its compromise, corruption, and incompetence with atheism as theory (Orr para. 4). Comparing both as practiced, with an unflinching eye, would not support his conviction that atheism "comes out on the side of angels." Given his utopian perspective, Dawkins has a hard time acknowledging that the twentieth century has been a time of spectacular and widespread violence, much of it resulting from attempts to create societies without religion by men like Stalin, Mao, and Pol Pot, examples that run contrary to Dawkins' assertion that there is no evidence that atheism has systematically influenced people do

evil.⁷¹ In his review in *The Guardian*, Gray asserts that it is unlikely that Mao, who launched his assault on the people and culture of Tibet with the slogan “religion is poison,” would have agreed that his atheist world-view had no bearing on his policies (Gray 2008). Gray is also highly critical of the way Dawkins dismisses any suggestion that the crimes of the Nazis could be linked with atheism, calling it simple minded reasoning (Gray 2008). Gray writes that not only was Hitler a tremendous booster of science, but that he was very impressed by vulgarised Darwinism (Gray 2008).⁷² He goes on to assert that although Hitler might have used Christian anti-Semitic demonology in his persecution of the Jews, and that the churches collaborated with him to a horrifying degree, it was ultimately the Nazi belief in race as a scientific category that laid the foundation for one of the most atrocious crimes against humanity (Gray 2008). Gray maintains that there can be no reasonable doubt that Hitler’s worldview was a type of atheism (a hotchpotch of counterfeit science and animus towards religion) or that it helped make Nazi crime possible (Gray 2008). Dawkins’ inability to see this, his insistence that Nazism and Communism are anomalies, divorced from the central tradition of the modern West reflects his utopian ideological commitment. Contrary to his view that “absolutism nearly always results from strong religious faith, and it constitutes a major reason for suggesting that religion can be a force for evil in the world,” absolutism is by no mean a religious monopoly (Dawkins 2006, 286).

⁷¹ Although this is the term that Dawkins uses, it is a very loaded term with many layers of meaning, many of them subjective. For that reason, I will deliberately avoid using this term unless I am citing its use by someone else.

⁷² Social Darwinism refers to the roundly rejected application of the theory of natural selection to human society. It suggests that the strongest or fittest should survive and flourish in society, while the weak and unfit should be allowed to die this theory is used to justify eugenics programs aimed at weeding "undesirable" genes from the population, often, as in Nazi Germany, accompanied by sterilization laws directed against "unfit" individuals.

Extremism is extremism whatever its specific content. The problem is in totalitarianism that seeks to control and limit the ways that people think and feel. If we are to understand religion, we must explore the way in which ideas and beliefs function in society and in relation to one another. We have to understand not only their social and historical environments, but the role of particular beliefs in terms of their cultural, ethical and political influence. As we saw in our discussion of worldviews, religion is one of a number of factors influencing our interpretation of the world, as such it is almost meaningless to isolate it as the singular motivating influence, especially with respect to extremism and fundamentalism

Christopher Hedges, an American journalist in Middle East politics, offers a far more nuanced discussion of the subtle and complex historical and social factors influencing the current rise of Islamic fundamentalism that includes a consideration of Western colonialism and a recognition of the West's contemporary complicity in Middle Eastern instability (Hedges, 132).⁷³ He identifies a sense of collective rage and humiliation as a driving force, much stronger than religious belief (Hedges, 137). He discusses a study on suicide bombers by Robert Pape, *Dying to Win: The Strategic Logic of Suicide Terrorism*, which identifies the collective sense of national and religious humiliation as the strongest motivators for bombers who see themselves as avenging real and perceived injustices (Hedges, 137). He argues that in their approach to religion generally and Islam in particular, the New Atheists might actually be fuelling this collective humiliation and rage (Hedges, 138). He reminds his reader that terrorists arise in all cultures, all nations and all ideologies and suggests that those who externalise and

⁷³ I do not mean to suggest that this is the only, or even the best way of thinking about fundamentalism. This discussion of Hedges work is intended to act as an example of an alternative to Dawkins' approach.

seek to eradicate evil risk losing touch with their humanity and the humanity of others (Hedges, 145 and 154).

Religion as Sciences' "Other"

As discussed in the second chapter, Tina Beattie asserts that the emergence of religion as a modern term of reference and an object of study must be understood in terms of its inherent definition as science's 'other' (Beattie, 39). Broadly speaking, the term 'other' refers, or attempts to refer, to that which is 'other' than the concept being considered. The term often means a person other than oneself. As Beattie explains, feminist and critical theorists have argued that the concept of the 'modern man of reason' resulted in the construction of an 'other' that was the locus of all those forces and entities which opposed and threatened the identity of the masculine 'I' (Beattie, 40). This resulted in the internalization of a number of binary oppositions which were then treated as fundamental and natural such as: male v. female; civilization v. nature; reason v. superstition; rational v. emotional; light v. dark; good v. evil. According to Beattie, feminist and critical theorists have understood the 'other' as the repressed and silenced opposite of the dominant subject, so that the relationship between the two is not one of genuine difference but of positive and negative significance (Beattie, 40). The language of difference masks a hierarchy of relationships between the identity of the subject and the non-identity of its 'other' (Beattie, 40). That is to say that the relationship privileges one of the terms, treating it as superior to the other. The term 'deconstruction' associated with postmodern thinkers like Derrida seeks to destabilise the certainty of Western ethics and knowledge by calling into question the relationship between these oppositional pairings in order to show how their hierarchical meaning sustain social and sexual

inequalities (Beattie, 41). The representation of religion by Dawkins is a clear case of ‘othering’ as he groups together vast undifferentiated masses of humanity under the label ‘religion’ in a way which eliminates difference and diversity and presents it as the opposite of science. The other is constructed as a dark irrational power - threat to the project of scientific rationalism and its values and beliefs - which has to be mastered in the interests of science, reason and progress (Beattie, 41). However, as much as Dawkins might protest, religion is not wholly other than science. They depend on each other for their very definitions, and as we saw in the first chapter, presuming that these are two autonomous categories locked in conflict is to ignore their much more nuanced history of mutual information and interaction.

Dawkins’ intention is clearly not to study religion in the interest of understanding, but rather is an attempt to bring scientific objectivity to bear on a condition that ‘afflicts’ a majority of people on earth – to bring religion under the authority and scrutiny of the scientific method. However, only those who are free from its grips are sufficiently rational and objective to be capable of analysing it.⁷⁴ This perspective means that those who are religious are not treated as complete feeling thinking human beings but as objects of study by a highly unsympathetic Western elite bent on eliminating and destroying those beliefs, thereby releasing them from their ‘delusions.’ The work on religion in *The God Delusion* is dismal when held to the standards of the scientific

⁷⁴ As we have seen, Dawkins identifies himself as one of a minority of scientific specialists with the cognitive awareness of what is good for your genes (Dawkins 2006, 220) by this he means that he is one of a minority of scientific specialists able to speculate on the Darwinian benefit of human behaviours, like religion.

method. Dawkins' conclusions have clearly been set and this work is written to justify them. It is hardly the careful, intellectually rigorous work one would expect from a scientist, especially one who negatively contrasts these very tendencies in religious thought with an idealized version of scientific thinking that involves careful attention to the evidence and an openness to changing one's mind. Dawkins only recognizes his brand of truth, but most people, in practice, recognize a variety of truths. We would all do well to heed Tina Beattie's assertion that "we have no hope of understanding our fellow human beings unless we are willing to embark upon the struggle of trying to understand those whose views of the world may be very different from our own. Unless we seek understanding we are condemned to ever greater violence and tyranny arising out of the clash between dominant and powerful majorities, and alienated and desperate minorities" (Beattie, 15).

Conclusion

Secular utopian thinking, like that of Dawkins, is rooted in an Enlightenment faith in the moral perfectibility of humankind through the power of knowledge (in this case, narrowly defined as rational, scientific knowledge). Utopian thinkers understand history as a prolonged, entrenched battle between the forces of good and evil, with human knowledge advancing and developing cumulatively with the expectation that as the store of human knowledge grows, so too do improvements in ethics, – that progress in science will be matched by progress in society. For these thinkers, the defects of any society are not the product of a fundamentally flawed human nature. Rather, they are the result of universal repression that can soon be ended. For Dawkins, faith/belief in god/religion is the source of this universal oppression. Only once humankind has been freed from this

oppressive delusion, and reason has replaced superstition, will the conditions for a truly moral human existence be possible.

In purporting to evaluate the claims of religion using the methods of science, *The God Delusion* is an extension of the Enlightenment project to assert the omniscience of science – that is, the ability of science, and specifically Darwinian evolution to evaluate all truth claims. The Enlightenment taught that reason and the scientific method could be applied to all aspects of human life, and that this application would lead to progress, human enlightenment and a better world. Gray has argued that utopian ideals – the perfection of society and of humankind, the notion that we are moving towards salvation or universal emancipation - have been the most dangerous and destructive legacies of Christianity and the Enlightenment.

Utopian thinkers have demanded the eradication or silencing of those who do not see the world as they do. As Hedges describes, “(t)hose who believe in collective moral progress define this progress by their own narrow, cultural, historical, linguistic and social experience. They see the ‘other’ as equal only when the other is identical to themselves. They project their own values on the human race... Those who are different do not need to be investigated, understood or tolerated, for they are intellectually and morally inferior. Those who are different are imperfect versions of themselves” (Hedges, 22). Dawkins, a utopian thinker, turns his particular ideas of good into an absolute, universal standard. In so doing, he constructs a moral hierarchy: those who share their views are good; those who fail to share these views are evil. Dawkins’ project is not to destroy these negative aspects of religious fundamentalism, but to replace them with his own versions of the same. He wants to replace one totalizing discourse with another and

it is this aspect of his work that has, rightly, led to the charge of atheist fundamentalism and which accounts for his construction of a natural conflict between science and religion.

Epilogue

We have to contend with some very real, very serious problems – from environmental concerns, to human rights issues – problems whose solutions will require that people with a wide diversity of ways of seeing the world collaborate. I agree with Dawkins, there are some very alarming and potentially dangerous conflicts between people with fundamentally different ways of seeing the world, and fundamentally different priorities. However, I strongly disagree with and reject his approach. I believe that it is serving to intensify and exacerbate these tensions. He is perpetuating a Western, elitist, imperializing attitude to knowledge and truth, that is, not surprisingly being roundly rejected by those it excludes. I am very concerned that by presenting his personal views as though they were simply ‘science,’ he is not only misrepresenting an important and valuable source of knowledge and understanding, but he is contributing to a growing distrust and, in some cases, rejection of science. More importantly, however, he is contributing to the attitude that it is not only acceptable, but necessary and just to treat other human beings with contempt, derision and scorn, simply because they do not see the world as we do. Dawkins has become one of the popular and well known voices of atheism, but he does not speak for all atheists. He does not speak for me. It is possible to hold a scientific worldview and still accept that there are other, important kinds of knowledge and truth; it is possible to be an atheist and respect those who do not see the world as you do. I venture that it is not only possible, but necessary. This does not

mean that automatic respect is accorded to all religious ideas, as Dawkins suggests, but that people are not discounted simply because they are religious. If you are concerned about any of the many issues we currently face, I propose that there is nothing to be gained and everything to lose in pretending that both the problems and their solutions are simple. Complexity is not a scandal, it is our reality. It is a delusion to pretend otherwise.

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