Messer's Typology: An Investigation into the Relationship Between Science and Christian Theology

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Abstract

Several thinkers in the field of science and theology have categorised the various views on the relationship between science and Christian theology in typologies. These typologies are often descriptive and are intended to make describing the positions of individual thinkers and/or schools of thought easier and simpler. One typology is that of Neil Messer and is unique in that it categorises different views on the relationship between science and theology in terms of the relative importance given to science and theology by that thinker/school of thought. In this thesis, I shall look at three of the five Types on Messer's typology with the aim of discerning which is the most satisfactory formulation of the relationship between science and Christian theology in the context of the contemporary West.

I shall undertake this this task by focusing on one of the three chosen Types in each chapter and investigating how satisfactorily an example of that Type formulates a relationship between science and Christian theology. This investigation shall be facilitated using analogies from works of speculative fiction which portray a relationship between magic and electronic/mechanical technology – relationships which will be compared and contrasted with the relationship between science and Christian theology as it is presented by the thinkers/schools of thought.

Ultimately, I shall conclude that of the three Types I have discussed from Messer's typology (Types 1, 4.5, and 3 respectively), Type 3 as is the most satisfactory formulation of the relationship between science and Christian theology in the contemporary West. This is because it provides an account where science and Christian theology both exist within and contribute to our understanding of the same 'ultimate' reality.

Contents

"Blasphemer! How dare you bring logic into God's house?"

- Reid Harrison, "Faster, Princess! Kill! Kill!" *Disenchantment*. Directed by Ira Sherak. 2018. Los Angeles, California: Netflix.

"I'm sick of magical worlds with no technology. I want fairy run coffee shops where you can get a latte with a shot of charisma, because you've got a big presentation you're worried about, or witches working at Apple selling phones that automatically appear in your pocket if you accidentally leave it somewhere, or psychics running hair salons who always know how you want your hair to look, or aura reader therapists. I just really want normalized magic in modern society"

- rainbow-femme. Tumblr, "I'm sick of magical worlds…" June 11, 2014. https://rainbow-femme.tumblr.com/post/88463621492/im-sick-of-magical-worlds-with-no-technology-i.

Introduction

This thesis will be situated in the field of science and Christian theology. In the three chapters of this thesis, I shall be discussing the relationship between science and Christian theology with specific focus on three schools of thought. My research question is: What is the most satisfactory formulation of the relationship between science and Christian theology in the contemporary West?[1]

The science-religion debate contains some voices who would choose to forsake all Christian doctrine and maintain that science is the only truth, and some who would forsake all science and maintain that Christian doctrine is the only truth. These are extreme examples, and most cases are much more nuanced than that. Indeed, there are many positions that may be held on the relationship between science and Christian theology, and many have put forward ways to categorise these positions. In this Introduction I shall survey six of these typologies and indicate why my chosen typology, that of Neil Messer, is particularly suited to the task.

In 1991, Ian Barbour developed one of the most influential of these typologies, one he would go on to reiterate in 1997. Barbour's typology consists of four Types: conflict, independence, dialogue, and integration.[2]

The conflict model concerns those positions where religion and science are not only seen as incompatible with each other but in direct competition with each other. Barbour claims that such a model is often seen in the public eye because it lends itself well to media coverage.[3] The conflict model has two opposite extremes: scientific naturalism and biblical literalism.

Scientific naturalism is on the science side of the conflict model coin. Those who adhere to this position value science above any other form of discovering truths about the world. In this view, says Barbour, "Science alone is objective, open-minded, universal, cumulative, and progressive. Religious traditions, by

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[1] 'Satisfactory' is here taken to reference the accuracy of the representation of both sides of the relationship: the science side and the Christian theology side.

[2] You can find Barbour's discussion of these four Types in: Ian G Barbour, *Religion and Science: Historical and Contemporary Issues* (New York City, New York: Harper Collins, 1997), 77-105.

[3] Barbour, *Religion and Science*, 77.

contrast, are said to be subjective, closed-minded, parochial, uncritical, and resistant to change."[4] Barbour discusses E.O. Wilson as an example of a scientific naturalist, citing Wilson's argument that religions and religious traditions are the product of evolution and that, once we realise that this is all that religion is, we will jettison it from our society.[5]

Barbour is dissatisfied with this view on the grounds that it does not portray science fairly or accurately, an argument he also uses to dismiss the other side of the conflict model coin: biblical literalism.[6]

Barbour gives creation science as an example of biblical literalism, a topic to which we shall return in Chapter 2. He refers to the attempts made in America throughout the twentieth century to have creation science taught in schools alongside evolutionary theory, and a law passed in Arkansas in 1925 which allowed for such teaching to occur. The law was, however, Barbour notes, overturned some decades later for several reasons, including that creation science was deemed to be unscientific. The court used as evidence for this the fact that no creation science papers had ever been submitted to a peer-reviewed scientific journal, let alone published in one, while evolutionary theory had been upheld in peer-reviewed literature across many scientific disciplines.[7]

Barbour accuses both creationists and anti-creationists of viewing evolutionary theory as inherently atheistic; the former using the argument to dismiss evolutionary theory and the latter using the argument to dismiss creation science. A further transgression in both positions on creation science is that they do not communicate with each other sufficiently to properly enter constructive dialogue. They are mostly ignorant of the people with whom they disagree and the discourse suffers because of this.[8]

Another group of thinkers, Barbour says, have attempted to avoid conflict by separating science and religion entirely. This is the independence view.[9] As with

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[4] Ibid, 78. We shall see in Chapter 1 how Richard Dawkins espouses a similar view to that which is portrayed here, although Barbour does not name Dawkins as an exponent of this particular view. He does however, name Dawkins as a scientific naturalist (81).
[5] Barbour, *Religion and Science*, 80.
[6] Ibid, 78.
[7] Ibid, 83. The notion of creationism as unscientific has been explored by Abby Hafer, whose arguments will be discussed in Chapter 2.
[8] Ibid, 84.
[9] Ibid, 86.

the conflict model, Barbour identifies two different 'strands' of the independence view.

The first is 'contrasting methods'. This view holds that the methods of science and religion differ so drastically from one another that they do not impinge on each other. Science can conduct its scientific method and religion can conduct its 'religious' method, and never the twain shall meet.[10]

The other iteration Barbour gives of the independence model is the 'differing languages' view. In this view, science and religion perform completely different functions in human life and so cannot be lumped into the same Type: "Science and religion do totally different jobs, and neither should be judged by the standards of the other".[11] A classic example of such a view would be Stephen Jay Gould's Non-Overlapping Magisteria (NOMA), where religion and science are said to have different foci which do not overlap: religion can provide moral teaching, while science can provide new knowledge about the natural world.[12]

Barbour thinks that the independence view is a good starting point, but nothing more.[13] From here, he moves on to the next Type on his typology: dialogue.

A key aspect of the dialogue view is the existence of what Barbour describes as 'limit questions': "ontological questions raised by the scientific enterprise as a whole but not answered by the methods of science".[14]

Like previous Types on Barbour's typology, the dialogue view can be split into two: methodological parallels[15] (where the methods of science and religion are seen as parallel to each other, as opposed to separate as in the contrasting methods variant of the independence view), and nature-centred spirituality.

Barbour says that those who adhere to nature-centred spirituality are often discussing "*the sacred in nature*";[16] and, in this way, are very similar to the

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[10] Ibid.

[11] Ibid, 87.

[12] Gould defines and illustrates NOMA in: Stephen Jay Gould, *Rocks of Ages: Science and Religion in the Fullness of Life* (London: Vintage, 2002), 49-89.

[13] Barbour, *Religion and Science*, 88.

[14] Ibid, 90. Barbour notes that limit questions are sometimes referred to as 'boundary questions', but he believes that the latter term is open to misinterpretation and so prefers the term 'limit questions'.

[15] Ibid, 93.

[16] Ibid, 95 (sic).

Romantic poets.[17] Barbour also identifies New Age movements as forms of nature-centred spirituality.[18]

The final Type on Barbour's typology is integration, which Barbour splits into three: natural theology, theology of nature, and systematic synthesis. For Barbour the natural theologian infers the existence of God from evidence provided by the natural world. The theologian of nature considers the way in which scientific discoveries may "affect the reformulation of certain [religious] doctrines". Finally, "In a systematic synthesis, both science and religion contribute to the development of an inclusive metaphysics". Barbour cites process philosophy as an example of a systematic synthesis.[19]

From the terminology used, Barbour recognises that there can be difficulty in seeing the difference between the dialogue view and the integration view. The distinction Barbour offers is that the integration view begins its arguments from considering named scientific theories, whereas the dialogue view does not.[20]

Barbour finds natural theology unsatisfactory and feels that David Hume has successfully critiqued it to the point where one can invoke his arguments to justify rejecting natural theology.[21]

Theologies of nature are the opposite of natural theologies in several ways. Barbour says that where the latter start from the available science, the former begin from a given religious tradition and look to where and how certain aspects of that tradition need reformulation considering scientific discoveries.[22]

Finally, "*Process philosophy* is a promising candidate for a mediating role today because it was itself formulated under the influence of both scientific and religious thought, even as it responded to persistent problems in the history of Western philosophy (for example, the mind/body problem)."[23]

In 2014, Elizabeth Johnson discussed and expanded Barbour's typology. She describes adherents of the conflict view as 'fundamentalists', both those on the side of scientific naturalism and biblical literalism, saying that "Each contends

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[17] Ibid. Barbour does not denote Romantic with a capital letter.
[18] Ibid, 98.
[19] Ibid.
[20] Ibid, 90.
[21] Ibid, 100. Hume's arguments against teleology are further discussed in Chapter 2.
[22] Ibid.
[23] Ibid, 104 (sic).

that only one position is legitimate, namely theirs, and rejects insights offered by the other".[24] She accuses biblical literalists of relating to the Bible in a way that is alien to most modern Biblical scholars, who would not claim that the Bible is attempting to teach scientific truths nor that the Bible can only be legitimately interpreted if interpreted literally.[25]

Johnson names Richard Dawkins as a scientific naturalist and discusses his position in more detail than Barbour. She accuses Dawkins, along with other scientific naturalists, of "operating from a different kind of fundamentalism [than biblical literalists in] … seek[ing] to demolish religion with the guns of evolutionary theory":[26]

> "The fundamentalism here consists in taking natural explanations as the last and only word on all reality, including the phenomenon of mind. But spiritual realities, if such do exist, cannot be measured by precision instruments. Whether or not God exists cannot be resolved by scientific method, according to the definition of both God and scientific method."[27]

Johnson describes the independence Type as giving science and religion the opportunity to ignore each other and carry on with their own individual businesses. Unlike Barbour, Johnson does explicitly place Gould's NOMA in the independence Type, though criticises it for its pastoral difficulties.[28] The independence view is impractical, according to Johnson, for very few can successfully compartmentalise science and religion in their lives and as a result, "the need for a coherent worldview becomes pressing".[29]

The dialogue view, according to Johnson, sees science and religion acknowledging both their differences and their similarities, especially in their shared interest in discovering more about the reality which we inhabit.[30] While science and religion cannot necessarily answer each other's questions, they can provide additional insight which can bring thinkers closer to answering their

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[24] Elizabeth Johnson, *Ask the Beasts: Darwin and the God of Love* (London: Bloomsbury, 2014), 7.
[25] Ibid.
[26] Ibid, 8. Johnson acknowledges that evolutionary theory is not the only gun which scientific naturalists have used to demolish religion, though she notes that it is a particularly contentious one.
[27] Ibid.
[28] Ibid, 8-9.
[29] Ibid, 9.
[30] Ibid.

respective questions.[31] Johnson warns, however, that such a conversation is only possible if one sees reason as an ally rather than an enemy of faith.[32]

Integration, says Johnson, is very much like the dialogue view but it takes the dialogue view a step further. She, too, describes the formation of a "deep synthesis of scientific ideas with religious belief", and attributes such a synthesis to process theology and philosophy, as Barbour does.[33]

Johnson, however, proposes a fifth Type: that of practical cooperation. Rather than a philosophical consideration of the relationship between the methodologies or truth claims of science and religion, the practical cooperation approach is tied to ethics. Johnson specifically uses the ecological crisis as an example, taking E.O. Wilson's more recent stance that if the ethical considerations of religion and the scientific knowledge of the changing climate come together, then a real difference can be made regarding the ecological crisis.[34]

Johnson, then, begins with Barbour's typology and mostly accepts it as it is, but adds a fifth Type to the typology, that of practical cooperation, with particular reference to the ecological crisis. She describes her five-part typology consisting of conflict, separation, dialogue, integration, and practical cooperation thus: "Enemies, strangers, good friends, married partners, or co-workers".[35]

Ted Peters, too, has expanded upon Barbour's typology. Writing in the same year in which Barbour reiterated his typology, Peters takes a different approach to expanding upon it from Johnson.

Peters expands further than Johnson, doubling the number of Types in Barbour's typology rather than adding a single Type to the possibility pool.[36] The eight Types on Peters' typology are as follows: scientism, scientific

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[31] Ibid, 9-10.
[32] Ibid, 10.
[33] Ibid.
[34] Ibid, 11.
[35] Ibid.
[36] It should be noted that Peters does not believe his typology can be neatly mapped onto Barbour's; he claims his typology is "more nuanced" than Barbour's and that while there are overlaps, one should remain wary of equating them outright. See: Ted Peters, "Theology and the Natural Sciences." In *The Modern Theologians: An introduction to Christian theology in the twentieth century*, ed. David F Ford (Malden, Massachusetts: Blackwell, 1997), 665 [footnote 1].

imperialism, ecclesiastical authoritarianism, scientific creationism, two-language theory, hypothetical consonance, ethical overlap, and New Age spirituality.

Scientism can be neatly described as naturalism or secular humanism. Scientism would be part of Barbour's conflict model, on the side of scientific naturalism, in that it seeks complete victory of science over religion. This atheistic ideology is "built upon the assumption that science provides all the knowledge that we can know" and reduces the knowledge which religion can provide to nothing more than "pseudo-knowledge".[37]

Scientific imperialism is like scientism, says Peters, though it is a milder form. Rather than wishing to march into religious territory and eliminate the enemy completely, scientific imperialists wish to conquer the land, allowing religion to live but under science's rule. Scientific imperialism is theistic, though maintains that we can only really gain knowledge – including knowledge of the divine – from scientific investigation as opposed to religious revelation.[38]

Peters' third Type is ecclesiastical authoritarianism, which he claims can be found exclusively in the Roman Catholic church: "theological dogma is here ceded authority over science on the grounds that it is founded on God's revelation".[39] Here we see a respect in which Peters' typology diverges from Barbour's.

In his fourth Type, Peters returns to a position closer to Barbour's, with scientific creationism. Barbour gave creationism and creation science a place in his biblical literalism version of the conflict Type. Peters, however, gives it its own Type on his typology. Contrasting it with ecclesiastical authoritarianism, Peters claims that creationism is not merely a Protestant version of the Roman Catholic position he previously described. This is because "Today's creation scientists are willing to argue their case in the arena of science, not biblical authority".[40]

Peters' fifth Type is what he calls two-language theory, which he claims is the most common academic position among those he includes in his typology.[41] A

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[37] Peters, "Theology," 650.
[38] Ibid.
[39] Ibid, 651.
[40] Ibid.
[41] Ibid, 649.

distinction between science and Christian theology which will rear its head at several points in this thesis is the distinction between the kinds of questions the two disciplines are asking. After Langdon Gilkey, Peters describes the two-language theory as a belief that science and theology are asking different kinds of questions: science is asking 'how' questions, while theology is asking 'why' questions.[42] Yet rather than science and theology asking different kinds of questions about the same thing, Peters says, two-language theorists speak of science and religion as moving in two different directions: one toward God, and the other toward religion. Perhaps this is where Peters might place Gould's NOMA. Peters expresses distaste for this kind of solution, as it merely "gains peace through separation".[43]

So, Peters moves onto his sixth Type: that of hypothetical consonance, where a harmony exists between science and theology but that harmony is hypothetical. He claims to be situated in a position dealing with weak consonance, where we are looking for harmony between science and theology in terms of which questions are similar between the two, and where the questions they ask share the same domain.[44]

Peters' seventh and penultimate Type is that of ethical overlap. This is very similar to the fifth Type Johnson would go on to add to Barbour's typology, where she describes science and religion as 'co-workers'. In an ethical overlap, Peters says, theologians recognise their responsibility to reflect ethically on the developments of science. Like Johnson, he explicitly mentions climate change as one of the areas in which theologians can interact with scientists.[45]

We have seen Peters' final Type within Barbour's typology, namely as an example of Barbour's nature-centred spirituality within the dialogue model. While Barbour speaks of New Age holism as an example of nature-centred spirituality, Peters gives it its own Type in his typology. Whereas Barbour speaks of New Age holism, Peters speaks of New Age spirituality, the "key" to which is holism.[46] Peters argues that there are three main aspects to New Age spirituality: "(1) discoveries in twentieth-century physics, especially quantum

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[42] Ibid, 652.
[43] Ibid.
[44] Ibid.
[45] Ibid, 653.
[46] Ibid.

theory; (2) acknowledgement of the important role played by imagination in human knowing; and (3) a recognition of the ethical exigency of preserving the planet from ecological destruction."[47] Peters expresses sympathy for the ethical elements of New Age spirituality, but finds its "metareligious naturalism" "contrived and uncompelling".[48] Peters situates himself within the sixth Type in his typology, that of hypothetical consonance. In this view, he holds, we do not have to compromise the integrity of either science or religion and we are not limited in the way that the two-language theory is.

I would agree with Peters that it is important to retain the integrity of both science and religion, but I would rather seek a position where the consonance between the two is actual rather than merely hypothetical.

A year before Peters, Willem Drees devised a typology in an entirely different format from what we have previously seen. Barbour's, Johnson's, and Peters' typologies have all been lists of various possible positions to hold on the relationship between science and religion. Drees, however, produced a table-like typology expressing a 3x3 system, with various 'characters of religion' (labelled 1-3) on the *x* axis and various 'challenges' (labelled a-c) on the *y* axis. Each Type on Drees' typology, then, is a result of the intersection of a 'character of religion' and a 'challenge', denoted with its corresponding number and letter as to where it falls on the *x* and *y* axes.

	Character of religion		
Challenge	**1. Cognitive**	**2. Experience**	**3. Tradition**
a. New knowledge	1a. Cognitive claims in religion and new knowledge about the world	2a. Religious experience and new knowledge of the world	3a. Religious tradition and new knowledge about the world
b. New views of knowledge	1b. Cognitive claims in religion and the nature of knowledge	2b. Religious experience and the nature of knowledge	3b. Religious tradition and new views of knowledge
c. Appreciation of the world	1c. Cognitive claims and the meaning of the world	2c. Religious experience and appreciation of the world	3c. Religious tradition and appreciation of the world

Fig 1.0 Drees' typology, adapted from Drees, Religion, Science and Naturalism*, 45.*

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[47] Ibid, 654.
[48] Ibid (sic).

Type 1a denotes the intersection between cognitive claims in religion and new knowledge about the world, such as that which has been ascertained by the sciences. Drees cites such historical events as the Darwin and Galileo Affairs as examples of where this intersection has played out. Drees argues that these events were just as much about a conflict between different religious interpretations as they were conflicts between science and religion.[49]

1b concerns the intersection between cognitive claims in religion and the nature of knowledge. Nancey Murphy, who will be discussed particularly in Chapter 3, attempts to integrate science and religion with respect to their methodologies and this, for Drees, marks her as a 1b exponent.[50]

The final entry in the first column, 1c, is the intersection between cognitive claims and the meaning of the universe. Drees puts teleology here, citing Fine-Tuning arguments.[51]

The second column moves away from cognitive claims about religion to religious experience. 2a seeks to relate religious experience with changing knowledge of the world. Here again we see New Age holism and other experiential religions given their own Type in contrast to how Barbour categorised such worldviews on his typology.[52]

2b concerns religious experience and the nature of knowledge. Drees notes that Murphy, to an extent, can be placed in this Type by virtue of her argument that data (for Murphy provided by communal discernment) from religious experiences can be used in the study of theology in much the same way as sense data can be used in the sciences. Drees identifies Richard Swinburne as a 2b thinker.[53]

2c also deals with how experiential views of religion relate to an appreciation of the world. Such thinkers, Drees says, use divine ambiguity to avoid the need for an inaccessible realm beyond space and time (i.e. heaven and/or hell).[54]

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[49] Willem B Drees, *Religion, Science and Naturalism* (Cambridge: Cambridge University Press, 1996), 46.
[50] Ibid, 46-47.
[51] Ibid, 47.
[52] Ibid, 47-48.
[53] Ibid, 48.
[54] Ibid.

The final column concerns religion as a tradition. 3a evaluates religious traditions using new knowledge gained about the world and concludes that religion is a product of evolution and nothing more.[55] 3b, where religious traditions are evaluated using new views of knowledge, draws heavily from the later work of Ludwig Wittgenstein and reduces religion to a 'language-game' such as the philosopher would describe one.[56] 3c, the ninth and final Type on Drees' typology, considers religious traditions in light of views of appreciation of the world. 3c borrows from 3a, says Drees, in respect to 3a's evolutionary view of religion, but seeks to move forward from a functional view of religion to truth by making claims "which transcend any local context". Drees believes that 3c thinkers are unsuccessful in this attempt.[57]

Mikael Stenmark, too, has developed a typology with direct reference to Barbour's. Stenmark believes that Barbour's typology has become "standard", so widespread is its influence. As such, Stenmark lays out his typology in terms of how it relates to Barbour's.[58] He does, however, give an alternative view to Barbour's typology; Stenmark believes that there should be three ways of looking at the relationship between science and Christian theology: overlap, no overlap, and union. This account, Stenmark says, has advantage over Barbour's four-Type typology as 'overlap' language leaves more nuance for the various Types; it is not necessary to explain how large or small an overlap needs to be to place a Type on his typology.[59]

Stenmark's main issue with Barbour's typology is that Barbour has not defined his Types sufficiently. For example, Stenmark takes issue with Barbour's dialogue Type, saying that this word is inaccurate to describe the position. Most of the theorists who fall into various Types on Barbour's typology are engaged in a conversation between theology and science in some fashion, and so to exclude an entire Type as being typified by their dialogue ignores other parts of the field.[60] Similarly, Stenmark does not believe that seeing the conflict between scientific and theological ideas should automatically put someone in Barbour's

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[55] Ibid. Drees does not mention E.O. Wilson as an exponent of this view, though we have seen Johnson describe Wilson's position in much the same manner as Drees describes 3a.
[56] Ibid, 49.
[57] Ibid.
[58] Mikael Stenmark, *How to Relate Science and Religion: A Multidimensional Model* (Grand Rapids, Michigan: Eerdmans, 2004), 250.
[59] Ibid, 251.
[60] Ibid, 253.

conflict model; in this way, he sees little difference between Barbour's conflict model and his integration model.[61] The key issue with Barbour's typology, according to Stenmark, is that there is too much overlap between the four Types. This does not allow for easy description of various positions and thinkers.[62]

An example Stenmark gives for this difficulty is Barbour's placement of Richard Dawkins on his typology. Barbour would put Dawkins in the conflict model, but Stenmark believes that it is not obvious that this is where Dawkins belongs considering the definition Barbour has given of the conflict model. The criteria for being in the conflict model, and arguably each of Barbour's four models, are, for Stenmark, "ambiguous".[63]

Overall, Stenmark believes that "if both science and religion are evolving and changing practices then no *a priori* or once-and-for-all answer can be given about how science and religion should be related".[64] In light of this belief, Stenmark gives a five-type typology: overlap; union; complete separation (where there is no overlap at all); science is a subset of religion; religion is a subset of science.[65]

The final thinker I shall discuss, Neil Messer, developed his typology in his 2007 book, *Selfish Genes and Christian Ethics*, revealing that he owes much of his development of his typology to Hans Frei.[66] He later reiterated, updated, and confirmed his typology in a 2018 article, 'Evolution and Theodicy: How (Not) to do Science and Theology'.[67] His typology takes on a different structure than the ones we have seen so far. One such difference is that Messer clearly identifies and defines what kinds of 'science' and what kinds of 'religion' he is talking about; the former having a focus on biology over physics or chemistry, and the latter being Christian doctrine which, for this purpose, he defines as "the central convictions of the Christian Church".[68] So Messer is answering the narrower

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[61] Ibid, 254.
[62] Ibid.
[63] Ibid, 255-256.
[64] Ibid, 268.
[65] Ibid.
[66] Neil Messer, *Selfish Genes and Christian Ethics: Theological and Ethical Reflections on Evolutionary Biology* (London: SCM Press, 2007), 49.
[67] Neil Messer, "Evolution and Theodicy: How (Not) to do Science and Theology." In *Zygon: Journal of Religion and Science* 53 no. 3 (2018): 821-835.
[68] Messer, *Selfish Genes*, 49 [footnote 18].

question: what is the appropriate relation between *Christian theology* and the natural sciences, and draws his test cases mainly from biology. Note too that his method is prescriptive rather than descriptive – he asks not what is or has been the relationship, but what it *should* be. This is also the approach of this thesis.

Like Johnson and Stenmark, Messer gives a five-Type typology. His first Type is: "Only science contributes to the account, and the contribution of Christian doctrine is dismissed".[69] He gives Daniel Dennett's biological reductionism as an example of this Type, though also briefly mentions Dawkins as a further example. Messer finds this Type to be lacking in terms of portraying a Feuerbachian God who is radically different from the God in which Christians believe.[70]

His second Type is: "Both science and Christian doctrine contribute to the account; its shape is determined by the scientific contribution, and the input from Christian doctrine must be adjusted to fit the outlines determined by the scientific contribution".[71] The example Messer gives of this Type is Arthur Peacocke.[72]

His third Type is: "Both science and Christian doctrine contribute, and neither has sole control over the shape of the account".[73] For this Type, Messer refers to John Polkinghorne, though he admits that Polkinghorne's categorisation is a little difficult to pin down as solely Type 3.[74] This is because Polkinghorne's Gifford Lectures are structured according to the articles of the Nicene Creed, and so in these works Polkinghorne could be considered to be veering towards Type 4:[75] "Both science and Christian doctrine contribute; the shape of the account is determined by Christian doctrine, and the scientific contribution is critically appropriated to that doctrinally shaped account".[76]

Messer similarly believes his example for Type 4, Karl Barth, is a slightly more ambiguous and tricky positioning. Barth is not taken very seriously in the field of

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[69] Ibid.
[70] Ibid, 50-53.
[71] Ibid, 49-50.
[72] Ibid, 55.
[73] Ibid, 50.
[74] Ibid, 58 [footnote 58].
[75] Ibid, 60.
[76] Ibid, 50.

science and theology, and while his systematic theology has been profoundly influential throughout the latter half of the 20th Century, it is not generally thought to contribute much to the science and theology debate.[77]

Messer's fifth and final Type is: "Only the contribution of Christian doctrine is admitted, the scientific contribution being denied or dismissed".[78] For this fifth Type, Messer identifies creationism – "as that term is commonly understood" – as a useful example.[79] Though this, too, is problematic in a sense due to creationists making "apparently scientific claims" which are themselves not science in any conventional sense,[80] an issue we have already seen Peters acknowledge.

So far, I have discussed six typologies of the possible views on the relationship between science and religion: those of Ian Barbour, Elizabeth Johnson, Ted Peters, Willem Drees, Mikael Stenmark, and Neil Messer. Of these six typologies, I shall favour Messer's in this thesis, and use it for the structure of my chapters. For the purposes of this thesis, Messer's typology is to be preferred over the others I have discussed for several reasons.

Peters' and Johnson's typologies both explicitly mention ethics, both regarding the ecological crisis. As I shall not be discussing questions of ethics, or religious responses to scientific developments such as stem cell research or GM crops, or, indeed, the ecological crisis, Peters' and Johnson's typologies are less appropriate frameworks for this thesis.

Each of the typologies we have discussed so far, with the exception of Stenmark's and Messer's, have had clearly defined Types. The conflict model *is* the conflict model and no other model; similarly for the other models. This is problematic when a thinker does not fit completely into one of those Types. Barbour, for instance, is unable to neatly fit his own position on his typology, instead advocating a ""Theology of Nature" position, coupled with a cautious use of process philosophy".[81] The result of such defined Types is that a thinker then has to explain which parts of 'this Type' and 'that Type' they agree with,

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[77] Ibid, 60-62.
[78] Ibid, 50.
[79] Ibid, 54. Messer attributes the 'common understanding' here referenced to Henry M Morris.
[80] Ibid.
[81] Barbour, *Religion and Science*, 105.

making the process of placing any one thinker on any of these typologies an unnecessarily ponderous affair.

Another indication of this ambiguity is that a single position can be placed in different Types on different typologies. New Age holism, for example, has been placed in three different Types on three different typologies. The work of Nancey Murphy, too, has been the subject of disagreement with regards to categorisation. If the purpose of these typologies is to make more sense of the scope of the field and the positions therein, then I do not consider that they have done this well.

Messer's typology, contrastingly, allows for more determination when describing various positions on the debate, because Messer's Types describe how important science and Christian doctrine are, relative to each other, for each thinker or school of thought. Where the other thinkers I have discussed had to brand themselves as a mix of two or more of their own Types, such a thing is not possible with Messer's typology: if you believe that Christian doctrine has no importance in the account but that science does, you cannot simultaneously believe Christian doctrine and science have equal importance in the account.

This is not to say that a position must fall neatly into the five Types Messer has described. Messer's typology is much more of a spectrum, so that a position can exist between two of the Types Messer identifies. One could, for example, be Type 1.5, depending on the level of importance one gives to science over Christian doctrine. In Chapter 2, I shall discuss Intelligent Design theory as being a Type 4.5. Such non-integer Types are not possible on the typologies of any of the other thinkers I have discussed. Only Messer's is flexible in this way.

These non-integer Types are dissimilar to a mixing of Types which we have seen in the other typologies. To exist between two of the defined Types on Messer's typology is not to define oneself as a mixture of those two. This is because of Messer's focus on the relative importance of Christian theology and science. One does not need to borrow from Types 1 and 2 to be Type 1.5; one merely has to say that one believes that science is the most important contributing factor to the account and that Christian theology does contribute a very small amount to the account, but the contribution from Christian theology is not as large as it is for those in Type 2. If we imagine a double pan balance

scale, where one pan holds Christian doctrine and the other holds science, we can illustrate the mechanics of Messer's typology. Type 1 on Messer's typology would be where the Christian doctrine pan is as high as it can possibly be (being completely unimportant and therefore lacking in any weight) while the science pan is as low as it can possibly be. Type 5 would be the opposite. Type 3 would be where the pans are at equal heights to each other. Types 2 and 4 see the pans at the halfway points between their positions in Types 1 and 5. Yet these are not the only positions the pans can be in; they can be in a near infinite number of positions between each of those positions prescribed as Types on Messer's typology, depending on the given thinker/school of thought's beliefs about the relative importance of science and Christian doctrine.

In contrast, the other typologies I have discussed cannot be illustrated in this way. The other typologies are more like pieces of fruit which might go on those double pan scales. For example, imagine we have two pieces of fruit representing two positions on Barbour's typology: one represents the dialogue view and one represents the integration view. Those pieces of fruit are those pieces of fruit: they are divisible but there is no 'middle ground' between one piece of fruit and the other piece of fruit. To have a position which is not neatly described by one of Barbour's Types would mean cutting a piece off one of the pieces of fruit and another piece off the other piece of fruit and making a fruit salad of them. Yet this is not a distinct position in its own right; it is merely an amalgamation of two pre-described positions. With Messer's typology, however, there can exist distinct positions which do not fall neatly into the Types Messer has described; rather, the pans can swing between the prescribed Types as far as the outer limits (Types 1 and 5) allow them.

In 2018, Messer updated his typology in his article 'Evolution and Theodicy: How (Not) to do Science and Theology'.[82] There are small but evident changes in this new configuration. Messer's 2018 typology still consists of five Types and they are broadly the same, in that they each deal with the relative importance of science and Christian theology to each other. One important distinction between the two is that Messer has changed how he describes the theological side of the debate: in 2007, his typology described the relationship between science and

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[82] Messer, "Evolution." See especially: 823-824.

Christian *doctrine*; in 2018, his typology describes the relationship between science and Christian *tradition*.

Messer also lays out five "caveats" for his typology: limitations which should be considered when working with his typology.

1. He acknowledges that his typology is a simplified view of the field,[83] though I would say that this is probably true of all typologies – something must be sacrificed for the sake of convenience, and in this case it is a certain level of nuance.

2. These discussions are not limited to science and Christian tradition, but in practice often include inputs from various other sources; Messer notes that philosophy often plays a particularly important role in at least some of these discussions.[84] Indeed, I shall engage with philosophy in areas of this thesis, particularly in Chapter 3.

3. There are two questions which must be answered when analysing a thinker's position on the relationship between science and Christian theology. The first question is how much weight the voices of science and Christian theology are given in that position; the second question is what kind of contribution each are making to the position. Messer's typology only answers the first question.[85] Yet, as I have already mentioned, I believe that this is one of its strengths, as it allows more fluidity along the spectrum of views when identifying a particular thinker or school of thought.

4. My methodology in this thesis differs slightly from Messer's. Messer says: "I am not using the typology to classify *authors*, but only particular arguments, moves, or approaches." He acknowledges that it is difficult to fit individuals into neat Types such as those which are present on his typology.[86] I shall be using his typology to classify authors, with the possible exception of Chapter 2 when I shall be classifying two authors as examples of a wider approach to the relationship between science and Christian theology, namely Intelligent Design theory. Furthermore, I believe that the inability to fit individuals into neat Types is, again, related

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[83] Ibid.
[84] Ibid, 824.
[85] Ibid.
[86] Ibid.

to the strengths of Messer's typology; a thinker need not be placed into a neat Type at one of the five points which Messer has identified along the spectrum of his typology. Rather, one can be placed somewhere in the spaces between those five Types.

5. Messer acknowledges that his use of his typology "is not purely descriptive or neutral. … I regard some ways of approaching the science-theology dialogue as clearly preferable to others."[87] This is certainly an aspect of academic discourse which cannot be avoided and one of which I will be no doubt be guilty throughout this thesis.

I would add a further distinction between my use of Messer's typology and Messer's original intentions for his typology in that Messer specifically identifies biology over physics or chemistry as the scientific concern when discussing the various positions on the relationship between science and Christian theology. I will, however, not be limiting the science side of the discussion to biology but also widening the discussion into physics. Physics will play a larger part in the discussion in Chapter 3.

In my investigation into the relationship between science and Christian theology, I shall use Messer's typology as it is laid out in *Selfish Genes and Christian Ethics*, rather than as it is laid out in 'Evolution and Theodicy: How (Not) to do Science and Theology', to search for a satisfactory account of the relationship between the two. I shall focus on Messer's earlier iteration for several reasons.

A minor reason is that Messer has a different view on the strengths and weaknesses of his 2018 iteration from what I would ascribe to his 2007 iteration. As I have already discussed, the main strength of Messer's typology, particularly over other typologies, is that it is more of a spectrum. There is more flexibility in Messer's typology than in, for example, Barbour's. Messer has identified those aspects of his 2018 typology which afford it this spectrum-like quality and has said that they are weaknesses. As these are the strengths which I would ascribe to his 2007 typology, it is more pertinent to use the 2007 iteration rather than the 2018 iteration.

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[87] Ibid.

The biggest reason for my use of the 2007 iteration over the 2018 iteration is the shift in focus in the latter from Christian doctrine to Christian tradition, and thus there is a shift of focus on the Christian theology side of the table in terms of what is being related to science.

Daniel J Treier has noted that there is a duality with regards to doctrine. While doctrine is always "teaching", as in the contents of that teaching rather than the act of teaching itself, doctrinal teaching can come in two forms: "a communicable proposition or … a church activity". In this way, he says, doctrine is cousins with theology, tradition, and wisdom.[88] John E Theil defines tradition in the same volume: tradition "in its Christian use refers to a body of authoritative beliefs, teachings, or practices that, in the faith of believers, conveys the gospel message of Jesus Christ".[89]

Taking these two definitions into account, I would say that tradition contains the central ideas and beliefs of Christianity while doctrine develops the worldview in which that tradition is based. Understood this way, Christian doctrine has more to say in dialogue with science than does Christian tradition. Christian doctrine describes a worldview which can speak to a scientific worldview. Contrastingly, there are no central ideas of science, no equivalent of the salvific nature of the Resurrection. Science tells us that the world is ordered and can be understood, but I would say that this resembles doctrine more than tradition. The idea that the world is ordered and can be understood does not depend on transmission from person to person and/or generation to generation. Scientific ideas which may depend on this transmission are individual theories, such as relativity and quantum mechanics.

These scientific ideas are constantly being developed and investigated, and as such I do not think that there is an 'easy' way to define a specific scientific tradition, using the definition of tradition which Theil provides, which can be used analogously with Christian tradition. Doctrine, on the other hand, when understood as per Treier's definition, can be found in both Christian theology and science. Thus, a focus on the relationship between Christian doctrine and

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[88] Daniel J Treier, "Doctrine," in *The Cambridge Dictionary of Christian Theology*, eds. Ian A McFarland et al. (Cambridge: Cambridge University Press, 2011), 146.
[89] John E Theil, "Tradition," in *The Cambridge Dictionary of Christian Theology*, eds. Ian A McFarland et al. (Cambridge: Cambridge University Press, 2011), 510.

science over the relationship between Christian tradition and science is more pertinent for this thesis, and in turn so is a focus on the 2007 iteration of Messer's typology over the 2018 iteration. It should also be noted that I will be using Messer's typology to describe the relationship between science and Christian theology as opposed to science and religion more widely.

Methodology

In each chapter of this thesis, I shall be looking at one of the five Types on Messer's typology. In each case, I provide an example of that chapter's Type and evaluate that example in terms of how satisfactory its formulation of the relationship between science and Christian theology is. A distinctive element in the methodology of this thesis is that I shall draw on analogies from the science fiction and/or fantasy genres (hereafter speculative fiction) to illustrate these discussions, particularly focusing on the relationship between magic and electronic and/or mechanical technology in those analogies. This will enable me to engage with the literature from a new angle and with a fresh lens.

Both the thinkers on science-theology relations and the creators of the fictions are describing the same world as it is understood by humans – it is merely the case that the fictions are one step removed compared to the thinkers. The thinkers themselves are describing the world as they understand it; the fictions are representations of their creators' understanding of the world. The creators have a certain level of freedom when exploring issues of compatibility in the magic/technology relationship, as compared with our thinker when exploring issues of compatibility in the science/Christian theology relationship. The creators can frame their viewpoints in fictional worlds which do not necessarily – and in the case of the analogies I shall be using, do not – follow the rules which the world described by the thinkers follow. This freedom gives them the opportunity to explore further, deeper, and in different ways. The differences between the rules of the fictional worlds and the rules of the real world allow the analogies to highlight certain points and areas which our thinkers cannot necessarily cover themselves.

A common trope within speculative fiction is the incompatibility of magic and electronic/mechanical technology. In many cases, magic outright blocks

technology from working.[90] In many other cases, fantasy is set in medieval or pseudo-medieval settings, where the magic extant in the world has no electronic/mechanical technology with which to interact.[91] Similarly, in many science fictions, electronic/mechanical technology is rife but the world is devoid of magic.[92]

The strained relationship between magic and technology in speculative fiction has interesting parallels with the (supposed) strained relationship between science and Christian theology outside of these fictions. As Barbour has noted, the conflict model receives much attention outside of academia due to its marketability. In the public eye, a non-conflict relationship between science and Christian theology is often questioned and seen as unusual. Similarly, speculative fictions where magic and technology are in any kind of non-conflict relationship with each other is often seen as an unusual occurrence. As we shall see in our first two analogies, where technology and magic are related to each other in speculative fiction there is often a sense that either one must completely give way for the other or one must be redefined to keep the two separate from each other. Yet as we shall see in our third analogy, this does not necessarily have to be the case. The use of these analogies will highlight (Chapters 1 and 2) and challenge (Chapter 3) the assumptions made by some of our thinkers that science and Christian theology either need to be kept apart from each other or in some way redefined to fit with each other.

With respect to why I have chosen the particular analogies which I use in this thesis, the debate between magic and technology in these fictions is, as I shall show, treated similarly to how the interaction between Christian theology and science is depicted in the discussions I shall be entering. While they are not

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[90] One notable example of this is in the *Harry Potter* book series, where it is explicitly stated that Hogwarts is such a magical place that 'Muggle technology' cannot work within the grounds of the school.

[91] The analogy in Chapter 1, the video game series *The Elder Scrolls*, portrays a pseudo-medieval world where electronic technology does not exist and mechanical technology is unusual and impressive. Other examples of this type of fantasy include *Lord of the Rings*; *A Song of Ice and Fire* and its television adaption *Game of Thrones*; and *The Chronicles of Narnia*, where advanced technology is limited to Earth and the world of Narnia exists in a pseudo-medieval state.

[92] Science fictions which focus exclusively on electronic/mechanical technology at the expense of magic include *Star Trek*; *Proxima*; and *Portal*.

exactly alike, the similarities are deep enough that there is a benefit to the discussion.

In Chapter 1, I shall be discussing Richard Dawkins' 'brand' of New Atheism as an example of Type 1 on Messer's typology. I shall focus on Dawkins' argument that science can give us all the necessary knowledge about the world but can still afford us a sense of wonder because it contains within it an inherent 'poetic wonder'. I shall argue that Dawkins has, perhaps inadvertently, created a pseudo-religion in doing so, and, furthermore, that this was inevitable considering Dawkins' positioning on Messer's typology.[93]

I shall contrast Dawkins' New Atheism with the Dwemer society from the video game series *The Elder Scrolls*. The Dwemer society are a remarkably technologically advanced race who favour science, technology, and logic over magic. Despite this, they end up creating their own god – the Numidium – powered by the magical heart of a god. Both Dawkins and the Dwemer have similar relationships to the organised religions of their respective realities. This similarity is limited in the sense that there is objective proof of the existence of the gods in the world of *The Elder Scrolls* and so Dawkins' arguments that a creator God has been proven unnecessary by evolutionary theory could not be used by the Dwemer to discredit the existence of the gods in their world. Yet the derision with which Dawkins regards organised religion is analogous to the derision with which the Dwemer regard the religions within the world of *The Elder Scrolls*. I shall compare Dawkins' construction of his New Atheism to the Dwemers' construction of the Numidium to highlight how Dawkins' argument leads him to the inadvertent creation of a pseudo-religion.

In Chapter 2, I shall discuss the Intelligent Design Movement and its attempts to scientifically legitimise teleology. I shall focus on the arguments put forward by William Dembski and Michael Behe – those of the design inference and irreducible complexity respectively – and evaluate them. I shall conclude by

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[93] It is perhaps interesting to note that Yuval Noah Harari has argued that *Homo sapiens* may be in the process of using science to upgrade themselves into gods: "In seeking bliss and immortality humans are in fact trying to upgrade themselves into gods. Not just because these are divine qualities, but because in order to overcome old age and misery humans will first have to acquire godlike control of their own biological substratum." (Yuval Noah Harari, *Homo Deus: A Brief History of Tomorrow*, [London: Vintage, 2017], 49).

accusing them of both that which I shall call the traditional God of the Gaps and of what I shall call the Ultimate God of the Gaps.

I shall compare the work of Behe and Dembski as members of the Intelligent Design Movement with a discussion of magic, technology, and deity in the *Thor* franchise of the *Marvel Cinematic Universe*. Throughout the three *Thor* films, there is clear use of God of the Gaps arguments (although the phrase is never used by any of the characters). In the first film, secondary protagonist astrophysicist Dr Jane Foster explains the magic of Thor's home of Asgard using Arthur C Clarke's Third Law.[94] Similarly, Asgard is home to a device called the Bifrost which affords the Asgardians faster-than-light travel; Dr Foster studies the Bifrost and declares it to be an Einstein-Rosen Bridge. There are many similar examples of where Asgardian technology is viewed by various characters as indicative of magic and deity, and thus something analogous to a God of the Gaps argument is being framed. This gives a new angle on instances in which Intelligent Design thinkers such as Michael Behe and William Dembski put forth their own God of the Gaps arguments. I shall also show how they transcend the traditional God of the Gaps (which is the kind of God of the Gaps which we see in the *Thor* franchise) and commit the Ultimate God of the Gaps fallacy.

Chapter 3 contains the main thrust of my argument: that there is a way to hold both science and Christian theology authentically in the same worldview. I shall focus on the works of John Polkinghorne, who argues for a synthesis of science and Christian theology.

My analogy for Chapter 3 is the video game *Final Fantasy XV*, though I shall also reference its midquel movie, *Kingsglaive: Final Fantasy XV*. The events of the *Final Fantasy XV* universe take place on the world of Eos, where the four main countries, Lucis, Accordo, Tenebrae, and Niflheim, have all experienced Industrial Revolutions but magic is still a part of the universe. The universe is built in such a way that magic and technology are compatible with each other and have a healthy relationship with each other. In some cases, they even complement each other. The almost seamless synthesis between magic and technology which can be found in the world of *Final Fantasy XV* will be shown

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[94] *Thor*, directed by Kenneth Branagh. (2011; Hollywood, California: Paramount Pictures), Film.

to be analogous to the portrayal of the relationship between science and Christian theology which Polkinghorne puts forward.

This use of analogy does, however, have its limitations. Science is not the same as technology, and technology does not necessarily function the same way in the worlds of my analogies as science does in the world which the thinkers I shall be discussing are describing. More problematic is the analogy of religion and Christian theology as magic. Considering that I shall be focusing solely on Christian theology, which has a negative view of magic, the analogy of the two could cause issues. Furthermore, all the fictional worlds I shall be using as my analogies contain religion, theology, and deities alongside magic – or, at least, the idea of religion, theology, and deity, as is the case with the *Thor* franchise.

By my use of such analogies, I do not wish to equate Christian theology with magic; magic is a different ontological reality from religion and theology in both the fictional worlds I shall be discussing and in the world which the thinkers I shall be discussing describe, just as science is a different ontological reality to technology on both sides of my analogies. Yet this is not to say that magic and religion or Christian theology share the same relationship as science and technology do. Technology as I shall be discussing it is a product of science, but magic as I shall be discussing it is not a product of religion and/or theology. Magic and religion/theology are not connected in the same way as science and technology are on either side of my analogies. My purpose in this thesis is to investigate the two relationships on either side of my analogies in contrast to the other: on the side of my fictional analogies, the relationship between technology and magic; on the other side, the relationship between science and religion/Christian theology. Science and technology are not meant to be taken as identical to each other in respect of which side of the analogy they are being discussed, nor are magic and Christian theology. They are analogous to each other, but not identical to each other.

In my conclusion, I shall sum up all three of my chapters and reveal that just as there is no necessary tension between magic and technology in speculative fiction, there is no necessary tension between science and Christian theology. Ultimately, I shall propose that Type 3 on Messer's typology offers the most satisfactory understanding of the relationship between science and Christian doctrine in the contemporary West and will agree with Polkinghorne's iteration

of the relationship between science and Christian doctrine within the ultimate reality.

Chapter 1 – Richard Dawkins' Numidium

Introduction

Neil Messer identifies five Types along his spectrum, ranging from where one trusts science completely and dismisses Christian doctrine, to where one trusts Christian doctrine completely and dismisses science.[95] In this chapter, I shall be discussing the first of these five Types, which Messer identifies with two of the key members of the New Atheist movement: Daniel Dennett and Richard Dawkins.[96]

As Stephen Bullivant notes, two types of atheism can be identified: positive atheism and negative atheism. Negative atheism is where the atheist does not dispute the existence of a personal God, but rather maintains that she has no faith. Positive atheism is where the atheist does not believe in the existence of a personal God at all.[97] While the most influential atheist thinkers can be found among the canon of the nineteenth century, those which John F. Haught describes as the 'old atheists',[98] a newer atheistic movement has made itself known in that decade affectionally referred to as the 'Noughties'.

The term 'New Atheist' first appeared in 2006, following the publication of Richard Dawkins' *The God Delusion*,[99] in which he argued for a form of positive atheism.[100] Nearly a decade and a half later, it remains the most influential New Atheist text. Thus, while Messer focuses on Dennett's work as an example of Type 1 and only uses Dawkins to illustrate his points, the superior influence of Dawkins' work over Dennett's makes him more pertinent to this chapter's

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[95] Neil Messer, *Selfish Genes and Christian Ethics: Theological and Ethical Reflections on Evolution and Biology*, (London: SCM Press, 2007), 49-50.

[96] Ibid, 50-53.

[97] Stephen Bullivant, "Defining 'Atheism'," in *The Oxford Handbook of Atheism*, eds. Stephen Bullivant and Michael Ruse (Oxford: Oxford University Press, 2013), 14-15. See also: Stephen Bullivant and Michael Ruse, "Introduction: The Study of Atheism," in *The Oxford Handbook of Atheism*, eds. Stephen Bullivant and Michael Ruse (Oxford: Oxford University Press, 2013), 4; Michael Martin, "General Introduction," in *The Cambridge Companion to Atheism*, ed. Michael Martin (Cambridge: Cambridge University Press, 2007), 1.

[98] John F Haught, *God and the New Atheism: A Critical Response to Dawkins, Harris, and Hitchens*, (Louisville, Kentucky: Westminster John Knox Press, 2008), 22-27.

[99] Thomas Zenk, "New Atheism," in *The Oxford Handbook of Atheism*, eds. Stephen Bullivant and Michael Ruse (Oxford: Oxford University Press, 2013), 251.

[100] It should be noted, however, that Dawkins does not self-identify his position as positive atheism.

question: Does Dawkins' New Atheism provide us with a satisfactory formulation of the relationship between science and Christian theology in the contemporary West?

I should at this point make some clarifications. Throughout this chapter, and indeed throughout this thesis, I shall be referring to science and religion without much further explanation of the terms. In his Faraday Paper, Denis Alexander offers definitions for both.[101] For the former, he maintains that when contemporary writers use the word, they are referring to experimental science. I, too, shall use this definition. On the matter of religion, he gives the following definition: "'a system of beliefs relating to transcendent realities concerning purpose and meaning in the world, expressed in social practices'".[102] I shall follow this definition, with the following amendment: that such a system of beliefs has the *potential* to be expressed in social practices. A cult with 'members' who adhere to the cult's ideology but who do not meet (either virtually or physically) as adherents to the cult's ideology is still, I would argue, a form of cult.[103]

Second, I shall be referring to self-transcendence throughout this chapter, which I shall be using to describe the effort to elevate oneself to the position of full appreciation of the cosmos. Joann Conn distinguishes between philosophical self-transcendence and religious self-transcendence. The philosophical self-transcendence makes a distinction between the material and the spiritual, "the spiritual being understood as that capacity for self-transcendence through knowledge and love which characterises the human being as a person", so that self-transcendence in a philosophical respect need only consist of a transcendence beyond the material to the spiritual. Religious self-transcendence denotes self-transcendence as inherently relational, particularly in respect of the individual's personal relationship with God, so that religious

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[101] Denis R Alexander, "Models for Relating Science and Religion." *Faraday Papers* no.3 (2007), Accessed October 24, 2017. URL: https://www.faraday.st-edmunds.cam.ac.uk/resources/Faraday%20Papers/Faraday%20Paper%203%20Alexander_EN.pdf.

[102] Ibid, 1.

[103] I am using the word 'cult' here to refer to religious ideologies, though it is conceivable that other forms of cult which can be described using this definition are possible (such as political cults). Indeed, Yuval Noah Harari has argued that political ideologies such as communism and Nazism can be considered religions, particularly when using the definition of religion which he provides (Yuval Noah Harari, *Homo Deus: A Brief History of Tomorrow*, [London: Vintage, 2017], 211-212).

self-transcendence consists of a developing relationship between and individual and God, the deepening of which is the process of self-transcendence.[104] For the purposes of this chapter, I shall be referring to philosophical rather than religious self-transcendence. Where the seekers of self-transcendence in this chapter, Dawkins and the Dwemer, are conducting their attempts to this end, they are not seeking to improve their relationship with any god or deity; rather, they are attempting to 'rise above' the material and enter the 'spiritual' (or supernatural) domain. Of course, in Dawkins' case, he perceives no spiritual domain for him to enter, and so Dawkins' self-transcendence is more psychological than literal, whereas the opposite is true for the Dwemer. Dawkins' self-transcendence is that which Mark E Koltko-Rivera reminds his readers as being the oft overlooked sixth tier of Maslow's famous Hierarchy of Needs, whereby the individual "Seeks to further a cause beyond the self and to experience a communion beyond the boundaries of the self through peak experience".[105] This remains a form of philosophical self-transcendence for two reasons: a) this type of self-transcendence lacks the relational element of religious self-transcendence as described by Conn; and b) this type of self-transcendence is concerned with a transcendence from the material to the physical, which is typical of philosophical self-transcendence as Conn has defined it.

Finally, I have described New Atheism as a 'movement'. This is debated, as the other three key texts of New Atheism – *God is Not Great* by Christopher Hitchens (2008), *The End of Faith* by Sam Harris (2006), and *Breaking the Spell* by the philosopher Daniel C Dennett (2007) – were referred to as New Atheist texts because of *The God Delusion*.[106] Furthermore, at no point do these writers claim to be part of a movement. They are making their own, albeit similar, arguments, though the differences between them are enough to give one pause as to whether they are in fact consciously 'working as one'. Indeed, it would seem clear by their own admission that they are not.[107] This is in stark contrast

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[104] Joann Wolksi Conn, "Spirituality," in *The New Dictionary of Theology*, eds. Joseph A Komonchak, Mary Collins, Dermot A Lane (Dublin: Gill and Macmillan, 1990), 981.
[105] Mark E Koltko-Rivera, "Rediscovering the Later Version of Maslow's Hierarchy of Needs: Self-Transcendence and Opportunities for Theory, Research, and Unification." *Review of General Psychology* 10, no. 4 (2006): 303.
[106] Zenk, "New Atheism," 251.
[107] Zenk references a debate held between the four 'heads' of the New Atheist 'movement', during which none of them used the term New Atheism (Zenk, "New Atheism," 254).

to the Intelligent Design Movement, the focus of Chapter 2, where its members are explicitly working towards a single goal. Because of this, I shall refer throughout this chapter to Dawkins' New Atheism, to distinguish it from the New Atheism of the other three writers. If one is to see Dawkins' New Atheism as a distinct position, then its key text is *The God Delusion*. The work of decades comes to a head in this text, where all the atheistic arguments which have peppered Dawkins' works since the 1970s are condensed into one.

A friend of my mother was concerned when she discovered that I would be reading Richard Dawkins. She feared for my spirituality, that I would 'lose my religion'. Indeed, this appears to be what Richard Dawkins wants: in *The God Delusion* he declares his hope that "religious readers who open it will be atheists when they put it down".[108] This statement would seem rather evangelistic, but such religious motifs are not uncommon in Dawkins' New Atheism. Zenk describes two scholarly reactions to New Atheism: the first being that New Atheism is nothing more than a scientific critique of religion;[109] the second being that New Atheism is itself a form of religion, albeit a pseudo-religion.[110] This is the view I shall take in this chapter. Perhaps then, my mother's friend should have been less concerned that I would lose religion, but rather that I would lose my faith in Christian theology.

I shall develop this idea that Dawkins in fact gives rise to a substitute religion by comparing Dawkins' New Atheism to the Dwemer society from *The Elder Scrolls* video game series. I shall begin by providing the reader with the necessary information about the Dwemer to understand the analogy I am making; after this, I shall compare the narrative of the Dwemers' history to Dawkins' methodology, with the aim of revealing that just as the Dwemer created their own religion based on science, technology, and logic with their own god, called the Numidium, with the ultimate aim of achieving self-transcendence, so too has Dawkins created his own religion, albeit perhaps inadvertently; finally, I shall discuss Dawkins' New Atheism as a typical expression of Type 1 on Messer's typology and argue that his construction of

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[108] Richard Dawkins, *The God Delusion*, (London: Transworld Publishers, 2006), 28.
[109] Zenk, "New Atheism," 252.
[110] Ibid, 253.

New Atheism as a pseudo-religion analogous to that of the Dwemer is inevitable.

I shall be focusing on the following of Dawkins' texts: *The Blind Watchmaker* (1986), *River Out of Eden* (1995), *Unweaving the Rainbow* (1999), *A Devil's Chaplain* (2004),[111] *The God Delusion* (2006), and *The Magic of Reality* (2011).[112]

The Story of the Dwemer

In this section, I shall compare the story of the Dwemer to Dawkins' methodology. There are two main areas of the Dwemer's story which I shall use to discuss Dawkins' New Atheism: the discovery of the Heart of Lorkhan, and the construction of the Numidium.

The Elder Scrolls series is a series of video games developed by Bethesda Game Studios and published by Bethesda Softworks.[113] At the time of writing, it consists of five main titles and several spin-off titles. To understand the story of the Dwemer and why it is useful as an analogy in discussing Dawkins' New Atheism, we must delve into the lore of *The Elder Scrolls* series.

The games take place on the continent of Tamriel, on the planet Nirn, on the mortal plane of Mundus. Tamriel consists of nine provinces, though for the purposes of this discussion we need only concern ourselves with one, called Morrowind.[114] Furthermore, Mundus is not the only plane of existence within the cosmology: there exist also Aetherius and Oblivion.

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[111] *A Devil's Chaplain* is a collection of essays, and as such I shall be discussing the arguments of each essay separately when appropriate.

[112] Alongside my academic sources, I shall refer to pages from the website *The Elder Scrolls Wiki*. This website is an online encyclopaedia of information relating to the world of *The Elder Scrolls*, and so has been useful in gathering the necessary information about the Dwemer. I shall also be using relatively similar sources for my other analogies in Chapters 2 and 3.

[113] Since I began work on this project, Bethesda Game Studios and Bethesda Softworks have been involved in several controversies surrounding their latest video game release, *Fallout 76* (November 2018) and merchandise relating to that release. In using an example from *The Elder Scrolls* series in my thesis, I am not endorsing or condoning anything that has been done by either the publisher (Bethesda Softworks) or the developer (Bethesda Game Studios) of both *The Elder Scrolls* series and of *Fallout 76*. For a comprehensive and detailed overview of the controversies surrounding *Fallout 76*, see: Coach Toolshed Gaming. "The Fallout 76 Saga." *YouTube*. Video playlist. Accessed May 2019. https://www.youtube.com/watch?v=6uo6gGIUrcw&list=PLEb60ZWLR0hUQB131l-BnGVRErrJ4bUPI).

[114] Later in the chapter, I will make a passing reference to events which occur in another province of Tamriel called Skyrim.

The creation of Mundus plays a vital part in the story of the Dwemer. Before Mundus existed, there were only immortal and celestial beings known as the et'Ada.[115] One such et'Ada was Lorkhan, who made the initial decision to create a mortal plane which would become Mundus.[116] Lorkhan persuaded other et'Ada to help him create Mundus. Yet it became apparent during the creation process that the et'Ada creating Mundus would have to give up some of their own power in order to form the new plane of existence.[117] After this revelation, some abandoned the project.

Many et'Ada were furious with Lorkhan for neglecting to inform them of this caveat of creation. They tried Lorkhan at an event known as the Convention[118] and executed him, ripping out his heart and throwing it down to Nirn. It landed at the base of Red Mountain, a volcano in Morrowind.[119]

Once the creation of Mundus and Nirn was complete, life upon the mortal plane began to flourish. There are three 'groups' of races on Tamriel: the beast races, the Mer (elven) races, and the races of Man. The Dwemer were a Mer race.[120] Another elven race is important for this story: the Chimer, who resided in Morrowind with the Dwemer.[121]

The Dwemer were a massively technological race. They were far more advanced in this respect than any other race on Nirn, and achieved much through their concentration on science and logic rather than magic and the gods, to the point where the Chimer believed that the Dwemer worshipped these things.[122] Contributors to The Elder Scrolls Wiki theorise that the Dwemer sought self-transcendence for their entire race, with the aspiration of gaining the

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[115] The Elder Scrolls Wiki contributors. "Et'Ada." In *The Elder Scrolls Wiki*. n.d. Accessed December 12, 2017. http://elderscrolls.wikia.com/wiki/Et'Ada.
[116] The Elder Scrolls Wiki contributors. "Lorkhan." In *The Elder Scrolls Wiki*. n.d. Accessed December 7, 2017. http://elderscrolls.wikia.com/wiki/Lorkhan.
[117] The Elder Scrolls Wiki contributors. "Dwemer." In *The Elder Scrolls Wiki*. n.d. Accessed December 7, 2017. http://elderscrolls.wikia.com/wiki/Dwemer.
[118] Ibid.
[119] The Elder Scrolls Wiki contributors, "Lorkhan."
[120] The Elder Scrolls Wiki contributors, "Dwemer."
[121] Raptomeat. "The Definitive Guide to the Dwemer." *The Imperial Library*. Accessed December 2017. https://www.imperial-library.info/content/definitive-guide-dwemer.
[122] Vivec, "The Battle of Red Mountain." *The Imperial Library*. Accessed December 2017. https://www.imperial-library.info/content/battle-red-mountain.

immortality of the et'Ada: "Most of the Dwemer wished to ascend to the same level of divine power that the Gods had".[123]

The turning point of the Dwemer's narrative was when Kagrenac, a Dwemer Tonal Architect[124] with power, influence, and resources, discovered the Heart of Lorkhan within Red Mountain.[125] He deduced that it was the heart of a god, and believed that it could serve the Dwemer in their quest for self-transcendence: "the Dwemer were pursuing the goal of attaining divinity through the combined effort of magic and science, and their High Priest Kagrenac believed that Lorkhan's Heart was the key".[126] Kagrenac built a golem known as the Numidium, "a massive artificial god" also known as the Brass God, which "was designed to help [the Dwemer] gain the divine power of immortality and transcend Nirn" and would be powered by the Heart of Lorkhan.[127] He also created three tools, Keening, Sunder, and Wraithguard, as a means of manipulating the Heart.[128]

When the Chimer received news of the construction of the Numidium, they saw it as an affront to their religious beliefs and went to war with the Dwemer.[129] The war came to a head at The Battle of Red Mountain, during which Kagrenac used his three tools on the Heart of Lorkhan,[130] and when he did so, the entire Dwemer race disappeared from the face of Nirn.[131]

In the fiction, the disappearance of the Dwemer has been a much-debated topic by Tamrielic scholars in the thousands of years that have passed since The Battle of Red Mountain. Many theories have surfaced, both within the world of *The Elder Scrolls* and without, about what happened to the Dwemer and where

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[123] The Elder Scrolls Wiki contributors, "Dwemer" (sic).
[124] Dwemer Tonal Architects were mage-engineers and craftsmen (The Elder Scrolls Wiki contributors, "Tonal Architect." In *The Elder Scrolls Wiki*. n.d. Accessed December 7, 2017. http://elderscrolls.wikia.com/wiki/Tonal_Architect.)
[125] The Elder Scrolls Wiki contributors, "Dwemer."
[126] The Elder Scrolls Wiki contributors, "Lorkhan."
[127] The Elder Scrolls Wiki contributors, "Dwemer."
[128] Ibid.
[129] Ibid.
[130] The Elder Scrolls Wiki contributors, "Dwemer."; The Elder Scrolls Wiki contributors, "War of the First Council." In *The Elder Scrolls Wiki*. n.d. Accessed December 7, 2017. http://elderscrolls.wikia.com/wiki/War_of_the_First_Council; The Elder Scrolls Wiki contributors, "Disappearance of the Dwarves." In *The Elder Scrolls Wiki*. n.d. Accessed December 7, 2017. http://elderscrolls.wikia.com/wiki/Disappearance_of_the_Dwarves; Gilvus Barelo, "Kagrenac's Tools." *The Imperial Library*. Accessed December 2017. https://www.imperial-library.info/content/kagrenacs-tools.
[131] The Elder Scrolls Wiki contributors, "Dwemer."

they might be now.[132] Whatever came to pass will likely never be fully discerned, but it is the events leading up to their disappearance, when the Dwemer attempted self-transcendence through manipulation of an old god by the tools of science, logic, and reason, that are most relevant to the task at hand.

Dawkins' Numidium

The Dwemer rejected the gods of Nirn in much the same way as Dawkins rejects the gods of Earth's religions. While he usually focuses on the Abrahamic God in his writings, it is clear that he abhors all forms of divine being and would almost certainly reject the gods of *The Elder Scrolls* were he to live on Nirn. The key difference between these two cases is, of course, that there is hard evidence and objective proof for the existence of the gods within *The Elder Scrolls* universe,[133] as is a staple of the fantasy genre. As such, I shall be discussing the parallels between the Dwemers' construction of the Numidium and Dawkins' construction of his New Atheism.

Discovering the Heart of Lorkhan

The Dwemer had already begun their search for philosophical self-transcendence by the time they discovered the Heart of Lorkhan within Red Mountain. The discovery of the Heart showed Kagrenac how the ambitions of his race might be realised. Similarly, Dawkins is already on a search for self-transcendence when he writes *Unweaving the Rainbow*, and the book is a detailed explanation of how one might achieve such self-transcendence without God, religion, or theism i.e. through the wonders of science. It is this message that flows through the entire book, and to which he returns in *The Magic of Reality*.

Dawkins is explicit and detailed about his views of the poetry of science, and laments that science is all too often accused of "barren desolation, of promoting

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[132] For a detailed account on all the theories surrounding the disappearance of the Dwemer, see: Raptomeat. "The Definitive Guide to the Dwemer"; Roshank Redemption. "Will the DWEMER Return in ELDER SCROLLS IV? (TES 6 Discussion)." *YouTube*. Video file. July 19 2016. Accessed October 2017. https://youtu.be/NfGNRIF6ENk.

[133] For example, during the third main title of the series, *The Elder Scrolls III: Morrowind*, the god Talos physically appears to the player character, the Nerevarine, as a man named Wulf (The Unofficial Elder Scrolls Pages Wiki contributors, "Morrowind:A Lucky Coin." In *The Unofficial Elder Scrolls Pages*. n.d. Accessed January 16, 2019. https://en.uesp.net/wiki/Morrowind:A_Lucky_Coin.)

an arid and joyless message".[134] He argues that the opposite is in fact the truth: "Science is, or ought to be, the inspiration for great poetry".[135] The reason behind this is that science has the unique power to unravel mysteries in such a way that the solution is more beautiful – more poetic – than the mystery itself ever was.[136]

Each chapter in *The Magic of Reality* is structured in much the same way: first, Dawkins explains what kind of phenomenon he will be tackling (for example, stars, extra-terrestrial life, the cycle of day and night etc.), then gives an example of a myth which attempts to explain that phenomenon. He then goes on to explain the science behind the phenomenon which 'discredits' the myth and concludes that the truth is more beautiful than the myth could ever be, simply because it is true.

When the Dwemer discovered the Heart of Lorkhan in Red Mountain, Kagrenac realised that it would be the path to the Dwemers' self-transcendence and worked on it to achieve that goal. In Dawkins' case, the work has already been done – the rainbow has already been unwoven. What remains is for him to convince the rest of us that he truly has the path to self-transcendence. And so, he constructs his works: his 'Numidium'.

Constructing the Numidium

The construction of the Numidium led to war between the Dwemer and the Chimer because the Chimer saw the Numidium as a blasphemous god.[137] And also Richard Dawkins' New Atheism presents to the world another god.[138] What, then, does Dawkins' god look like? What is his Numidium?

I would argue that Dawkins' 'Numidium' is science itself. Where the Dwemer constructed their Numidium themselves and used the Heart of Lorkhan to power it, Dawkins has found the shell of a Numidium and transformed it into his own Brass God by powering it with his own 'Heart of Lorkhan', poetic wonder. Zenk has mentioned that some critics of New Atheism present the movement as a

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[134] Richard Dawkins, *Unweaving the Rainbow: Science, Delusion and the Appetite for Wonder*, (London: Penguin, 1999), xi.
[135] Ibid, xii.
[136] Dawkins, *Unweaving the Rainbow*, 41; Richard Dawkins, *The Magic of Reality*, (London: Transworld Publishers, 2011), 22, 87.
[137] The Elder Scrolls Wiki contributors, "Dwemer."
[138] I shall not discuss here whether Dawkins' god can be itself considered blasphemous as that question lies beyond the focus of this study.

pseudo-religion: "According to this logic, the science at the bottom of the 'neo-atheist' criticism of religion is no longer regarded as science but rather as an (unacknowledged) ideology or religion".[139] To say that science is an ideology is to compare science to the myths with which Dawkins opens each chapter of *The Magic of Reality*. I am reluctant to make this equation and would rather say that what Dawkins proposes is the fusion of science and poetry together and the 'worship' of the resultant amalgamation, and this is what it means for Dawkins' New Atheism to be a pseudo-religion.[140] Where theists speak of religious experiences and the wonder of them that draws them to God, Dawkins speaks of the poetry of science which brings him to science-inspired atheism.

Unweaving the Rainbow and *The Magic of Reality* are dedicated to evangelising Dawkins' New Atheism. He spends much of the former arguing that science should be conducted through a sense of wonder. Indeed, this sense of wonder should be the only inspiration behind doing science in the first place.[141]

Dawkins also puts forth the thesis that poetry should be inspired by science; the road, it would seem, goes both ways:

> "It is my thesis that the spirit of wonder which led Blake to Christian mysticism, Keats to Arcadian myth and Yeats to Fenians and fairies, is the very same spirit that moves great scientists; a spirit which, if fed back to poets in scientific guise, might inspire still greater poetry".[142]

Indeed, Dawkins says, there are some parts of reality which can only be understood through poetry. He speaks of the 'time' before the Big Bang, when time did not exist. We mere mortals cannot conceive of such a 'time', and so we can only appreciate the wonder of such a reality through the medium of poetry.[143] To appreciate the beauty of the universe, one need not look to traditional religion, God, or theism: one need only pair together science and poetry.[144]

In the first chapter of *The Magic of Reality*, Dawkins defines magic thus: there are three kinds of magic – supernatural magic, stage magic, and poetic magic.

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[139] Zenk, "New Atheism," 253.
[140] I shall discuss this further when I discuss my suspicion that Dawkins' pseudo-religious New Atheism was an inevitability when he was constructing his New Atheism in the manner he did.
[141] Dawkins, *Unweaving the Rainbow*, xiv.
[142] Ibid, 27.
[143] Ibid, 60.
[144] Ibid, 313.

Stage magic is nothing more than prestidigitation, while supernatural magic does not exist at all. The only 'real' form of magic is poetic magic. This, he writes, is the titular 'magic of reality'.[145] It is, therefore, the poetic magic afforded to us by science which enables us to transcend our mortal lives, rather than the supernatural magic afforded to us by theism and religion. The traditional gods cannot give us our self-transcendence; we must construct our own.

The theistic wonder offered to us by religion, therefore, is only a reflection of the poetic wonder of which Dawkins speaks. Where theistic wonder exists *only* as a reflection of the poetic wonder, poetic wonder is true and exists in the real world which we all experience. In drawing this parallel, Dawkins has afforded poetic wonder the properties of eternity and worship-worthiness which would usually be ascribed to the divine.

A key difference between the object of theistic wonder and the object of Dawkins' poetic wonder is that the object of theistic wonder is classically defined by necessary existence and the object of Dawkins' poetic wonder is classically defined by contingency (i.e. the laws of science do have to be the way that they are in this universe, but a universe where the laws of science were different from those which we experience is still logically conceivable). One might therefore question why the object of Dawkins' poetic wonder is eternal and worship-worthy in the same way that the object of theistic wonder is. I would say that Dawkins would ascribe these properties to science as the object of poetic wonder as they are necessarily true *in this universe*, despite that they are contingently true in *any given universe*. We do not live in a universe with other laws and this universe could never have other laws, so from our 'perspective', the laws of science to which Dawkins ascribes eternity and worship-worthiness are as necessary as God is as the object of theistic wonder.

Like Kagrenac, Dawkins has taken a sense of wonder (the Heart of Lorkhan), manipulated it using his own methodology (Keening, Sunder, and Wraithguard), and used it to power his New Atheist Numidium. As the Dwemer sought to form their own self-transcendence through technology, Dawkins seeks to form his own through science. Yet neither the Dwemer nor Dawkins can use either technology or science to achieve their self-transcendence. Both must introduce

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[145] Dawkins, *The Magic of Reality*, 19-21.

a factor which contains features of the divine (for Dawkins, it is the eternal and worship-worthy poetic wonder of science; for the Dwemer, it is the literal heart of a divine being) before it is sufficient for the intended purpose; for the Dwemer, this was the Heart of Lorkhan, and for Dawkins, it is the poetic wonder of science.

It is here we see the inconsistency of Dawkins' methodology. Dawkins wishes to eradicate an appeal to the supernatural and immaterial, but as we have seen, he is unable to fully escape appeal to a form of the divine. He can only achieve his goal through a phenomenon to which he ascribes divine attributes, as the Dwemer could only bring their Brass God to life with the Heart of Lorkhan. In attempting to establish the non-existence of God, Dawkins has merely replaced the Abrahamic God with a form of divinity that is, to him, more palatable.

Not only this, but Dawkins has effectively replaced those religions which he feels are dangerous to society (a view which I shall discuss in the next part of this chapter) with his own. It may be at the point of my writing this thesis that Dawkins does not have any other disciples to join him but, as I have already said, a cult merely requires the *potential* to be expressed in social practices to be a cult, and the potential for such social expression is present in Dawkins' New Atheism.[146]

There are, however, differences between the endeavours of the Dwemer and of Dawkins. For the former, self-transcendence included gaining immortality, whereas Dawkins does not seek to extend his mortal life.[147] For the Dwemer, self-transcendence was to gain the powers of the et-Ada, one of which powers was immortality. For Dawkins, there is no such immortal being whose everlasting qualities he envies, and so his position is one that does not include a desire for immortality.

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[146] One way this might happen is through cultists holding meetings to ruminate on the poetic wonder of science, perhaps reading or even writing poetry inspired by the natural world as revealed by natural science.

[147] There are, however, many who would seek to use science to gain a kind of immortality through the method of Whole Brain Emulation (WBE). Shanahan describes WBE as: the attempt "to make an exact working copy (or copies) of a particular brain in a nonbiological (e.g., computational) substrate", whereby a brain is scanned, artificially simulated, then embodied in a robotic structure. See: Murray Shanahan, *The Technological Singularity*, (Cambridge, Massachusetts: MIT Press, 2015), 15-50.

We have seen that the Dwemer were not successful in their attempts to achieve self-transcendence until they had discovered the Heart of Lorkhan – that is, until they had discovered some element of the divine. Is Dawkins similarly compelled to include something akin to or possessing some of the qualities of divinity to 'power' his New Atheism?[148]

Inevitability of Pseudo-Religion

In the previous section of this chapter, I argued that Dawkins has structured his New Atheism in such a way as to present science as a form of pseudo-religion. In this half of the chapter, I want to examine why Dawkins' self-positioning, in effect, in Type 1 of Messer's typology (where theology is disregarded in favour of science) makes it far more difficult for Dawkins to construct his argument in such a way that his New Atheism does not become a pseudo-religion.[149] Once again, I shall be drawing on the story of the Dwemer from *The Elder Scrolls* video game series to illustrate this argument.

I explained the story of the Dwemer above and how the construction of the Numidum can be compared and contrasted with Dawkins' construction of his New Atheism.

This assumes that Dawkins' intentions are the same as those of the Dwemer – that is, that Dawkins seeks philosophical self-transcendence (or, at least, a form of self-transcendence). It is not obvious that Dawkins would explain his motivations in this way. As we shall see when I discuss some of his individual arguments below, Dawkins is usually attempting to reveal the issues and fallacies with religion and religious belief. His intention is not to self-transcend *per se*, but to truncate those areas which are detrimental to society and the self from our everyday lives. Self-transcendence is not a necessary component of this endeavour. Where Dawkins does slip into desire for self-transcendence analogous with those same desires of the Dwemer is in his use of poetic

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[148] It is perhaps interesting to note that Dawkins has said that "one could make a reasonably respectable case" for a deist god – which he describes as "God of the physicists", "God the mathematician" – but that he would not accept that case. (See: 2sedated. "Richard Dawkins – Deist position is a very serious one." *YouTube*. Video file. November 8 2012. Accessed March 6. 2019. https://www.youtube.com/watch?v=f7kjNu9CUw0.) It would seem, from these comments, that Dawkins regards deism as a more respectable and defendable position than theism, but that deism is still less convincing than atheism.

[149] Although, as I have mentioned previously, Messer does reference Dawkins in his discussion of his Type 1, but only as an illustration; his focus when discussing his Type 1 is Dennett.

wonder to replace the same transcendent wonder that is often gained through and from religious belief.

Dawkins reveals that *Unweaving the Rainbow* was written with the Keatsian rebuttal of Newton in mind:[150] that Keats was wrong to say that Newton had taken the wonder out of the rainbow by explaining how the refraction of light can split the spectrum. Dawkins' understanding of Keats' feelings on Newton's work is that Keats felt that Newton had taken the wonder out of the rainbow and thus left a void in its place; without that sense of wonder, something is missing from the human experience of the natural world. In *Unweaving the Rainbow*, Dawkins argues against this notion.

Yet he is only arguing against the first part of Keats' argument: that Newton had taken the wonder out of the rainbow by providing a scientific explanation for its existence. Dawkins does not argue against the notion that when that sense of wonder is removed from the human experience of the natural world something necessary and important goes missing. Dawkins still believes that wonder is necessarily a part of the human experience of the natural world; he merely says that the scientific explanations of the natural world do not detract from that wonder. The religiously-inspired wonder Keats longs for and feels Newton denied him is replaced, in Dawkins' argument, with the scientifically-inspired wonder which is his 'magic of reality'. Dawkins still needs a sense of wonder when the religious has been taken away and he finds it in science itself. Thus, Dawkins has inserted his scientific wonder into his New Atheism to perform the same function as religiously-inspired wonder would for a theist. As such, I would argue that Dawkins' New Atheism is a form of (pseudo-)religion where those parts of traditional religion with which Dawkins takes issue have been removed and replaced with parts which perform the same function for the individual but which are more palatable to Dawkins himself.

Dawkins is adamant that he is not attempting to form a religion himself. He is not calling people to follow him as religious people follow a religious leader. He is not calling anyone to believe in his ideology as religious people believe in their religious ideology. Dawkins' New Atheism is an ideology in much the same way that Communism is a political ideology and Pentecostalism is a religious

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[150] Dawkins, *Unweaving the Rainbow*, xii.

ideology. Even though ideologies function in similar ways to each other, the qualification of that ideology depends on several factors. What makes Dawkins' New Atheism closer to a religious ideology than any other kind of ideology?

I would say the answer can be found in Dawkins' asking science to perform the same personal function as religion does in the lives of many theists. Where a theist may look to the divine and those aspects of reality which are religiously available to them in their quest for transcendence, the Dawkinsian New Atheist looks to the poetic wonder of science, as Dawkins describes it to be. The engagement with and reaction to this poetic wonder is the same for both the theist and the New Atheist. They are, after all, experiencing the same kind of thing (i.e. the natural world); the only real difference is that the theist is ascribing their poetic wonder to the divine, where the New Atheist is ascribing that poetic wonder to the natural world as explained and explored by the natural sciences. Just as the Numidium plays the part of affording transcendence to the Dwemer as the other gods worshipped on Nirn do for their respective worshippers, so too does science play the same part of affording transcendence to Dawkins as gods worshipped on Earth do for theists. In constructing his New Atheism in this way, Dawkins runs into the problem (at least, he would see it as a problem) of ending up with a religious sensibility, albeit adhering to an atheistic pseudo-religion.[151]

A discussion of Dawkins on religion in society

It is perhaps worth noting at this point a crucial difference between Dawkins and the Dwemer: that being that the Dwemer did not have a problem with the concept of religion in and of itself; they merely did not wish to worship the gods that were 'on offer', as it were. Dawkins, on the other hand, believes that there is a real problem and danger with the phenomenon of religion, and dedicates large portions of his works to these ideas.

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[151] I offer an interesting passage from *The God Delusion* about Dawkins' perceptions of his own religiosity:

> "Let me sum up Einsteinian religion in one more quotation from Einstein himself: 'To 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.' In this sense I too am religious, with the reservation that 'cannot grasp' does not have to mean 'forever ungraspable.' But I prefer not to call myself religious because it is misleading. It is destructively misleading because, for the vast majority of people, 'religion' implies 'supernatural'." (Dawkins, *The God Delusion*, 40 [sic].)

I shall explain and evaluate several of the arguments Dawkins gives against the phenomenon of religion. This will highlight Dawkins' claim that religion is a real danger within contemporary Western society as well as discuss some of the more intricate and intimate pitfalls in Dawkins' arguments for his version of New Atheism.

First, Dawkins accuses religious believers of being content with ignorance, as religion encourages them to be.[152] He accuses religion of driving people to do nonsensical things,[153] and finally, he deems it childish to believe anything other than that one's "life is as meaningful, as full and as wonderful as [one] choose[s] to make it".[154]

Dawkins ignores the generally accepted fact that religion has inspired many scientists to discover as much as they can about the world and the universe, the most famous example of which being Isaac Newton, as already mentioned. In this case, as in the case with many other religious scientists, religion did not encourage ignorance but was the inspiration behind a search for knowledge. Lastly, I do not see why one should be discouraged from looking outside of oneself to find meaning in one's life. I am also sceptical of the importance Dawkins places on 'maturity' as opposed to 'childishness', given the lack of evidence for either the reality or the severity of the latter's supposedly inherent flaws.

Similarly, in *The Magic of Reality*, he discusses the story of Adam and Eve as it appears in Genesis 2 and 3, and YHWH's anger at the primeval couple for eating of the fruit of the tree of good and evil. Dawkins claims that YHWH's anger is due to Adam and Eve acquiring knowledge, or "losing their innocence, I suppose".[155] The use of the words 'I suppose' highlight one of the main issues common to all of Dawkins' direct commentary on theology: that Dawkins has neither the knowledge of these matters, nor the desire to learn about them.[156]

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[152] Dawkins, *The God Delusion*, 152.
[153] Ibid, 351.
[154] Ibid, 404.
[155] Dawkins, *The Magic of Reality*, 36.
[156] Ward has commented on Dawkins' past refusals to acknowledge theology as a discipline and his ignorance thereof. See: Keith Ward, *Why There Almost Certainly is a God: Doubting Dawkins*, (Oxford: Lion, 2008), 7-8.

He thus offers his own interpretation and commentary thereof with no discussion of any other possible interpretations.

Second, Dawkins claims that the only morality which religion encourages is that inspired by the fear of the punishment that would be brought on them by the wrath of God should they transgress His will.[157] Thus, the religious are faking their morality, while atheists are accused of immorality despite there being no evidence to support such a claim.[158] On the contrary, Dawkins argues, religion is itself a strong motivator to immorality. It would be pointless to wage a war in the name of atheism, but there have been many wars fought in the name of religion.[159] Furthermore, theism motivates terrorism, for the atrocities of the 11th September 2001 would not have been possible if it were not for religion and the belief in an afterlife, and terrorists use a religiously-motivated 'us' and 'them' mentality to justify their violence in much the same way that Hitler did during the Second World War.[160]

Dawkins argues that religion is the only motivation behind terrorism, and that all terrorism is always religiously motivated. It is invalid, however, to say that religion is immoral because some religious people have committed acts of terrorism. David Fergusson references David Martin's work on this subject, in which he concludes that even religiously motivated conflicts (and, as we shall see, not all conflicts are religiously motivated) have other factors at play as well, such as political and ethnic factors. Furthermore, a religious war is no more violent than a secular one.[161]

We have already shown that there is no necessary connection between atheism and immorality, and that similarly there is no necessary connection between religion and morality. On the contrary, both are capable of immorality. Many atrocities are committed with religious justification, it is true, but that does not mean that *all* atrocities are *exclusively* committed with religious justification. The dropping of atomic bombs on Hiroshima and Nagasaki were politically motivated as much as historical acts of terrorism have been religiously

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[157] Dawkins, *The God Delusion*, 258-259. Dawkins illustrates this point with reference to the events occurring during a Montreal police strike (Dawkins, *The God Delusion*, 261).
[158] Ibid, 309.
[159] Ibid, 316.
[160] Ibid, 186-187.
[161] David Fergusson, *Faith and Its Critics: A Conversation*, (Oxford: Oxford University Press, 2009), 138.

motivated. Terrorism is, by its definition, a political act rather than a *solely* religious one; while religion may play a part in the commitment of an act of terrorism, an act does not require religious motivation of any kind or of any amount to be an act of terrorism.[162]

We can illustrate this within our fictional analogy with an event from the lore of *The Elder Scrolls* concerning the Dwemers' interactions with another Tamrielic race of Elves, the Snow Elves. The Snow Elves were forced to share their province with a race of Men called the Atmorans, who lived in a city of their own building called Saarthal. On the whole, the two races lived "in relative peace", until the Snow Elves attacked Saarthal.[163] The war eventually tipped in the Atmorans' favour, and the Snow Elves sought sanctuary with the Dwemer. The Dwemer agreed to give them asylum, but only if they consumed a toxic fungus, resulting in the deformation of the Snow Elves into the Falmer,[164] a race of "twisted, evil creatures"[165] whose name can be translated into 'the Betrayed'.[166] The Dwemer, therefore, are responsible for the degeneration of the Snow Elves into the Falmer, but the Snow Elves, who, unlike the Dwemer, were religious and indeed worshipped the same gods as the Chimer,[167] sowed the seeds of their own destruction when they attacked Saarthal with (seemingly) no provocation. I would argue, then, that just because there is no necessary connection between atheism and immorality, or between theism and immorality, both are equally capable of immorality, and Dawkins' argument that only religion sows the seeds of immorality is insufficient.[168]

Dawkins further supports his claim with the view that while no war has been waged in the name of atheism, wars have been waged in the name of religion. I

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[162] The Oxford English Dictionary gives the following definition of 'terrorism': "The unofficial or unauthorized use of violence and intimidation in the pursuit of political aims" ("terrorism, n.." In *Oxford English Dictionary*. n.d. Accessed April 25, 2019. http://www.oed.com/view/Entry/199608.)

[163] The Elder Scrolls Wiki contributors, "Atmoran." In *The Elder Scrolls Wiki*. n.d. Accessed February 19, 2018. http://elderscrolls.wikia.com/wiki/Atmoran.

[164] The Elder Scrolls Wiki contributors, "Dwemer."

[165] The Elder Scrolls Wiki contributors, "Falmer (Skyrim)." In *The Elder Scrolls Wiki*. n.d. Accessed February 20, 2018. http://elderscrolls.wikia.com/wiki/Falmer_(Skyrim).

[166] The Elder Scrolls Wiki contributors, "Snow Elf." In *The Elder Scrolls Wiki*. n.d. Accessed February 20, 2018. http://elderscrolls.wikia.com/wiki/Snow_Elves.

[167] Ibid.

[168] It should further be noted that the Snow Elves' motivations for attacking Saarthal were primarily political. There is, however, a theory that the Snow Elves were seeking the Eye of Magnus, a powerful magical artefact, which was buried beneath Saarthal; this theory is given in the fictional in-game book *Night of Tears* (See: *The Elder Scrolls V: Skyrim Special Edition*, directed by Todd Howard. [2016; Rockville, Maryland: Bethesda Softworks], PlayStation 4.)

am not denying that there have been religious wars. To draw from our analogy, the War of the First Council was a result of the religious differences between the Chimer and the Dwemer. Nor am I denying that a war has never been fought *in the name of* atheism. Yet Dawkins is implicitly arguing that religion is the motivation behind all wars, and that a secular war has never been fought. Here we see evidence of the New Atheists' positive view of human nature (as noted by Southgate), [169] for in Dawkins' description of morality the only thing driving us to violence, selfishness, and immorality is religion. Without religion, he argues, we would be 'perfectly' moral.

Dawkins similarly claims that as society becomes more secular, the less violent it becomes and the less conflict there is. This, Eagleton recognises, is not true: "We have it, then, from the mouth of Mr. Public Science himself [Dawkins] that aside from a few local hiccups like ecological disaster, ethnic wars, and potential nuclear catastrophe, History is perpetually on the up".[170]

Finally, the accusation that the religious base their morality on nothing more substantial than fear seems misleading at best. To say that theists act morally because they fear punishment shows great ignorance of the beliefs of many theists. While it is true that there are some who make a show of morality for fear of damnation, this cannot be used to generalise to all theists. I would argue that Jesus' teachings explicitly condemn such 'empty' displays of righteousness:

> ""And whenever you pray, do not be like the hypocrites; for they love to stand and pray in the synagogues and at the street corners, so that they may be seen by others. Truly I tell you, they have received their reward. But whenever you pray, go into your room and shut the door and pray to your Father who is in secret; and your Father who sees in secret will reward you."[171]

Augustine, too, teaches similarly: "We cling to Christ, then, by love, not by fear of punishment".[172]

Furthermore, this argument assumes that there are no atheists who act morally out of pure fear either. By his own analogy, Dawkins equates God with a

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[169] Christopher Southgate, "The new atheism," in *God, Humanity and the Cosmos: A Textbook in Science and Religion*, ed. Christopher Southgate (London: T&T Clark, 2011), 321.
[170] Terry Eagleton, *Reason, Faith, and Revolution: Reflections on the God Debate* (New Haven, Connecticut: Yale University Press, 2009), 87-88.
[171] Matthew 6:5-6 [NRSV].
[172] Augustine, *Letter CXLV*, trans. J. G. Cunningham, NPNF[1] (Grand Rapids, Michigan: Eerdmans, 1956, 497).

policeman: a figure who inspires fear of breaking the law. An atheist is just as capable of acting morally out of pure fear of prison as a theist is of acting morally out of pure fear of hell.

In *River Out of Eden*, Dawkins claims that many religious people often come to faith through experiencing some wonder of nature and "have decided that this particular phenomenon … cannot have evolved by gradual stages, because the intermediate, half-formed stages could not have been good for anything".[173] This shows a misunderstanding of religious experiences and their effect on inspiring people to religious faith. Dawkins claims that a person having a religious experience inspired by the wonders of nature will automatically assume that God is the reason behind that phenomenon and that science has played no part in it.[174] This is not true. A person who has had a religious experience of a wondrous natural phenomenon and becomes theistic as a result does not automatically renounce any scientific beliefs they may have had before. A person who looks up at the stars on a cloudless night, knowing that stars are collections of gas and dust left over from the Big Bang which have been compressed due to the immense power of gravity to the point where the amalgamation becomes hot enough for nuclear fusion to take place,[175] and then has a religious experience and becomes a believer in some form of the divine, does not suddenly no longer believe all that they already knew about the formation of stars.

Fourth, Dawkins argues in several places that science is self-regulating and does not hesitate to correct itself when it discovers that it has made a mistake Whereas religion will instead bend the truth to fit its traditions rather than altering its traditions to accord with the truth.[176] In *Unweaving the Rainbow*, he describes the difference between scientists and those he describes as 'mystics' thus: mystics look at mysteries and say that we are not supposed to understand their meaning; scientists revel in those same mysteries but seek to understand

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[173] Richard Dawkins, *River Out of Eden* (London: Weidenfeld & Nicolson, 1995), 61.
[174] Dawkins does not use this terminology himself, but one can infer that he is referring here to religious experiences. For a detailed examination of religious experiences, see: Mark Webb. "Religious Experience." In *Stanford Encyclopedia of Philosophy*, ed. Edward N Zalta. Stanford University Metaphysics Lab, Winter 2011. https://plato.stanford.edu/archives/win2011/entries/religious-experience/.
[175] bill wurtz. "history of the entire world, I guess." *YouTube*. Video file. May 10, 2017. Accessed December 15, 2017. https://www.youtube.com/watch?v=xuCn8ux2gbs.
[176] Dawkins, *The God Delusion*, 319.

them: "'But we're working on it".[177] While "Science progresses by correcting its mistakes, and makes no secret of what it still does not understand", religion is static and unchanging, never seeking to progress for everything that needs to be known is known and everything that is not known does not need to be known.[178] In the essay 'Viruses of the Mind', Dawkins provides a list of the virtues that science has that faith lacks: "testability, evidential support, precision, quantifiability, consistency, intersubjectivity, repeatability, universality, progressiveness, independence of cultural milieu, and so on".[179]

I hold that relying on sacred texts for physical, scientific, and historical truths is naïve, and while it is true that there are many aspects of religious belief that are not supported by empirical evidence, there are several critiques I can levy against this argument. First, Dawkins is talking about "Fundamentalists".[180] Fundamentalism is arguably a part of almost every ideology, religion included, but in focusing on the 'fundamentalists', Dawkins is ignoring those who do not behave as they do.

Furthermore, Dawkins implies that religious people claim to know everything of importance. This is not true. Polkinghorne argues that religion has its own form of the scientific method which differs only in the terminology it uses: rather than beginning with a phenomenon and ending with a theory, the 'theological method' begins with an assertion and ends with a doctrine.[181] The key difference between the two endeavours – the scientific and the theological – is that the natural world is a passive object of scientific study, whereas God is not a passive object of theological study.

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[177] Dawkins, *Unweaving the Rainbow*, 17.

[178] Ibid, 31.

[179] Richard Dawkins, "Viruses of the Mind," in *A Devil's Chaplain: Selected Essays by Richard Dawkins*, ed. Latha Menon (London: Phoenix, 2004), 171. Two further statements in support of this argument can be found in: Dawkins, *Unweaving the Rainbow*, (esp. 33); Richard Dawkins, "Good and Bad Reasons for Believing," in *A Devil's Chaplain: Selected Essays by Richard Dawkins*, ed. Latha Menon (London: Weidenfeld & Nicolson, 2003), 242-248; and Dawkins, *The Magic of Reality*, (esp. 186, 319).

[180] Dawkins, *The Magic of Reality*, 319.

[181] John Polkinghorne, *Science and Christian Belief: Theological Reflections of a Bottom-Up Thinker* (London: SPCK, 1994), 30-51 (esp. 36). A similar argument can be found in: Ian G Barbour, *Religion and Science: Historical and Contemporary Issues* (New York City, New York: Harper Collins, 1997), 106-136, wherein he argues that among the similarities of religion and science are "the interaction of data and theory … the historical character of the interpretive community; the use of models; and the influence of paradigms" as well as the lack of proofs, where religious data is religious experience.

Second, there are many things in Dawkins' list of scientific virtues with which we can take issue. With this list, Dawkins argues that religion lacks the scientific method and therefore the truth claims it makes are insufficient. I would argue that the scientific method is not itself infallible, and therefore it does not necessarily follow that truth claims made by science are sufficient either. Faith does not lack these traits, especially testability, precision, and consistency. It is also unclear why faith cannot be considered 'progressive', particularly when Dawkins does not define what he means by 'progressiveness'. Science is not independent of cultural milieu, for no aspect of human experience truly can be. Faith is a universal trait just as much as science: for in this paragraph, Dawkins does not limit faith to theistic faith. He is using faith, as many New Atheists do, as "*unevidenced belief*".[182] Poole recognises that this is not the only definition of faith, as faith can also mean trust.[183] Additionally, as we have already seen throughout this chapter, science can itself be an object of faith.[184]

Furthermore, theology, like science and most other disciplines, is intersubjective.[185] An academic discipline must be so to function. As I have mentioned, Ward holds the view that Richard Dawkins does not understand theology and that this hinders his arguments. Haught examines this methodological issue further as a problem shared by most of the New Atheists. He accuses them of learning all their theology from Young Earth Creationists and advocates of the Argument from Intelligent Design,[186] arguably those 'fundamentalists' whose behaviour Dawkins so happily generalises to all

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[182] Michael Poole, *The 'New' Atheism: 10 Arguments That Don't Hold Water?* (Oxford: Lion, 2009), 78 [sic].

[183] Ibid, 21.

[184] Furthermore, as Moritz notes, the scientific pursuit as it is understood in the contemporary context cannot function without certain presuppositions; these include a belief in the rationality and order of the natural world and indeed the existence of the external world itself. These presuppositions are themselves a priori, and so are necessarily dependent on a certain level of faith (Joshua M Moritz, *Science and Religion: Beyond Warfare and Toward Understanding* [Winona, Minnesota: Anselm Academic, 2016], 69-71). In this sense, the scientific pursuit itself rests on a certain level faith.

[185] The Oxford English Dictionary defines that which is intersubjective as "Existing between conscious minds" ("intersubjective, adj.." In *Oxford English Dictionary*. n.d. Accessed June 24, 2019. https://www.oed.com/view/Entry/98368.). In this way, by accusing religion of not being intersubjective as opposed to science, Dawkins is arguing that religion does not exist between conscious minds. This is intelligible, as religion and religious beliefs are deeply personal and as such each individual may hold slightly different perspectives on the same religion. In this way, one could say that each individual has their own religion which is not intersubjective. This, however, would be a concept anathema to most religious believers, who would maintain that their religion and their religious beliefs do not exist just for themselves as individuals but are shared between the conscious minds of fellow believers.

[186] Haught, *God and the New Atheism*, xi.

religious believers. Furthermore, the New Atheists wilfully ignore theologians who have written on the matters they themselves are discussing.[187] Haught's basic evaluation of this matter is that the New Atheists would benefit from taking some undergraduate theology modules.[188]

Finally, this argument is grounded in the claim that scientific beliefs are supported by evidence. Yet in wandering into the territory of philosophy, as Ward notes,[189] Dawkins leaves himself open to philosophical rebuttals. It is a scientific belief that the external world exists, but there is no evidence derived from a position of empirical neutrality for such a conclusion (which would be itself subject to the Problem of Induction), and indeed in the field of philosophy many arguments have been made against such claims.[190]

I wish to end this enquiry with a discussion prompted by *Unweaving the Rainbow*. I have discussed that Dawkins believes that there are good reasons and bad reasons for believing something, in that a 'good' reason is when that something is supported by empirical evidence, and a 'bad' reason is any reason other than that something being supported by empirical evidence. In *Unweaving the Rainbow*, Dawkins fears that it is not only religion that is teaching the public to trust in 'bad' reasons for believing in things, but science fiction also – namely, 'bad' science fiction.[191] He illustrates his point with a discussion of the science fiction television show, *The X Files*.[192] Dawkins describes the basic plot of every episode of *The X Files*: there is a mystery, and the two main characters, Mulder and Scully, differ in their views on the nature of the mystery. Mulder believes it is supernatural,[193] while Scully believes in a natural (or scientific) explanation. Often, Mulder is revealed to have been correct in his assumption that the

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[187] Ibid, xii.

[188] Ibid, 32.

[189] Ward, *Doubting Dawkins*, 10.

[190] A notable exponent of this view is George Berkeley, who argued that ordinary objects are nothing more than a collection of ideas which therefore do not exist externally to minds and particularly the mind of God, and only when this is accepted can one save oneself from constant discourse on the nature of such objects. For a detailed description of Berkeley's view, see: Lisa Downing, "George Berkeley." In *Stanford Encyclopedia of Philosophy*, ed. Edward N Zalta. Stanford University Metaphysics Lab, Spring 2013. https://plato.stanford.edu/archives/spr2013/entries/berkeley/.

[191] Dawkins, *Unweaving the Rainbow*, 28-29.

[192] I wish to note at this stage that Dawkins casts no aspersions on *The X Files* as a television show. His description of *The X Files* as 'bad' science fiction is directly correlated to its alleged evangelisation of 'bad' reasons for believing, as Dawkins understands them.

[193] It should be noted that in the case of *The X Files*, supernaturality is usually related to extra-terrestrial rather than divine life or powers. This is an idea to which we shall return in Chapter 2 with the *Thor* case study.

supernatural was involved.[194] This, Dawkins argues, is dangerous, as it teaches viewers to trust supernatural explanations over scientific ones.[195] It is this that makes *The X Files* 'bad' science fiction. He argues that "Science fiction may tinker with the laws of nature, advisedly and preferably one law at a time, but it cannot abolish lawfulness itself and remain good science fiction".[196]

It is interesting to note that Dawkins believes that science fiction which deals with the supernatural is 'abolishing lawfulness'. I do not believe this to be the case. The fantasy writer Brandon Sanderson has written three articles on his Three Laws of Magic, which are guides for writers creating systems of magic for their fictions. Sanderson's First Law concerns itself primarily with giving any magic system rules which regulate how the magic can work within the fictional world and narrative. Sanderson claims to treat his own magic as if it is a science, in which the readers are made aware of how the magic works before it can be used to solve any problems within the narrative.[197] Throughout his articles, he makes mention not just of fantasies but of science fictions as well.[198] Science fiction is bound by Sanderson's Laws as much as fantasy is, and thus it is not the case that science fiction dealing with the supernatural is 'abolishing lawfulness' altogether. Rather, it is clearly defined within the laws of nature and makes perfect sense as far as its own world is concerned. This is what it means for science fiction to be 'good', and it is completely in line with Dawkins' 'good' reasons for believing.

Two points emerge from our discussion. First, the arguments Dawkins gives for his New Atheism are often limited and easily criticised. Second, Dawkins is advocating a removal of religion from society for the reasons I have discussed above as well as many others. If this is the case, then it becomes increasingly detrimental to Dawkins' position if he cannot portray his New Atheism as something other than a pseudo-religion. This is particularly pertinent considering the first of Dawkins' criticisms here discussed: that of religion

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[194] Dawkins, *Unweaving the Rainbow*, 28.
[195] Ibid.
[196] Ibid, 29.
[197] Brandon Sanderson, "Sanderson's First Law." *Brandon Sanderson*. Accessed December 2017. https://brandonsanderson.com/sandersons-first-law/.
[198] "Sanderson's First Law"; Brandon Sanderson, "Sanderson's Second Law." *Brandon Sanderson*. Accessed December 2017. https://brandonsanderson.com/sandersons-second-law/.; Brandon Sanderson, "Sanderson's Third Law." *Brandon Sanderson*. Accessed December 2017. https://brandonsanderson.com/sandersons-third-law-of-magic/.

breeding ignorance and quelling questioning. Dawkins takes issue with congregations following the word of religious authority figures without question. Dawkins himself, however, seemingly expects those religious readers of *The God Delusion* to accept his arguments without question and thus 'convert' to New Atheism by the time they reach the last page.[199]

On replacing religion with New Atheism

It would seem that Dawkins cannot help himself. He seeks to remove all forms of religious belief from society and in his attempt to do so, he creates, in effect, his own form of religion. There have been several works on the seeming necessity of religion within human society. Some cite that religion has an evolutionary advantage.[200] Indeed, Dawkins himself notes that there is "high survival value" in the development of the idea of God:

> "Consider the idea of God. We do not know how it arose in the meme pool. Probably it originated many times by independent 'mutation'. In any case, it is very old indeed. How does it replicate itself? By the spoken and written word, aided by great music and great art. Why does it have such high survival value? Remember that 'survival value' here does not mean value for a gene in a gene pool, but value for a meme in a meme pool. The question really means: What is it about the idea of a god which gives it its stability and penetrance in the cultural environment? The survival value of the god meme in the meme pool results from its great psychological appeal. It proves a superficially plausible answer to deep and troubling questions about existence. It suggests that injustices in this world may be rectified in the next. The 'everlasting arms' hold out a cushion against our own inadequacies which, like a doctor's placebo, is none the less effective for being imaginary. These are some of the reasons why the idea of God is copied so readily in by successive generations of individual brains. God exists, if only in the form of a meme with high survival value, or infective power, in the environment provided by human culture."[201]

If this is the case, then humans as *Homo sapiens* would be in some way necessarily prone to develop the kind of beliefs that we understand and define as religious, just as Dawkins has done in his construction of his New Atheism.

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[199] Admittedly, this may be due to over-confidence on Dawkins' part with regard to the veracity of his arguments. I thank Hatty Walker for this suggestion.

[200] Sosis and Alcorta offer an overview of several arguments pertaining to the evolution of religiosity in *Homo sapiens*, albeit from an anthropological rather than a strictly biological point of view. See: Richard Sosis and Candace Alcorta, "Signaling, Solidarity, and the Sacred: The Evolution of Religious Behavior." *Evolutionary Anthropology*, 12 (2003): 264-274.

[201] Richard Dawkins, *The Selfish Gene* (Oxford: Oxford University Press, 1976), 207.

One cannot remove religion or religious belief from society without replacing it with something else.

Dawkins often accuses anti-evolutionists of forgetting that evolution does not start from scratch. He writes that the attackers of evolution through natural selection are wrong to say that new features should appear in response to new problems almost 'out of thin air', because evolution does not work that way: evolution takes properties that an organism already has and develops that aspect in response to, for example, environmental changes. If it was no longer advantageous for a bird to be able to have wings, said bird would not lose their wings overnight through the process of Darwinian evolution; rather, the characteristic of smaller and smaller wings would be selected for until the bird no longer had wings. Evolution never goes 'back to the drawing board', as it were, and thus 'start again'. Dawkins similarly forgets that he himself is not starting from scratch with regards the creation of a society without religion.

Dawkins is writing in the contemporary West: an intellectual and social climate in which religion and theistic beliefs already exist. Dawkins' ideal society is one where religion is completely missing, but this is a difficult feat to achieve when beginning from a society where religion already exists. We can see an awareness of this problem in those thinkers which Haught describes as the 'old atheists'.[202] For Dawkins and the New Atheists, God and religion can be removed seamlessly from society. For thinkers such as Nietzsche and the other 'old atheists', any attempt to do so would result in the necessary restructuring of Western society. Hyman describes the argument put forward by Nietzsche in *The Gay Science* whereby "such notions as truth, progress, history and absolute presence … are all profoundly theological notions that depend upon the secure foundation that God provides", and "the death of God brings with it the death of metaphysical truth".[203] Similarly, Haught recognises that for thinkers such as Nietzsche, embracing true atheism meant facing "up *honestly* to the logical, ethical, and cultural implications of a godless world".[204] To truncate religion from our society would be to remove the bedrock upon which much of our social structure is placed. If Dawkins wishes to remove such a core

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[202] Haught, *God and the New Atheism*, 22-27.
[203] Gavin Hyman, *A Short History of Atheism* (London, I.B. Tauris, 2010), 171.
[204] Haught, *God and the New Atheism*, 23 [sic].

concept from our society, then it must be replaced with something else – something which functions in the same way to preserve that which makes our society as it is. In Dawkins' formulation of a solution to this 'problem', he ends up replacing religion with science, and thus his form of scientism becomes a pseudo-religion, which he hopes will perform an analogous societal function.

Conclusion

This chapter has been concerned with Type 1 of Messer's typology: that of science-inspired atheism. In contemporary Western society, Richard Dawkins' New Atheism is perhaps one of the most famous and influential iterations of such a position, directly due to the popular success of his 2006 monograph *The God Delusion*. Over the course of this chapter, I have used as an analogy to Dawkins' New Atheism the attempts of the Dwemer and of Kagrenac to achieve self-transcendence through a manipulation of a religious concept into an atheistic body, to identify it as a quasi-religion. I have also undertaken a systematic critique of Dawkins' New Atheism, with the intent to apply my overall question to the position as a whole: can Richard Dawkins' New Atheism, as an example of Type 1 on Messer's typology, give us a satisfactory formulation of the relationship between science and Christian theology in the contemporary West?

The answer is not strictly 'no'. As we have seen, Dawkins attests vigorously to science, and is the (unwitting) founder of a pseudo-religion. In this sense, we can believe in science and follow a religion under New Atheism. Yet the religion we would be following is a pseudo-religion, a sort of travesty of theism, and therefore while Dawkins' New Atheism can give us a satisfactorily accurate representation of the science side of the science/Christian theology relationship, it cannot give us a satisfactorily accurate representation of the Christian-theological side of that same relationship.

We have not, then, discovered a satisfactory answer to our question. If Type 1 is unsatisfactory, then perhaps another of Messer's Types will be satisfactory.

Chapter 2 – Intelligent Design and the *Thor* of the Gaps

Introduction

Intelligent Design theory exists in many ways as the converse of Richard Dawkins' New Atheism. Where Dawkins is writing in the context of the UK, Intelligent Design theorists are writing mainly in the US. Where Dawkins has seated himself firmly on one end of Messer's spectrum of the possible solutions to the 'problem' of the compatibility of science and religion, where all Christian doctrine is rejected in favour of science, Intelligent Design theorists are almost at the opposite end, where all of science is rejected in favour of Christian doctrine. They do not, however, fit neatly into Messer's fifth and final Type. Intelligent Design theorists do not wish to remove science from society, but rather wish to promote religious ideas as science while simultaneously discrediting scientific theories as unscientific, particularly the Darwinian theory of evolution through natural selection.

As with New Atheism as a whole, there exist many different views and opinions within the Intelligent Design Movement,[205] though, unlike New Atheism, Intelligent Design theorists do claim to be disciples of the same cause, following Philip Johnson, "the architect of the intelligent design movement".[206] As such, there are a few central tenets which are shared by most Intelligent Design theorists, and which distinguish the Movement as a distinct entity in and of itself.

Intelligent Design theorists are adamant that 'naturalists', i.e. evolutionists, are yet to demonstrate that evolution is correct.[207] William Dembski, in a dialogue with the anti-Intelligent Design thinker Michael Ruse, criticises the Miller/Urey experiment, an attempt to simulate a possible atmosphere of the early Earth

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[205] Abby Hafer, *The Not-So Intelligent Designer: Why Evolution Explains the Human Body and Intelligent Design Does Not* (Eugene, Oregon: Wipf & Stock, 2015), 10.

[206] Niall Shanks, *God, the Devil, and Darwin: A Critique of Intelligent Design Theory* (Oxford: Oxford University Press, 2004), 11. Hafer argues that those within the Intelligent Design Movement "couldn't agree that gravity makes things fall down", and that the only similarities shared between Intelligent Design's exponents is their political agenda (Hafer, *Not-So Intelligent Designer*, 22). The reader can find the sense of camaraderie in the Intelligent Design Movement in: William A Dembski, ed. *Darwin's Nemesis: Phillip Johnson and the Intelligent Design Movement*. Downers Grove, Illinois: InterVarsity, 2006.

[207] William Dembski, "Who's Got the Magic?" in *Intelligent Design Creationism and Its Critics: Philosophical, Theological, and Scientific Perspectives*, ed. Robert T Pennock (Cambridge, Massachusetts: MIT Press, 2001), 644.

with the aim of seeing if the correct amino acids, the building blocks of life, could have emerged in those conditions, to this end. Dembski says that the experiment was able to produce nothing more than the most basic building blocks of life, and so the naturalists are still lacking in their explanatory support for the theory of evolution.[208] As we shall see throughout this chapter, the nature of complex life is one with which Intelligent Design theorists often wrestle.

A second objection that the Intelligent Design theorists often raise against the theory of evolution is that there is nothing particularly special about it as a scientific theory: many theories which were like the theory of evolution in many respects have already risen and fallen over the centuries, and there is no reason to suppose that this will not eventually happen to the theory of evolution as well.[209] Dembski speaks of Darwinism's "imminent demise", arguing that not only does the scientific community defend Darwinism to its last breath and thereby treats the theory as unfalsifiable (which makes the theory unscientific), but that there is much for which Darwinism cannot account.[210] Dembski does not mention that Darwinism has been and continues to be tested and is consistently found to accurately describe the world across numerous disciplines. Instead, he maintains that it cannot be said that future endeavours will not provide a 'proof' of Intelligent Design and a concrete 'disproof' of Darwinism,[211] and also does not consider the possibility that explanations for those phenomena which he lists as unaccounted for by Darwinism, such as the origin of life and the Cambrian explosion,[212] may in fact be worked into a

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[208] William Dembski and Michael Ruse, "Intelligent Design: A Dialogue," in *Intelligent Design: William A. Dembski & Michael Ruse in Dialogue*, ed. Robert B Stewart (Minneapolis, Minnesota: Fortress Press, 2007), 15. A key weakness of this argument is that the purpose of origin-of-life experiments such as the Miller-Urey experiment is not to find evidence supporting the theory of evolution but to discover how life might have arisen prior to the evolutionary phase. It should be noted that Michael Behe does not agree with Dembski on origin-of-life experiments such as the Miller/Urey experiment; he says that the experiment was successful in producing the 20 naturally-occurring amino acids, but that this is a simple task for chemists in a lab and instead wonders at how the process was done without any chemists some four billion years ago (Michael Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution* [New York City, New York: Free Press, 2006], 146-147).

[209] Michael Behe, "Molecular Machines: Experimental Support for the Design Inference," in *Intelligent Design Creationism and Its Critics: Philosophical, Theological, and Scientific Perspectives*, ed. Robert T Pennock (Cambridge, Massachusetts: MIT Press, 2001), 241.

[210] William Dembski, *Intelligent Design: The Bridge Between Science & Theology* (Downers Grove, Illinois: InterVarsity Press, 1999), 113.

[211] Ibid, 117.

[212] Ibid, 113.

Darwinian framework using evidence collected by scientific experimentation in the future. Similarly, Michael Behe says:

> "When foundations are unearthed, the structures that rest on them are shaken; sometimes they collapse. When sciences such as physics finally uncovered their foundations, old ways of understanding the world had to be tossed out, extensively revised, or restricted to a limited part of nature. Will this happen to the theory of evolution by natural selection?"[213]

That this argument lacks validity, as the perceived failure of some scientific theories does not entail the failure of any given scientific theory, does not seem to bother Behe, who, along with other Intelligent Design theorists, defends the Movement from accusations of creationism.

Several thinkers have branded Intelligent Design as a new or updated form of creationism: Barbara Forrest describes it as "the most recent – and most dangerous – manifestation of creationism";[214] Brauer and Brumbaugh call it "neo-creationist";[215] and Philip Kitcher dismisses the Movement as nothing more than creation science 'making a comeback' after it failed in its first attempt to overcome the theory of evolution.[216] Behe writes that supporting Intelligent Design is not the same as "espousing creationism", which is the exclusive purview of Young Earth Creationists with whom neither Behe nor Dembski wish to identify.[217] Dembski is adamant that to lump Intelligent Design and creationism in the same camp is a grave mistake, for Intelligent Design is "entirely separable from creationism".[218]

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[213] Behe, *Darwin's Black Box*, 13.
[214] Barbara Forest, "The Wedge at Work: How Intelligent Design Creationism Is Wedging Its Way into the Cultural and Academic Mainstream," in *Intelligent Design Creationism and Its Critics: Philosophical, Theological, and Scientific Perspectives*, ed. Robert T Pennock (Cambridge, Massachusetts: MIT Press, 2001), 5.
[215] Matthew J Brauer and Daniel R Brumbaugh, "Biology Remystified: The Scientific Claims of the New Creationists," in *Intelligent Design Creationism and Its Critics: Philosophical, Theological, and Scientific Perspectives*, ed. Robert T Pennock (Cambridge, Massachusetts: MIT Press, 2001), 289.
[216] Philip Kitcher, "Born-Again Creationism," in *Intelligent Design Creationism and Its Critics: Philosophical, Theological, and Scientific Perspectives*, ed. Robert T Pennock (Cambridge, Massachusetts: MIT Press, 2001), 257.
[217] Behe, *Darwin's Black Box*, 15; William Dembski, *The End of Christianity: Finding a Good God in an Evil World* (Nashville, Tennessee: B&H, 2009), 48ff. Dembski does note that there are advantages to the Young Earth Creationist view, particularly in terms of theodicy. These advantages are discussed later.
[218] Dembski, "Who's Got the Magic?", 640; William Dembski, *The Design Inference: Eliminating Chance Through Small Possibilities* (Cambridge: Cambridge University Press, 1998), 60. He further distinguishes between the two with his use of 'us' and 'them' language.

The Intelligent Design theorists have taken great pains to distinguish themselves as espousing a distinct position capable of a) scientifically disproving the adequacy of the theory of evolution to properly and fully explain the origin and complexity of living organisms and organic systems; and b) proving that an Intelligent Designer had a hand in the formation of the universe and of the life which inhabits it. One of the ways in which they do this is to invoke two types of evolution: microevolution and macroevolution. Behe describes the difference between the two thus: "Roughly speaking, *microevolution* describes changes that can be made in one or a few small jumps, whereas *macroevolution* describes changes that appear to require large jumps", before going on to say that microevolution is 'easy' to believe, while macroevolution is more 'difficult' to believe as there is no evidence to suggest that the large jumps required by Darwinian evolution (macroevolution) can be achieved through lots of smaller jumps (microevolution).[219] Allene Phy-Olsen argues that microevolution can easily be proved, for we can observe its effects and results in such evolution as is achieved by selective breeding, whereas macroevolution is much more difficult to prove because it cannot be observed in a single human lifetime.[220] As such, Intelligent Design theorists do not forsake all of science, and neither do they dismiss the theory of evolution entirely out of hand, and so they cannot be placed in Type 5. Yet their position is far too dependent on religious doctrine to be placed in Type 4. Rather, they exist in a middle Type between these two: Type 4.5, if you will. We have seen in Chapter 1 that Type 1 does not give us a satisfactory answer to the question of the relationship between science and Christian doctrine, and so in this chapter I shall be discussing whether Intelligent Design – existing as it does between Types 4 and 5 – can offer a better answer.

I shall discuss two Intelligent Design thinkers: Michael Behe and William Dembski, who are often contended with by scholars discussing Intelligent Design theory. Both have offered support for Intelligent Design though their

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[219] Behe, *Darwin's Black Box*, 24 (sic). See also: Dembski, *Bridge*, 113.

[220] Allene Phy-Olson, *Evolution, Creationism, and Intelligent Design* (Santa Barbara, California: Greenwood, 2010), 64. Hafer contends the distinction between microevolution and macroevolution, saying that such terms are used by biologists for purely descriptive reasons and that there is no such line between the two as the Intelligent Design theorists maintain. Rather, macroevolution is the sum of many microevolutionary parts. (Hafer, *Not-So Intelligent Designer*, 60).

approaches are different from one another. As such, I shall begin by describing and evaluating their individual positions. First, however, I shall explore the background and history of Intelligent Design theory and its roots in teleology. I shall then describe my analogy for this chapter: the *Thor* franchise within the *Marvel Cinematic Universe* (hereafter *MCU*). This analogy will be used throughout the chapter to illustrate both that the Intelligent Design Movement is guilty of the fallacy of the God of the Gaps, and that Hafer is correct to say that the Intelligent Design theorists are unscientific in their methodologies. Ultimately, I shall find Intelligent Design theory wanting, due to the weakness of its arguments and its committing the fallacy of the God of the Gaps.

Intelligent Design Theory's Teleological Tradition

The most famous iteration of the argument from design was given by William Paley. He tells the parable of someone discovering a watch on the road, concluding that it must have had a designer, and extrapolating that reasoning to the natural world as a whole:

> "the inference, we think, is inevitable, that the watch must have had a maker: that there must have existed, at some time, and at some place or another, an artificer or artificers who formed it for the purpose which we find it actually to answer; who comprehended its construction, and designed its use".[221]

Paley's example has been much discredited. Indeed, David Hume argued against Paley's reasoning before Paley had even put pen to paper, arguing that the analogy between a mechanical artefact such as Paley's watch and the natural world is invalid: "But surely you will not affirm that the universe bears such a resemblance to a house, that we can with the same certainty infer a similar cause, or that the analogy is here entire and perfect."[222]

While this is arguably one of the weaker arguments Hume gives against the reasoning which is later employed by Paley, Hume has many other criticisms to draw upon, including the idea that seeing God as designer of the universe in the same way that a clockmaker is the designer of a watch is to make God too much like human beings:

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[221] William Paley, "An especially famous design argument," in *Philosophy of Religion: A Guide and Anthology*, ed. Brian Davies (Oxford: Oxford University Press, [1802], 2000), 254.
[222] David Hume, "We cannot know that the world is designed by God," in *Philosophy of Religion: A Guide and Anthology*, ed. Brian Davies (Oxford: Oxford University Press, [1779], 2000), 261.

"I was from the beginning scandalised, I must own, with this resemblance, which is asserted, between the Deity and human creatures; and must conceive it to imply such a degradation of the supreme Being as no sound theist could endure. With your assistance, therefore, Demea, I shall endeavour to defend what you justly call the adorable mysteriousness of divine nature,"[223]

Where the watch's design involved much trial and error before it was finalised as the exquisite artefact found by Paley's wanderer, Hume argues, if God so designed the universe in such a way then this too would have involved much trial and error: many lesser universes would have been designed and scrapped before ours was finally created; the existence of such lesser universes would mean that God is not only capable of making mistakes and is therefore not perfect as classical theism would paint Him, but that He *has* made mistakes, and has done so on a cosmological level.[224] I would add an additional consequence, in that our universe could also be one of the 'mistakes' and that God will go on designing better and better universes throughout eternity. Not only this, but this could lead to a problem of infinite regress where God is continually making 'better' universes *ad infinitum*.

Similarly, where human construction is collaborative, the analogy Paley draws could imply that the universe was not designed and constructed by one divine being but by many, which would conflict with the monotheistic worldview Paley supports.[225] Finally, the analogy runs the risk of making God anthropomorphic, which many would wish to avoid.[226]

Paley's watch example is no longer taken seriously as an argument for teleology, but it is important to understand the tradition of which he was representative, and that Intelligent Design theorists are in a sense continuing. As with Paley, they fall foul of one of the more common criticisms of this type of inference to divine teleology: that of the God of the Gaps. Before I level this criticism against the Intelligent Design theorists, I wish to examine and evaluate each of our two thinkers individually. My evaluation of these thinkers, however, will draw upon the *Thor* franchise and the *MCU*, and so I shall begin by giving the reader an explanation of the case study at hand.

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[223] Ibid, 262.
[224] Ibid, 265.
[225] Ibid.
[226] Ibid, 266.

Thor and the *MCU*

The *MCU* was launched in 2008 and boasts several franchises which overlap and intersect. One such franchise is the *Thor* franchise, which at the time of writing consists of three films: *Thor*, *Thor: The Dark World*, and *Thor: Ragnarok*. These films are based on the original *Marvel* comics which in turn are based on Norse mythology. Within the *MCU*, those characters based on Norse deities are shown to have apparently supernatural powers, which are nevertheless described as nothing more than advanced science.

For clarity, I shall provide the reader with a brief description of the first two *Thor* films: *Thor* and *Thor: The Dark World*.[227] *Thor* introduces the world and characters. Thor, son of Odin and prince of Asgard, is to be named crown prince when Asgard is infiltrated by its long-time nemesis, the Jötunar. Against his father's wishes, Thor seeks revenge, and as a result is banished to Earth and relieved of both his powers and his mythical hammer, Mjølnir. Thor's brother, Loki, remains on Asgard and subsequently becomes regent when Odin falls into a coma-like state known as the Odinsleep. Eventually, Thor proves his worthiness to wield Mjølnir and can return to Asgard. During his time on Earth, Thor is studied by and begins a relationship with Dr Foster, as well as befriending her colleague, Dr Erik Selvig, and her intern, Darcy. Much of the film is dedicated to Dr Foster reconciling the existence of ancient Norse deities with her knowledge of astrophysics.[228]

Set two years after *Thor*, *Thor: The Dark World* centres on an event known as the Convergence and its awakening of Asgard's ancient rivals, the Dark Elves. During the film, Dr Foster absorbs a powerful cosmic force known as the Aether and is taken to Asgard to receive diagnosis and treatment. Much as in *Thor*, the apparently magical technology of Asgard is redefined as advanced science which is possible but not yet actual on Earth.[229]

There are many instances during these two films in which the nature of Asgardian 'magic' as advanced science is explored. I wish to focus on two

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[227] The third film in the franchise, *Thor: Ragnarok*, will be discussed, but the reference I shall be making to that film does not necessitate the reader having any prior or additional knowledge of the film's plot.

[228] *Thor*, directed by Kenneth Branaugh. (2011; Hollywood, California: Paramount Pictures), Film.

[229] *Thor: The Dark World*, directed by Alan Taylor. (2013; Burbank, California: Marvel Studios), Film.

which appear in *Thor* and *Thor: The Dark World* respectively: the Rainbow Bridge and the Bifrost, and the Soul Forge.

The Rainbow Bridge exists on Asgard and leads to the Bifrost. The Rainbow Bridge and the Bifrost are used by Asgardians to travel between Realms. In her initial research, before speaking with Thor, Dr Foster studies the photos she took of Thor arriving to Earth via the Bifrost upon his banishment and determines that "the lensing around these edges is characteristic of an Einstein-Rosen Bridge". Dr Selvig explains that an Einstein-Rosen Bridge is "a theoretical connection between two different points of spacetime", while Dr Foster uses the more familiar terminology "wormhole", to explain the phenomenon to Darcy.[230]

This scene is the first of three in *Thor* discussing the nature of Asgardian magic as advanced science. In the second, Dr Foster, Dr Selvig, and Darcy are contemplating the original Norse mythology and how it can relate to the events they are experiencing. During this discussion, Dr Foster invokes Arthur C Clarke's famous Third Law, that any suitably advanced technology is indistinguishable from magic. She then claims that, if the Rainbow Bridge is an Einstein-Rosen Bridge, 'advanced beings' could have crossed it even if humans could not. In agreement, Darcy says, "A primitive culture like the Vikings might have worshipped [such advanced beings] as deities".[231] In the opening narration of *Thor*, the Asgardians are shown warring with the Jötunar in 10th Century Norway, and Odin explains that humans at that time were aware that they were 'not alone' but believed that the other worlds of the universe were home to their gods.[232] Darcy's comment here harks back to the sentiment given in the narration at the beginning of the film. In this later scene we not only see a direct invocation of Clarke's Third Law, but a demonstration of Shermer's Last Law. In his book, *Why Darwin Matters: The Case Against Intelligent Design*, Michael Shermer creates a Law of his own based on Clarke's Third Law. Where Clarke is focusing on technology, Shermer says, his Law focuses on intelligent extra-terrestrial beings. Shermer's Last Law reads as follows: "*Any sufficiently*

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[230] *Thor.*
[231] Ibid.
[232] Ibid.

advanced Extra-Terrestrial Intelligence is indistinguishable from God".[233] Shermer's Last Law is put directly into play in the *Thor* franchise, where the members of the advanced alien race of Asgardians are transformed in Earthen mythology from extra-terrestrial life to deities.[234]

The third and final important scene shows Thor and Dr Foster discussing the matter of the apparent supernaturality of Asgardian technology and magic. Thor explains that: "Your ancestors called it magic, and you call it science. I come from a place where they're one and the same thing."[235] Once again, we see a demonstration of Clarke's Third Law in relation to Asgardian technology.

The Einstein-Rosen Bridge is the most important of the aspects of the *Thor* franchise for the matter at hand, yet I shall also give a brief description of a similar artefact from *Thor: The Dark World*.

Throughout the events of *Thor: The Dark World*, Dr Foster absorbs a power known as the Aether, which has adverse effects on her body. Thor takes her to Asgard to diagnose her, and in the healing rooms she is placed on a table which creates an incorporeal 'copy' of her body floating above her. Upon seeing this 'copy', Dr Foster enquires of her diagnostician if the table upon which she is lying is a quantum field generator. The diagnostician replies that it is a Soul Forge. Dr Foster then asks if the device 'transfers molecular energy from one place to another', to which the diagnostician replies in the affirmative, and Dr Foster concludes that the device is a quantum field generator.[236] In this scene,

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[233] Michael Shermer, *Why Darwin Matters: The Case Against Intelligent Design* (New York City, New York: Holt Paperbacks), 40 (sic). It should be noted that Kathryn Tanner would have reservations about the implications of Shermer's Last Law. Where Shermer is advocating an almost Feuerbachian system where God is nothing more than humanity writ large to an infinite scale, Tanner argues that God and creatures, including humanity, are different kinds of different things (Kathryn Tanner, *Jesus, Humanity and the Trinity: A Brief Systematic Theology* [Minneapolis, Minnesota: Fortress Press, 2001], 3), to the point where "God is not simply opposed to the characteristics of human beings but beyond any such contrasts" (11). To brand superior extra-terrestrial intelligence as indistinguishable from God would be, for Tanner, a fundamental misunderstanding of the nature of God's transcendence. For the purposes of this analogy, however, Shermer's Last Law is a useful tool to illustrate how the Asgardians as superior extra-terrestrial intelligences have the potentiality to be seen as gods by those inferior to them, while Tanner's acknowledgement that this would not make the Asgardians gods is helpful in realising that the Asgardians are not in fact gods, which is highlighted in the several examples given where their 'divinity' is attributed to nothing more than advanced science as well as in *Thor: The Dark World*, when Odin tells Loki that the Asgardians are "not gods" (*Thor: The Dark World*).
[234] Asgardians are confirmed to be extra-terrestrial in *Thor: The Dark World* in a brief discussion between Darcy and Thor: "How's space?" / "Space is fine." (*Thor: The Dark World*).
[235] *Thor.*
[236] *Thor: The Dark World.*

we see that the Asgardians are aware of and understand the science behind their 'magic', and therefore Clarke's Third Law is present again: to the Asgardians, the Soul Forge is mere science; yet to an Earthling, it would (initially) appear as magic.

That the Asgardians' 'magic' is nothing more than advanced science which is understood as such by Asgardians is made clear in the third film in the *Thor* franchise, *Thor: Ragnarok*. In *Thor: Ragnarok*, Thor meets another character from the wider *MCU*, Doctor Stephen Strange, an actual sorcerer who uses actual magic and sorceries. In Thor's meeting with Doctor Strange in *Thor: Ragnarok*, it becomes clear that Thor is not acclimatised to the use of actual magic and sorceries despite the 'magic' with which he grew up on his home world of Asgard.

The scene where Thor and Doctor Strange interact is relatively short, though Doctor Strange demonstrates many magical talents during the short time he is on screen. The scene begins with Thor knocking on Doctor Strange's door, and rather than the door being opened for him Thor is transported inside the building mid-knock. Such transportation is used multiple times throughout the scene, and Thor's body language and facial expressions reveal that he is not used to such techniques and does not quite understand how they work. This contrasts with the diagnostician's treatment of the Soul Forge, which although is referred to using different terminology than Dr Foster would use, is still understood in a scientific matter. Later in the scene, Doctor Strange conjures a stein of beer for Thor to drink and refills it before Thor's eyes when he is running low: Thor's reaction to this is one of both amazement and confusion.[237]

Thor and Loki (who meets Doctor Strange at the end of this scene) call Doctor Strange a "wizard" and a "sorcerer" respectively.[238] Thus, they are aware of such magical talents existing, but Thor's reactions imply that he has never seen them himself. This scene is very telling in that it shows that that Asgardian technology which Earthlings described as 'magic' was nothing more than science to Asgardians, while real magic still astonishes Asgardians. The relationship between Earthlings and Asgardians is, therefore, the one described

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[237] *Thor: Ragnarok*, directed by Taika Waititi. (2017; Burbank, California: Walt Disney Studios), Film.
[238] Ibid.

by Clarke's and Shermer's Laws, wherein the gap of knowledge is filled with invocations of magic and deity.[239]

This is displayed practically in the *Thor* franchise with which phenomena are investigated by the characters and which are not: where a phenomenon is described as magical or supernatural, investigation is not carried out any further, whereas where something is described as within the purview of science investigation continues. We can see this in the examples I have given. Those artefacts and beings which are treated as within the realms of scientific study are investigated throughout the franchise. Thor, no longer seen as a god, as Odin was by the 10th Century Norwegians, but recognised as an extra-terrestrial intelligent life-form by Dr Foster, Dr Selvig, and Darcy, is studied using the scientific method so that Dr Foster can more clearly understand his biology and how he managed to survive his trip to Earth via the Rainbow Bridge. The Rainbow Bridge, similarly, is recognised not as magic but as an Einstein-Rosen Bridge, thus bringing it into the realm of scientific investigation from the realm of magic and the supernatural and thus can be studied using the scientific method, which Dr Foster proceeds to do. In much the same way as the 10th Century Norwegians did not investigate what they believed to be supernatural but the 21st Century physicists in *Thor* do investigate that which at first appears to be supernatural but is then brought within the realm of science, so too do the Asgardians themselves act in this way. Thor does not attempt to investigate Doctor Strange's abilities once he has deemed Doctor Strange to be a wizard who uses actual magic and not just advanced science. In contrast, Dr Foster's diagnostician in *Thor: The Dark World* shows knowledge of the scientific workings of the Soul Forge, and thus it is clear that the investigation has happened. We were not party to this investigation, but that the diagnostician and Dr Foster can speak to each other about the workings of the Soul Forge using the same scientific language shows that this investigation has occurred.

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[239] Similar events occur in the most recent film in the *MCU*, *Avengers: Endgame*. When discussing the six cosmic artefacts known as the Infinity Stones, Thor (mistakenly) assumes they have the power to bring the dead back to life and attributes this ability to the Stones being "space magic". Furthermore, Thor's mother Frigga, can inexplicably notice when Thor has time travelled and attributes this to the skills she learned from having been "raised by witches"; when Thor is reminded of this, he ceases questioning her ability to "see with more than eyes" and understand that he has time travelled. (*Avengers: Endgame*, directed by Anthony Russo and Joe Russo. [2019; Burbank, California: Marvel Studios], Film.)

I shall use these elements from the *Thor* franchise as comparisons in my evaluations of the arguments of Behe and Dembski.

Michael Behe and Irreducible Complexity

Behe's contribution to Intelligent Design theory is the idea of irreducible complexity: that there exist in the natural world biological systems which are complex in such a way that if any individual component of that system were to be removed, the system would cease to function properly.[240] From this position, Behe draws the conclusion that such supposedly irreducibly complex biological systems "were designed *not* by the laws of nature, not by chance and necessity. Rather, they were *planned*. The designer knew what the systems would look like when they were completed; the designer took steps to bring the system about."[241] Behe never gives an explanation as to what steps the designer took to bring about these irreducibly complex systems, but nevertheless does give examples of systems which he considers to be irreducibly complex.

The first example is that of the human eye. Behe mentions that 19th Century scientists discovered that the human eye would not work if any single part of it was removed, and that if such a thing were to happen the vision of that eye would be either impaired or obliterated.[242]

This example is a curious one, for it highlights the issue within Intelligent Design theory that, if the universe and all its processes therein are the work of an Intelligent Designer, it might be presumed that there would be no inefficiencies in those processes. There are many examples we can cite where this is not the case, including that of the human eye. Dennett, Dingley, and Hafer all mention the 'blind spot', whereby blood vessels and nerve fibres go through the retina in such a way that there exists a part of the human eye which cannot see anything at all.[243] Dingley even goes so far as to say that, had God been the designer of a system with such an inability to function optimally in its intended manner, then

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[240] Behe, "Molecular Machines," 242.
[241] Ibid, 254 (sic).
[242] Ibid, 242. See also: Behe, *Darwin's Black Box*, 25.
[243] Daniel Dennett, "The Hoax of Intelligent Design and How It Was Perpetrated," in *Intelligent Thought: Science versus the Intelligent Design Movement*, ed. John Brockman (New York City, New York: Vintage Books, 2006), 37; Stephen Dingley, "A Blind Watchmaker? A Christian answer for the origin of the world" (lecture, University of Exeter, January 30, 2018); Hafer, *Not-So Intelligent Designer*, 111.

"God's not a very good engineer".[244] Hafer describes this set-up of blood vessels and fibres as "like punching a hole in the imaging chip of a camera",[245] and says that if a designer were to submit the human eye as a final project in a design class, they would receive an F grade.[246] Ann Druyan, too, picks up on the example of the evolution of the eye in her documentary *Cosmos: A Spacetime Odyssey*, presented by Neil DeGrasse Tyson. While not directly mentioning the arguments of thinkers such as Behe, Tyson, on behalf of Druyan, explains that the eye has been used as an example of things in nature which are so complicated that it does not seem possible that they could have arisen through the chancy method of evolution through natural selection. She is adamant, however, that the eye is the result of evolution, and that biology as a field of study does not make sense without the theory of evolution.[247]

As well as discussing the example of the human eye, Hafer examines other examples within nature where the 'design' seems less than optimal. One such example is that of human testicles: because normal human body temperature is too high for sperm production, human testicles must exist on the outside of the body, which puts those in possession of testicles at "all sorts of inconvenience and risk severe pain and worse".[248] Other examples given by Hafer include the birth canal,[249] the human throat,[250] human teeth,[251] and the human genome.[252] In all these examples, Hafer returns to the idea that evidence of sub-optimal design in nature implies that there is no Intelligent Designer; or, at least, that if there is an Intelligent Designer, "One would think that [they] could do better".[253] She says, simply, that human bodies are too 'badly' put together for an intelligent designer to have had any part in the process of their formation.[254]

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[244] Dingley, "Blind Watchmaker?"
[245] Hafer, *Not-So Intelligent Designer,* 111.
[246] Ibid, 110.
[247] Ann Druyan and Steven Soter. "Some of the Things that Molecules Do." *Cosmos: A Spacetime Odyssey*. Directed by Brannon Braga et al. 2014. Los Angeles, California: National Geographic Channel.
[248] Hafer, *Not-So Intelligent Designer*, 3 (sic).
[249] Ibid, 45-52.
[250] Ibid, 71-73.
[251] Ibid, 144-150.
[252] Ibid, 171-176.
[253] Ibid, 3. Smith also notes that there are several areas in which 'bad design' can be found, especially within human 'design' (Kelly C Smith, "Appealing to Ignorance Behind the Cloak of Ambiguity," in I*ntelligent Design Creationism and Its Critics: Philosophical, Theological, and Scientific Perspectives*, ed. Robert T Pennock [Cambridge, Massachusetts: MIT Press, 2001], 724-725).
[254] Ibid, 16.

Not only this, but Hafer also points out that there are instances where other animals seem to have been designed 'better' than humans and says that in those cases God might be presumed to love those animals more than humans. She says, for instance, that many mammals can 'keep' their testicles 'inside' their bodies to keep them safe when not in use, and 'bring' them 'outside' when they are. Elephants, moreover, are warm-blooded mammals who keep their testicles inside at all times without compromising their sperm production.[255] Hafer says, "You'd think that the Designer would try to give us humans, who were made in his image, the best deal that he could manage, wouldn't you? But he didn't."[256] Dembski does have a rebuttal to this argument from bad design, where he writes: "My own view is that it is much more shaky to speculate about what God would have done or what the world might in principle reveal than simply to go to the world and see what it actually does reveal".[257] Unfortunately, this is not sufficient to counter the damning evidence Hafer provides, because it barely constitutes more than simply sweeping the issue under the rug of the infamous 'mysterious ways' in which God is said to work. We shall see later in this chapter that such a methodology is not scientific as it bars the way to any further scientific investigation by appealing to the supernatural and/or the divine.

Behe's second example of an irreducibly complex system is that of a mousetrap. While a mousetrap is not a biological system, Behe argues that as a mousetrap cannot function properly if any of its parts are removed, a mousetrap is irreducibly complex, and it can be said that there exist similarly irreducibly complex biological systems, which therefore could not have arisen by evolutionary processes.[258] The issue with his use of a mousetrap, however, as noted by Michael Ruse, is that mousetraps need not be irreducibly complex –

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[255] Ibid, 13-14.
[256] Ibid, 13. To make such an explicit reference to Genesis 1:26 is an interesting choice for Hafer to make, as it highlights the issue in Intelligent Design discourse over whether the Movement is talking specifically about Christianity or if their Intelligent Designer is more religiously neutral. Behe and Dembski are careful to not speak of their Intelligent Designer as if it were the Christian God, but critics of the Movement are much more sceptical. Hafer goes on to say that "ID starts from an overtly conservative Christian viewpoint and seeks to promote this as science" (Hafer, *Not-So Intelligent Designer*, 26) which Brauer and Brumbaugh argue is necessary for them to do for political reasons (Brauer and Brumbaugh, "Biology Remystified," 290).
[257] Dembski, *Bridge*, 111.
[258] Behe, "Molecular Machines," 248.

indeed, they are not even necessarily complex, for a mousetrap can be made of a single part.[259]

Further on in his essay, 'Molecular Machines: Experimental Support for the Design Inference', and his later monograph *Darwin's Black Box*, Behe gives an organic example of an irreducibly complex system: cilia.

Behe explains that a cilium is a 'hair' on a cell which can move the cell like an oar when in a liquid or allow liquid to move over the cell; they are found in sperm and on cells involved in the human respiratory system. Cilia require three parts to function: microtubules, a motor, and linkers; without these, they would not be able to perform their function.[260] Behe uses this example to argue that the nature of cilia to cease proper function when just one of its proteins are removed indicates that cilia cannot be the product of evolution through natural selection, but rather were designed in their final form by an Intelligent Designer.[261]

Again, we see a flaw in Behe's argument. Behe claims that because the cilia, as it presently exists, could not function without one of its parts this indicates that it could not have formed through the process of natural selection. This, I would argue, does not follow. Dingley discussed Behe's irreducible complexity in his 2018 talk, 'A Blind Watchmaker? A Christian answer for the origin of the world' and argued that those individual parts without which a supposedly irreducibly complex system cannot function did not come into existence to contribute to the function of that system. It is far more likely that those parts performed a different function before they became a cog in that system's machine.[262] If we apply this to Behe's cilia example, we form the position that the parts that make up the cilia and allow it to function can (or could in the past) perform other functions when they are not in the cilia system, and it was these functions that they performed before they became part of the cilia. Such 'co-option' of other functions is widespread in evolving systems.

The same can be said for Behe's more famous example of the bacterial flagellum, which Dembski refers to as having become "the icon of intelligent

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[259] Dembski and Ruse, "Intelligent Design," 30.
[260] Behe, *Darwin's Black Box*, 59-66.
[261] Behe, "Molecular Machines," 249-250.
[262] Dingley, "Blind Watchmaker?"

design".[263] Behe compares the flagellum to the cilium, saying that "the bacterial flagellum acts as a rotary propeller – in contrast to the cilium, which acts more like an oar".[264] The bacterial flagellum, like the cilia, has three parts which make it irreducibly complex; in the case of the former, these parts are "a paddle, a rotor, and a motor".[265] Behe argues that because the bacterial flagellum cannot function without any one of these parts, and because the motor itself cannot function unless it comprises its fifty required proteins,[266] "Gradual evolution of the flagellum, like the cilium, therefore faces mammoth hurdles".[267] Yet just as Behe argues that the bacterial flagellum is irreducibly complex in much the same way that he argues the same of cilia, it is similarly vulnerable to the same argument as his cilia example.

The original examples Behe gives for irreducible complexity are, then, insufficient to support his argument. Yet even with supporting examples, there are still issues with the concept of irreducible complexity.

Brauer and Brumbaugh compare the systems of Behe's argument to that of a city, and in particular New York. They argue that New York evolved just as much as organic organisms such as cilia and bacterial flagellum did, and that the individual parts contribute to the running and working of the city in as much the same way as the microtubules, motors, and linkers do in cilia and as paddles, rotors, and motors do in bacterial flagellum. To that end, if you were to remove the sewer system from New York, the city would cease to function properly. Yet this does not mean that New York was placed on the land on which it currently stands complete with a sewer system; the individual parts of the city were added as they were needed: "The fact that the system now operates as a cohesive whole, dependent on all its parts, does nothing to refute the evolution of the system".[268]

Dembski here comes to Behe's aid, arguing that a city is an example of cumulative complexity rather than irreducible complexity: "It is possible successively to remove people and services from a city until one is down to a

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[263] Dembski and Ruse, "Intelligent Design," 16.
[264] Behe, *Darwin's Black Box*, 68.
[265] Ibid, 69.
[266] Dembski, *Bridge*, 148.
[267] Behe, *Darwin's Black Box*, 69.
[268] Brauer and Brumbaugh, "Biology Remystified," 314-315.

tiny village – all without losing the sense of community, which in this case constitutes its function".[269] This is to assume that the function of a city is this 'sense of community' (which, incidentally, Dembski does not define), and does not mention the infrastructure of a city which Brauer and Brumbaugh discuss in their refutation of Behe's argument. What's more, Dembski is equating complexity with size rather than the number of parts of a complex system: in his example, a tiny village (which would contain the amenities of a city such as a sewer system just on a smaller scale) is less complex than a city. There are no fewer parts, however, just a smaller size, and it does not follow that this would make a village less complex than a city.

Michael Behe and his irreducible complexity is but one facet of Intelligent Design theory. Another influential member of the Movement is William Dembski, who, although he seemingly agrees with Behe's argument from irreducible complexity, provides his own argument for Intelligent Design in the form of the Design Inference.

William Dembski and the Design Inference

William Dembski's Design Inference concerns explaining events considering their probability. Dembski's aim is to show that there are events which are so improbable without outside help that they must be the result of design and that one can infer the presence of design from such events.

In his book, *The Design Inference: Eliminating Chance Through Small Possibilities*, Dembski lays out the Design Inference and his support for it. One of the ways in which he does this is by what he calls the Explanatory Filter,[270] the argument of which he sums up thus:

> "Premise 1: E has occurred.
> Premise 2: E is specified.
> Premise 3: If E is due to chance, then E has small probability.
> Premise 4: Specified events of small probability do not occur by chance.
> Premise 5: E is not due to a regularity.
> Premise 6: E is due to either a regularity, chance, or design.
> Conclusion: E is due to design."[271]

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[269] Dembski, *Bridge*, 147.
[270] For Dembski's in-depth explanation of the Explanatory Filter, see Dembski, *The Design Inference*, 36-41.
[271] Ibid, 48.

The first question that arises considering this argument is that of the definition of 'specified'. Dembski does not give a definition of this term but does provide examples of specified events. One such example is that of ink being applied to paper: if it is applied by someone accidentally knocking over an ink well, then it is not specified; if it is applied by someone dipping a quill into the ink well and writing words onto the paper, then it is specified.[272] Yet this example is so vague as a definition of specificity that it is no easier to infer the meaning of 'specified' from it than it is to infer design from the specified probability of an event. Dembski gives a different example of a specified event in *Intelligent Design: The Bridge Between Science & Theology*. Rather than ink on paper, Dembski talks about Scrabble tiles. Natural causes can create the unspecified event of several Scrabble tiles falling onto a Scrabble board, but it is highly unlikely that those tiles will fall in such a way as to spell a word. Intelligent causes, on the other hand, can arrange the tiles in such a way as to spell an intended word. The former event is not specified, while the latter is specified.

Dembski goes on to write that he wishes to eliminate chance as an explanation for events with small probabilities.[273] Again, the reader is given an example which Dembski uses to support his point, this time of a statistician conducting an experiment to determine the effectiveness of a fertiliser on crop yield.[274] The statistician begins her experiment with the assumption that the fertiliser will have no effect, either favourable or unfavourable, on the crop yield, as without prior knowledge of the effectiveness of the fertiliser this is "the safest assumption to make".[275] After the experiment is conducted, the statistician does not eliminate the possibility that a result of the fertiliser increasing crop yield was not down to the fertiliser at all but down to chance.[276] Even after having conducted her experiment, Dembski argues, the statistician does not eliminate chance from their list of possible explanations for a given event. Dembski sees explaining any phenomenon with chance as insufficient in all cases and argues that not only is the possibility of offering such an explanation ruled out when one uses the Design Inference, but also that the possibility of offering such an

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[272] Ibid, 63.

[273] Ibid, 42.

[274] Dembski's description of this example can be found in: Ibid, 42-43.

[275] Ibid, 43.

[276] Ibid.

explanation cannot be ruled out when one uses the methodology applied by his analogical statistician.[277]

As with Behe's examples, Dembski's tale suffers in many ways. The first failing is in Dembski's diagnosis of what the statistician will assume prior to the conduct of her experiment, i.e. that the fertiliser will have no effect on the crop yield. I do not see how this would be the 'safest assumption to make', as conducting an experiment to see the effectiveness of a supposed fertiliser with no knowledge that it could work as a fertiliser would seem to be a waste of time and materials. Experiments are conducted with a hypothesis in mind that the experiment will serve to either prove or disprove.

Second, Dembski places the experiment within the field of statistics, which is rather odd. Statisticians do not often conduct experiments; they are the purview of scientists. Indeed, a reader who is given Dembski's example with all references to the protagonist being a statistician omitted could be forgiven for assuming that the protagonist is a scientist of some sort. While I cannot say for certain why Dembski has chosen to make his experimenter a statistician, I cannot help but be suspicious of his terminology.

Hafer holds that Dembski and other Intelligent Design theorists wish to replace science and scientific investigation with creationist Intelligent Design.[278] Intelligent Design is not itself science, but its advocates must disguise it as such so that it can be seen as a legitimate alternative to science.[279] The problem Intelligent Design theorists face in this pursuit, Hafer says, is that Intelligent Design is not science, because it is inherently untestable.[280] In light of Hafer's comments, the cynic in me is far more in favour of viewing Dembski's rebranding of the character in his example, who is obviously a scientist, as a statistician, so as to disguise the fact that he is creating an 'us and them' dichotomy where science is on one side and Intelligent Design is on the other, effectively admitting that Intelligent Design is not science.

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[277] Ibid, 42.
[278] Hafer, *Not-So Intelligent Designer*, 7, 29, 31, 32.
[279] Ibid, 26.
[280] Ibid, 64. To propose an inherently untestable hypothesis is to 'stop' science in its tracks. Hafer accuses Intelligent Design theorists as being 'science stoppers' Hafer, (*Not-So Intelligent Designer*,31-32). This idea shall be discussed later.

Furthermore, Hafer's analysis of Intelligent Design theory as unscientific because it is untestable gives us cause to compare Dembski (and Behe, to the extent that he, too, is guilty of being unscientific in this way) with the 10th Century Norwegians from the beginning of *Thor*. By choosing to believe that those beings which they knew were extra-terrestrial were their gods, the 10th Century Norwegians prevented the scientific method from being used to discern any other information about those beings. The divine is outside the realm of the methodology of experimental science, whereas extra-terrestrial life is not. Thus, it would be the case that the Asgardians could be studied using the scientific method (and, indeed, Dr Foster studies Thor using the scientific method during the film), but not if they were truly gods.

In much the same way, Dembski and Behe, in their denotation of phenomena such as the bacterial flagellum as the products of intelligent design, are preventing the scientific method from being used to discern any other information about them. They are taking such phenomena and placing them outside the realm of the methodology of experimental science by giving them a direct divine cause. Just as the 10th Century Norwegians were being unscientific by postulating the untestable claim that the Asgardians were divine, so too are the Intelligent Design theorists being unscientific by placing biological phenomena outside the realm of experimental science by postulating that they have one (sole) direct divine cause. The 10th Century Norwegians in the opening scene of *Thor* were as much 'science stoppers' as Hafer accuses the Intelligent Design theorists of being.

Lastly, and perhaps most damning as it dismisses Dembski's reason for including this example in the first place, scientific investigation does not allow the possibility of chance if it can help it.[281] Experiments are repeated to ensure that the results were due to the original hypothesis either being correct or incorrect. Science seeks answers as much as Dembski does and is just as unwilling to accept that any phenomenon can be explained only by chance. To say that those engaged in the scientific pursuit are content to give chance as an explanation for a phenomenon is to fall foul of Richard Dawkins' argument,

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[281] Hafer also raises a criticism against Dembski's very use of parables such as this, in that she argues that Dembski often spins tales designed to confuse the reader more than argue his point, in the hopes that a reader who cannot discern the point that Dembski is trying to make will be more inclined to agree out of sheer surrender (Hafer, *Not-So Intelligent Designer*, 169).

mentioned in Chapter 1, concerning the mysteries which some are content to leave unsolved but which science is not: the idea that there are currently areas of the unknown, "'But we're working on it".[282] A scientist would not be content to leave the matter at the stage in which Dembski's statistician does, but continue to work at the issue until they have achieved a satisfactorily conclusive result which does not hark back to chance.

Putting aside Dembski's crop yield analogy and returning to his Scrabble analogy, we can provide another argument against the Design Inference using Dawkins' METHINKS IT IS LIKE A WEASEL experiment, conducted in *The Blind Watchmaker*.[283] He begins with the famous story that an infinite number of monkeys given an infinite amount of time and an infinite number of typewriters should, statistically, eventually produce the entire works of Shakespeare. Dawkins scales the experiment down to seeing how long it would take a monkey to type a single phrase from *Hamlet*: 'Methinks it is like a weasel'. In the first iteration of the experiment, the monkey gets 28 random 'bashes' at a keyboard (the number of characters in the phrase) until he manages to generate the desired phrase. To save time, Dawkins designs a computer program to act on behalf of the monkey and found that the chances of the computer generating the phrase given these rules to be astronomically small. He then alters the computer program to instead take the first randomly-generated phrase and 'mutate' it: "The computer examines the mutant nonsense phrases, the 'progeny' of the original phrase, and chooses the one which, *however slightly*, most resembles the target phrase, METHINKS IT IS LIKE A WEASEL".[284] This system so increased the odds that on the first run of the program the target phrase was achieved in 43 generations. On successive runs, it never took more than 65 generations to produce the target phrase. Dawkins uses this program as an analogy for the process of evolution through natural selection, in that natural selection does not, as Ann Druyan put it, "start

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[282] Richard Dawkins, *Unweaving the Rainbow: Science, Delusion and the Appetite for Wonder* (London: Penguin, 1999), 17.

[283] Dawkins' explanation of his experiment can be found in Richard Dawkins, *The Blind Watchmaker* (Harlow: Longman Scientific & Technical, 1986), 46-50.

[284] Ibid, 47-48 (sic).

from scratch",[285] but works with what it already has and adapts based on that which is nearer to the short-term goal of survival.[286]

In Dembski's Scrabble analogy, the specified event is where Scrabble tiles on a board form an intended word. This, Dembski argues, could not have come about by chance but must be the result of the action of an intelligent agent. Similarly, the specified complexity of certain biological systems could not have arisen from chance but must have been the result of the action of an intelligent agent. Using Dawkins' experiment, however, we can see that even though it is unlikely that what Dembski would deem to be an unspecified event could produce something complex in the way Dembski understands complexity *on its first attempt to do so*, a sequence of events which build upon the previous events can indeed produce the intended complex result. We can therefore place the emergence of the complexity of certain biological systems neither in the realm of chance nor in the realm of design, but in the realm of regularity (to use Dembski's terminology). Natural selection does not start from scratch, and Dawkins' experiment shows how it can be explained through regularity. Thus, even though Dembski is probably correct in that there are not many ways in which to explain phenomena (though if it is indeed only the three that he gives is open to discussion), it does not follow that complex biological systems must be explained by design.

Just as Behe's irreducible complexity is fraught with issues, so too is Dembski's Design Inference. Yet the entire position of Intelligent Design falls foul of an even greater problem, that of the God of the Gaps.

Intelligent Design and the God of the Gaps

The God of the Gaps is a problem within philosophy of religion that has been discussed by many over a long period of time. The first description of a God of the Gaps argument was given by Henry Drummond:

> "There are reverent minds who ceaselessly scan the fields of Nature and the books of Science in search of gaps—gaps which they will fill up with God. As if God lived in gaps? What view of Nature or of Truth is theirs whose interest in Science is not in what it can explain but 'in what it

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[285] "Some of the Things that Molecules Do." *Cosmos: A Spacetime Odyssey*.
[286] Dawkins argues that evolution through natural selection has no long-term goals; rather, "In real life, the criterion for selection is always short-term, either simple survival or, more generally, reproductive success" (Dawkins, *Watchmaker*, 50).

cannot, whose quest is ignorance not knowledge, whose daily dread is that the cloud may lift, and who, as darkness melts from this field or from that, begin to tremble for the place of His abode?"[287]

A more famous description of the argument is that given by C.A. Coulson:

"a God who is obliged to conceal His actions of providence so that we cannot see Him, a God who hides His presence in Nature behind the law of large numbers, is a God for whom I have no use; He is a God who leaves Nature still unexplained, while He sneaks in through the loopholes".[288]

Such arguments inspire strong negative feelings in many thinkers. David Snoke, for instance, makes the bold claim that no matter what differences exist between any two thinkers, they will both agree that God of the Gaps arguments are not good arguments.[289]

The Traditional Refutation

Where Paley committed the God of the Gaps fallacy is in his comparison of the design of the watch to the 'design' of the universe. Where the universe needs to be explained as the work of a designer, Paley says, that designer must be God. He has identified the gap in human knowledge that is the unknown origin of the 'order' perceived within the universe and invokes the divine to fill that gap. Both Behe and Dembski can similarly be accused of committing the fallacy of the God of the Gaps.

Behe accuses science of being unable to sufficiently account for molecular life, saying that nothing has been published which describes the evolution of molecules into life.[290] He uses the same argument when discussing cilia.[291] Behe claims that such gaps in scientific knowledge are indicative of irreducibly complex systems being incompatible with the theory of Darwinian evolution and therefore subject to design. Such an argument is a classic example of God of the Gaps reasoning, where a gap is identified in human knowledge, in this case the evolution of molecules into life and of protein complexes into motile cilia,

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[287] Henry Drummond, *The Ascent of Man* (Cambridge: Cambridge University Press, [1894], 2009), 426-427.

[288] C A Coulson, *Science and Christian Belief* (London: Fontana Books, 1960), 34.

[289] David Snoke, "In Favor of God-of-the-Gaps Reasoning," *Perspectives on Science and Christian Faith* 53 (2001), accessed January 23, 2018, URL: http://www.asa3.org/ASA/PSCF/2001/PSCF9-01Snoke.html.

[290] Behe, *Darwin's Black Box*, 163. It should be noted that Behe is referring to those publications prior to 2006; it may be the case that a theory has been put forward on the evolution of molecules since.

[291] Ibid, 66.

and an appeal to the divine without evidence is invoked as an explanation for that which is as yet unknown.

In the *Thor* franchise, a man travels light years and through two separate atmospheres from one planet to another and survives the journey unscathed: such a phenomenon might be put down to magic or the supernatural, until it is described as an Einstein-Rosen Bridge and enters the realm of science, with the previous gap in knowledge filled. Such is the case with Behe's examples.

The traditional refutation of the God of the Gaps is that wherever a gap is identified in human knowledge and is filled with an appeal to God, the divine, or the supernatural, it has been shown in past experience that it is only a matter of time before human knowledge catches up with itself and fills in the gap. As Coulson says, any gaps in human knowledge "have the unpreventable habit of shrinking".[292] Indeed, it is the purpose of science to explain phenomena in the world around us, and to find explanations which do not involve an appeal to the supernatural.[293] Susskind says that although there are gaps in the theory of evolution such as those Behe describes, the scientific pursuit is to find natural fillers for those gaps.[294]

If this is indeed the case, then the gaps Behe has identified will only remain open for him to fill with appeals to Intelligent Design if the scientific pursuit is halted. Indeed, Hafer argues throughout her book that the cessation of science appears to be one of the agendas of the Intelligent Design Movement. She argues that Intelligent Design thinkers "want to squash science as a method of investigation",[295] that they wish to replace science rather than practise science themselves,[296] and that they wish to "defeat" science.[297] Such claims are certainly bold, but where areas exist within Intelligent Design that do not seem to be viable within the currently accepted model of the scientific method, one could forgive the suspicion that they wish to redefine that model so that those areas can be validated. Ultimately, Behe's appeals to gaps in human knowledge

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[292] Coulson, *Science*, 32.
[293] Again, we can hark back to Dawkins' phrase, "'But we're working on it" (Dawkins, *Unweaving the Rainbow*, 17).
[294] Leonard Susskind, "The Good Fight," in *Intelligent Thought: Science versus the Intelligent Design Movement*, ed. John Brockman (New York City, New York: Vintage Books, 2006), 30.
[295] Hafer, *Not-So Intelligent Designer*, 7.
[296] Ibid, 31.
[297] Ibid, 32.

will become more and more difficult to justify when the time comes that science fills them in and deems Behe's designed irreducible complexity nothing less than untrue.

It is tempting to say that the traditional refutation of the God of the Gaps has gone unchallenged, but this too is untrue. Several thinkers have offered counters, including Behe himself in anticipation of being accused of committing the God of the Gaps fallacy.

Behe says that scientists are often saying that they will fill in the gaps in human knowledge but gives the point that there is no real reason to believe that.[298] Indeed, as Larson says, the traditional refutation of God of the Gaps arguments is based on "an inflated view of what naturalistic science is likely to accomplish".[299] This is certainly an interesting counter-argument, and one worthy of consideration. In this sense, the God of the Gaps is turned on its head and becomes something more like the Science of the Gaps, where gaps in human knowledge are filled with hypothesised future human scientific discoveries without evidence to suggest that such discoveries will be made. We could look upon the magic used by the Asgardians and claim that because some of it has been explained as science far more advanced than anything that is found on Earth then all of it must be so explained, even if we lack the explanations for all of it at this point in time.

Thor's reaction to Doctor Strange's magic shows that not all the magic within the *MCU* can be explained as advanced science. Yet we have already seen that the gaps into which God is inserted are only truly safe if the scientific pursuit is stopped in its tracks, and this is unlikely to happen. Rather than the limits of the ability of science itself to fill in those gaps in human knowledge where it might seem rational to appeal to the divine or the supernatural, the limits lie in those doing the science. Science, emerging in its current form (by which I mean experimental science conducted using the scientific method) around 400 years ago, has consistently outlived all its practitioners and there is no reason to suppose that it will not continue to do so. While, then, it is unlikely that any given scientist will be able to fill in those gaps in human knowledge during their

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[298] Behe, *Darwin's Black Box*, 8.
[299] Ronald G Larson, "Revisiting the God of the Gaps." *Perspectives on Science and Christian Faith* 61, no. 1 (2009): 21.

own lifetime, their work can be passed on to successive generations of scientists and built on through the ages, so that eventually the discipline of science finds an explanation for the gap. Science, as a collaborative and cumulative pursuit of knowledge of the natural world, is unlikely to be stopped or redefined any time soon, and so I would argue that there is no reason to believe that it is not capable of eventually filling in those gaps that currently exist in knowledge of regular natural phenomena without appeal to the divine or the supernatural.[300] If such naturalistic explanations exist, then they are likely to be found through naturalistic science, and the gaps will be filled.

The Ultimate God of the Gaps

We have already seen Hafer accuse the Intelligent Design theorists of being 'science stoppers' by proposing premises which are inherently untestable. To shut down further investigation in this way is to ascribe it to magic or the supernatural, while a testable premise is within the realm of science and can be investigated using the scientific method. In much the same way as Asgardian science is confused as magic by Earthlings within the *MCU*, Intelligent Design theorists confuse gaps in scientific knowledge with evidence of Design, and go one step further, in that they create gaps for God within existing human knowledge. While still working within the frame of God of the Gaps reasoning, where gaps in human knowledge are filled with an appeal to the supernatural or the divine, the Intelligent Design theorists forsake looking for gaps to fill with the divine or the supernatural, and instead take human knowledge and tear new gaps in it which they then fill with explanations appealing to the divine.

Dembski says: "The "gaps" in the god-of-the-gaps objection to supernatural agency denote putative gaps in human knowledge (i.e., ignorance) about underlying physical causes. A supernatural agent, however, might act so that the resulting discontinuity in the chain of physical causes could never be removed by appealing to ordinary physical explanations".[301] With this argument, Dembski says that there are some areas of human knowledge which cannot be filled with science, and that the 'supernatural agent', or the Intelligent Designer, could have created the universe in such a way that some areas of that which it is possible to know cannot be known without appeal to the divine, even those

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[300] An exception may be found where the science itself declares the 'gap' unclosable, as with the precise moment of decay of a radioactive particle.
[301] Dembski, *End of Christianity*, 115.

areas which appear to be explainable using scientific means. In this, Dembski takes human knowledge and says that even those areas which are the purview of science are not truly the purview of science, and instead can be explained with appeals to the divine. One could say that Polkinghorne does a similar thing when discussing what he regards as 'uncloseable' gaps of chaotic dynamics, but Polkinghorne does not argue that such gaps can only be filled with an appeal to the divine; by describing such gaps as 'uncloseable', Polkinghorne removes any possibility to fill those gaps in with any kind of knowledge, whether that is knowledge obtained through the scientific method or by an appeal to the divine. Dembski, on the other hand, is specifically saying that these gaps can only be filled by appealing to the divine. In this way, Dembski is not filling in existing gaps with the divine but creating new gaps to be filled with the divine.

Behe, similarly, does this in his discussion of Dawkins' METHINKS IT IS LIKE A WEASEL experiment. Behe says that the purpose of the experiment is to show how complex systems could have evolved, but that "The analogy is offered in lieu of actual evidence that these or other complex systems could have evolved in a Darwinian fashion".[302] Dingley similarly pointed out the irony in Dawkins' use of a system of which he was the intelligent designer to refute Intelligent Design theory.[303] Behe's argument is contradictory, however, for he offers no evidence to suggest that a lack of Darwinian explanation entails that design is integral in creating the irreducibly complex system that is the phrase METHINKS IT IS LIKE A WEASEL. In this sense he creates the gap of a lack of evidence for Darwinian evolution and inserts Intelligent Design as the explanation, without giving any evidence as to why Intelligent Design should fill the gap other than that the gap exists.

When Dr Selvig finds a book on Norse mythology aimed at children in the local library and shows it to Dr Foster, he wants to make her understand that Thor is either mistaken or lying about who he really is: the Asgardians, as godlike beings, do not exist. Dr Foster's response is an appeal to Arthur C Clarke's Third Law, and in doing so asks Dr Selvig to take a leap of faith to believe that Thor is who he says he is and such beings could exist, if only an explanation

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[302] Behe, *Darwin's Black Box*, 194.
[303] Dingley, "Blind Watchmaker?"

could be found.[304] As we have already seen, the explanation given for the existence of the Asgardians and their supposed magic is advanced extra-terrestrial intelligence and technology. In the same way the Intelligent Design theorists ask their readers to take a leap of faith to believe that the Intelligent Designer does exist, if only an explanation can be found; and, as it can with the Asgardians' existence, the Intelligent Design theorists argue that the Intelligent Designer's existence can be explained with science.

Such arguments are constructed negatively, in that both Dembski and Behe are arguing that certain scientific processes, usually the theory of evolution through natural selection, are lacking something. It is into this lack that they insert the divine, their Intelligent Designer. By saying that scientific processes are lacking, they are creating a gap in human knowledge, and they argue that this gap is the place wherein their Intelligent Designer exists. In this way, they are not only guilty of the fallacy of the God of the Gaps, but they are committing the ultimate God of the Gaps argument, whereby they create gaps in human knowledge and insert the divine within those gaps that they themselves have created. Hafer argues that because the claims made by Intelligent Design theorists are inherently untestable, they cannot be arrived at through use of the scientific method but can only be accessed via "*a leap of faith*".[305] Hafer is arguing that one must take a leap of faith across a void of unscientific methods, which cannot be tested using scientific experiments, to the claims which the Intelligent Design theorists are making. I would argue that, rather, one must take a leap of faith into the gap which theorists such as Dembski and Behe make in human knowledge to accept the claims that they have placed within that gap.

Dembski and Behe may have anticipated that they would be rightly accused of the God of the Gaps fallacy and respond to such an accusation. They do not do so satisfactorily, however. Instead they use a different version of the God of the Gaps argument, whereby the gaps are created by them rather than ignorance and are then filled with their Intelligent Designer without any satisfactory evidence suggesting either why such gaps should be created nor why they should be filled with the Intelligent Designer.

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[304] *Thor.*
[305] Hafer, *Not-So Intelligent Designer*, 74.

Conclusion

Intelligent Design theorists such as Dembski and Behe would answer the question of the compatibility of science and Christian theology positively. Indeed, the thinkers we have discussed in this chapter believe that the actions of the divine can be found within the realm that atheistically is seen to belong solely to science. The problem lies, for these thinkers, not in an inherent mutual exclusivity between science and Christian theology but in the tyranny of Darwinism and naturalistic atheistic science which have and continue to systematically remove all theistic possibilities from the scientific pursuit.

Yet this does not mean that they have provided a satisfactory formulation of the relationship between science and Christian theology in the contemporary West. If we are to find a position where science and Christian theology are compatible with each other then we could turn to Intelligent Design theory, but only if we are willing to jettison one of the cornerstones of modern scientific endeavour in the process. Not only that, but Intelligent Design theory would ask us to forgo one of the most consistently sustained scientific theories in favour of a hypothesis for which no evidence nor an experiment to discover any evidence has ever been proposed by any of its adherents. As such, Intelligent Design theory mirrors Dawkins' New Atheism in another way: where Dawkins was unwittingly asking us to join a pseudo-religion while claiming that it was not a religion, the Intelligent Design theorists are asking us to believe in a pseudo-science while maintaining that it is a legitimate form of science.

We are left with a similar problem to the one Dawkins left us with. While Intelligent Design theory tells us that science and Christian theology can be compatible, in fact they are only telling us that pseudo-science and Christian theology can be compatible. If we wish to find a worldview which allows us to sit comfortably with both science and Christian theology, we shall need to find an accurate representation of science (which must follow the scientific method to be a satisfactorily accurate representation), and a satisfactorily accurate representation of Christian theology (which avoids becoming a pseudo-religion as was the case with Dawkins' New Atheism) which can be compatible with that representation of science. When discussing Type 3, the Type where science and Christian doctrine are treated with equal regard, Messer invokes the name

of John Polkinghorne as a prime example of this kind of Type. Could Polkinghorne be the solution to our problem?

Chapter 3 – John Polkinghorne, *Final Fantasy XV*, and the Ultimate Reality

Introduction

John Polkinghorne began his career as a physicist before becoming an Anglican priest.[306] Over the last thirty years, he has written many books exploring the relationship between science and Christian theology from his position as having trained in both physics and Christian theology. Wishing to keep both of these parts of his life together, Polkinghorne describes himself as a "scientist-theologian, seeking to combine the perspectives of science and Christianity in a stereoscopic world view".[307] Polkinghorne believes that it is possible to understand reality as containing both the truths of science and the truths of theology, neither in conflict with the other, and both working together to uncover the ultimate truths of the ultimate reality.

Due to this attempted synthesis of science and theology as equal parts of the exploration of a single ultimate reality, Messer placed Polkinghorne in Type 3: where science and Christian doctrine are considered equal with one another and neither one is forced to give way to the other.[308] Unlike Dawkins, Polkinghorne does not wish to jettison either science or theology. Unlike the Intelligent Design theorists, Polkinghorne does not wish to disguise either science or theology as the other. In Polkinghorne's view, science and Christian theology are distinct from each other and can perform different duties in the search for truth, but the findings of both are crucial for building our understanding of the reality in which we exist. Thus, reality becomes an ultimate reality – wherein both science and theology are required for true understanding.

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[306] John Polkinghorne, *Science and Creation: The Search for Understanding* (London: SPCK, 1988), xi.

[307] John Polkinghorne, *Exploring Reality: The Intertwining of Science and Religion* (London: SPCK, 2005), ix.

[308] Neil Messer, *Selfish Genes and Christian Ethics: Theological and Ethical Reflections on Evolutionary Biology* (London: SCM Press, 2007), 58-60. It should be noted that while Messer focuses on Polkinghorne when describing and discussing Type 3 on his spectrum, he says that only some of Polkinghorne's writings fit the third position, and that in many cases Polkinghorne is veering towards Type 4. Later in this chapter, I shall discuss Polkinghorne's theological views on nonhuman animals, and I believe it is here where he begins to veer towards Type 4 over Type 3.

As with Chapters 1 and 2, I shall be illustrating the position of the thinker with a case study from popular culture which portrays a relationship between magic and technology. In this chapter, my case study will be *Final Fantasy XV* (hereafter *FFXV*), a video game which features both magic and technology coexisting in the game world. The worldbuilding and lore of *FFXV* takes care to interweave technology and magic together, so that they can exist within the same world while not being at ontological odds with one another.

Polkinghorne's idea of the ultimate reality is preferable to the directions taken by either Dawkins or the Intelligent Design theorists. Yet it is far from perfect. In the second half of this chapter, I shall explore the failings of Polkinghorne's position, namely his treatment of nonhuman animals within his framework. I shall argue that such a position is not only limited but is also unnecessary and can be removed from the framework of the ultimate reality with the use of soul-language. Ultimately, I shall conclude that while Polkinghorne's position in the middle of Messer's spectrum is the lesser of five evils, it should not be adopted without some revisions.

Final Fantasy XV

FFXV was released in 2016 by Japanese games development company Square Enix. The game is the fifteenth main title in the perhaps now redundantly-named *Final Fantasy* series. Each game in the series follows different characters and different stories and each is set in a different world from its predecessors. Unlike the *MCU*, discussed in Chapter 2, each title in the series is narratively distinct.[309]

FFXV follows the tale of Noctis Lucis Caelum, prince of the kingdom of Lucis on the planet Eos. For the purposes of this thesis, the story of the game is not important. Rather, I wish to discuss the worldbuilding and lore of the game and of Eos.[310] Unlike many fantasies (such as the previously discussed *Elder Scrolls* series), *FFXV* features 'modern' technology. The four main characters spend a

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[309] Where characters and places from different titles meet, these meetings are usually considered non-canon (i.e. they are not considered as 'real' events which have happened to those characters or in those places). This being said, while all fifteen entries into the *Final Fantasy* series are narratively distinct from each other, *FFXV* itself has been made part of a sub-franchise called the *Final Fantasy XV Universe*, which consists of a multitude of multi-media entries which expand the story and the lore of the world in which *FFXV* is set.

[310] Throughout the chapter, I will refer to individual story events from the game and other entries in the *Universe*, but only where they enlighten aspects of the world and the lore.

large portion of the game driving around the kingdom of Lucis in a convertible, and in several cases the plot is advanced through the use of mobile telephones. Other advanced technology includes genetic engineering, airships, robotic humanoids, CDs, speedboats, electric lightning, power generators, elevators, lasers, and many more. In contrast to previous *Final Fantasy* titles, *FFXV* "is meant to be a "fantasy based on reality," thus its look is derived primarily from present-day Earth".[311] Were someone from our world to find themselves on the planet of Eos, they would not find its infrastructure and technology unrecognisable – that is, until they encountered magic.

There are two types of magic within the world of *FFXV*: elemental magic and arcana. The latter can only be used by Noctis as it is only possible via an artefact known as the Ring of the Lucii which is passed down through the Lucian royal line.[312] Elemental magic, however, also referred to as Elemancy, requires no special artefact for any of the characters to use it, nor is it exclusive to Noctis. Elemancy consists of the process of manufacturing elemental spells through the blending of elemental energies found in deposits around the game world. Elemental spells can be crafted by the player through the game menu, where they fill a magic flask. These magic flasks can be given to any of the four main characters to use as weapons and the flasks themselves are reusable.[313]

The treatment of the relationship between magic and technology in *FFXV* differs from the treatment of that same relationship in our previous case studies. Where the *Elder Scrolls* series maintains a pseudo-medieval aesthetic and advanced technology is hard to come by and almost impossible to craft since the disappearance of the Dwemer, technology is rife on Eos and is used alongside magic, though not all in Eos have the innate ability to use magic.[314] In

[311] Final Fantasy Wiki contributors, "Final Fantasy XV." In *Final Fantasy Wiki*. n.d. Accessed August 21, 2018. http://finalfantasy.wikia.com/wiki/Final_Fantasy_XV.

[312] The Ring of the Lucii can only be equipped by Noctis, and therefore the arcana magic which it affords can only be used by Noctis in the game (Final Fantasy Wiki contributors, "Ring of the Lucii." In *Final Fantasy Wiki*. n.d. Accessed September 21, 2018. http://finalfantasy.wikia.com/wiki/Ring_of_the_Lucii).

[313] Final Fantasy Wiki contributors, "Final Fantasy XV."

[314] A notable character in this regard is Crowe Altius, who appears in *Kingsglaive: Final Fantasy XV*. As a member of the Kingsglaive, Crowe is tasked with protecting the royal line and has been gifted the ability to use royal magic to aid her in this pursuit (*Final Fantasy XV: Kingsglaive*, directed by Takeshi Nozue. 2016. Budapest: Digic Pictures, Film). She is unique among the Kingsglaive, however, for her impressive natural talent with regards to wielding magic. She is described as "an exceptionally gifted wielder of magic". A non-canon entry into the *Final Fantasy* series, *Final Fantasy Brave Exvius*, describes Crowe thus: "*Although the Kingsglaive members borrow their magical power from the king himself, Crowe is especially*

battle, Noctis (the character usually controlled by the player) can switch between Elemancy spells, arcana, and the various types of weaponry available in the game, some of which would not be out of place in works of science-fiction.[315] Where in the *Thor* franchise, magic is simply science more advanced than that which is currently understood on Earth and therefore is capable of more advanced technology than we are able to produce on Earth (such as the Bifrost and the Soul Forge, which, at first appearing as magic, are eventually described through the language of science and technology once they are understood as such by the Earthling characters), magic in *FFXV* is entirely separate from technology. The technology of Eos was developed independently by the inhabitants of a world who already had the power to wield magic. In such a way, the magic and technology of Eos complement each other rather than exist in dichotomy with one another. They co-exist as equal parts of the reality of Eos and are not in conflict with one another.[316]

Polkinghorne and the Ultimate Reality

We have seen that Richard Dawkins believes there to be only one reality, and that reality can only be understood through scientific pursuits. We have also seen that the Intelligent Design theorists understand there to be one reality, but they believe that truths which are accessible by Christian theology alone are a part of that reality *in the same way* that truths accessible by science are. John Polkinghorne also believes that there is one reality, but he understands this reality to consist of both the truths of science and the truths of Christian theology existing side by side, distinct from each other but equally helpful in the

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adept in magic". Indeed, Crowe was "allowed to join the Kingsglaive when she showed skill with magic", showing that she had magical talent even before she was granted the ability to wield royal magic (Final Fantasy Wiki contributors, "Crowe Altius." In *Final Fantasy Wiki*. n.d. Accessed November 2, 2018. http://finalfantasy.wikia.com/wiki/Crowe_Altius) [sic] (the king referenced here is King Regis, Noctis' father).

[315] Weapons in *FFXV* are categorised; these categories include swords and great swords, but also firearms and machinery. In the latter, one can find impressive science-fiction weapons such as the Gravity Well, which has a special attack which "pulls foes in with a gravity sphere" (Final Fantasy Wiki contributors, "List of Final Fantasy XV weapons." In *Final Fantasy Wiki*. n.d. Accessed September 21, 2018.
http://finalfantasy.wikia.com/wiki/List_of_Final_Fantasy_XV_weapons).

[316] The main difference between magic and technology and science and theology is that the former are ways of doing things while the latter are ways of understanding things. Yet in many fantasies, and particularly in *FFXV*, the latter precedes the former. Just as technology is borne out of science, magic is borne out of theology and the supernatural. This is not to say that Christian theology is a form of magic, or even entails magic, but the relationships between the concepts remain. In *FFXV*, magic is bestowed upon mortals by the gods, as is described in the Cosmogony lore books.

pursuit of understanding that one reality. For Polkinghorne, it makes no sense to talk about those aspects of reality which are 'natural' and those which are 'supernatural'; rather, we must understand all aspects of reality as just that: nothing more and nothing less.[317] This is not to say that we will be able to understand reality in its entirety – "Our understanding of the physical world will never be total but it can become progressively more accurate"[318] – but such a reality does exist around us.

Polkinghorne argues that it is the quest of both science and theology to seek this ultimate reality. Science and theology, he writes, are not so different from each other – they are, in effect, two sides of the same coin, exploring ultimate reality in different ways but still contributing to our understanding of the same ultimate reality. It is because of this that the two pursuits should not be pitted against one another but should be engaging in "fruitful interaction with each other".[319] Science and Christian theology are only asking different questions about the same thing, and the answers to each of those questions will, together, broaden our understanding of that thing. As such, Polkinghorne cannot conceive of a conflict between science and Christian theology, because they are seeking different aspects of the same reality.

Imagine science and theology as two individuals. They are distinct from each other, existing as two different people. Both people are seeking answers to questions about the same thing. Let us say that these questions take the form of rats in a sewer, and the death of a rat signifies the answering of that question. In seeking the answers to their questions – the deaths of the rats – the person of science and the person of theology both come down to the sewer armed with guns. In Dawkins' understanding of this situation, the person of science would shoot all the rats dead while the person of theology attempts to kill some of the rats only to find that they (the person of theology) suffer from great inaccuracy in their firing. In the Intelligent Design theorists' understanding of this situation, the person of science would believe that they have shot dead several of the rats, only to realise that their gun was filled largely with blanks and that the rats were mainly killed by the person of theology. For Polkinghorne,

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[317] John Polkinghorne, *One World: The Interaction of Science and Theology* (London: SPCK, 1986), 78.
[318] Ibid, 17.
[319] John Polkinghorne, *The God of Hope and the End of the World* (London: SPCK, 2002), xix.

however, the person of science and the person of theology are standing back-to-back and shooting in semi-circles around them. Half of the rats are killed by the person of science and the other half are killed by the person of theology, and the answers to all their questions are obtained through their cooperation. This is because science and theology are, in Polkinghorne's view, asking different questions about reality.[320] Indeed, Polkinghorne believes that they are asking the two different kinds of questions that we have seen Dawkins write about – 'how' questions and 'why' questions. Science, Polkinghorne argues, is answering the 'how' questions, while theology is answering the 'why' questions.[321]

In *FFXV*, magic and technology have two different origins. Magic – both Elemancy and arcana – is derived from natural resources: Elemancy from natural elemental deposits around the game world, and arcana from the magical abilities gifted to the Lucian royal line by the gods. Technology, however, is created and developed by humans in much the same way that technology in our world has been developed. Magic has always existed on the planet of Eos, but technology had to be invented by the inhabitants of Eos. Yet they are both used as tools in the same way and can often be used for the same things: magic can be used for combat just as guns and lasers can, and magic can be used for healing as much as first aid kits can. Polkinghorne similarly argues that it is reasonable to pray for healing, though prayer is a more personal endeavour than medical science and so the results of such prayer must be dealt with on a case-by-case basis; they are also inherently anecdotal.[322] Science and theology are not opposing sides in Polkinghorne's understanding of the ultimate reality: they are just two different ways of achieving that goal.

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[320] This analogy is, of course, lacking in that it suggests that once an answer has been obtained for a question, the question is considered complete and never needs to be revisited. This is not the case, as answers to any question can be further nuanced and even prove to be wrong. Perhaps, then, for this analogy to more accurately depict the pursuit of knowledge and answers to questions on the ultimate reality, the answering of questions cannot stop at the initial shooting of the rats but continue through to the dissection of those rats and further studies of their anatomy. This analogy is simplistic, but for the purposes of describing the differences between the approaches of our three positions, I believe it is sufficient.

[321] John Polkinghorne, *Serious Talk: Science and Religion in Dialogue* (London: SCM Press, 1995), viii.

[322] John Polkinghorne, *Science and Providence: God's Interaction With the World* (West Conshohocken, Pennsylvania: Templeton Foundation Press, 2005), 85-86.

But perhaps the 'dichotomy' between 'how' and 'why' questions is not as binary as I have made it seem. Magic and technology do not need to be kept separate in the world of *FFXV*. Certain technological items, such as Reflex Enhancers and Magitek Boosters, can be added to elemental energies in the process of Elemancy to grant different and additional effects to otherwise purely elemental spells.[323] Weapons created by the humans of Eos can be empowered with magic: a notable example would be the Royal arms of the Lucian royal line, which Noctis is tasked with collecting throughout the game. These weapons originally belonged to former Lucian monarchs, and were buried with them when they died. Noctis, as the heir to the Lucian throne, can travel to the tombs of the former monarchs and absorb their Royal arms and wield them as magical weapons: "The weapons have a transcendental presence, as they can be wielded by more than one person at once, essentially being in more than one location simultaneously".[324] Polkinghorne says that the distinction between the two types of questions, 'how' questions and 'why' questions, is only helpful up to a point, because the answers to 'how' questions and the answers to 'why' questions eventually blur into one: "there is not a simple dichotomy between science and theology. They interact upon each other in various ways".[325] In this way, it is conceivable that the shootout in the sewer is more of a free-for-all, with both persons shooting whichever rat they see, rather than keeping to their personal semi-circle created by their standing back-to-back. It is perfectly possible to use Elemancy and technology entirely and exclusively separately

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[323] Final Fantasy Wiki contributors, "Elemancy." In *Final Fantasy Wiki*. n.d. Accessed September 21, 2018. http://finalfantasy.wikia.com/wiki/Elemancy; Final Fantasy Wiki contributors, "List of Final Fantasy XV items." In *Final Fantasy Wiki*. n.d. Accessed September 21, 2018. http://finalfantasy.wikia.com/wiki/List_of_Final_Fantasy_XV_items.

[324] Final Fantasy Wiki contributors, "Royal arms." In *Final Fantasy Wiki*. n.d. Accessed September 21, 2018. http://finalfantasy.wikia.com/wiki/Royal_arms_(Final_Fantasy_XV). The reference to more than one person being able to use the same Royal arms at the same time is likely a reference to the final battle of the game, where Noctis and Ardyn, the main antagonist of the game, each use their respective Armigers (collections of Royal weapons) against each other; both Noctis' and Ardyn's Armigers contain some of the same weapons, thus indicating that the weapons can be used by two different people at the same time (Final Fantasy Wiki contributors, "Royal arms").

[325] Polkinghorne, *One World*, 62. It is perhaps interesting to note that Peacocke, who is often associated with Polkinghorne, does not believe that the two types of questions can 'blur' together at all. He is adamant that science cannot provide answers to 'why' questions by any stretch of the imagination, and that it is not possible for science to provide explanations for phenomena in this way. (Arthur Peacocke, *Paths From Science Towards God: The End of All Our Exploring* [Oxford: Oneworld Publications, 2001], 39.) For Peacocke, the dichotomy between 'how' and 'why' questions remains very real. Messer recognises that there is less accuracy in equating the arguments of Polkinghorne and Peacocke to this degree, for he places Peacocke in a different Type on his spectrum (Type 2) than he does Polkinghorne (Messer, *Selfish Genes*, 54-58).

throughout an entire playthrough of *FFXV*, but this will mean ignoring the benefits gained through the interaction of both; similarly, it is perfectly possible to investigate the ultimate reality using only scientific methods or only theological methods, but it is not a necessity, and indeed you will gain a greater and better understanding of the ultimate reality if you pursue knowledge using both.

Hence, not only are science and theology asking different questions about ultimate reality and therefore are not in competition with each other but are working together, but Polkinghorne maintains that the two are required in equal measure to understand the ultimate reality. Both science and theology need to be studied side-by-side: they cannot do without each other.[326] If we return to the sewer, had either the person of science or the person of theology gone down to shoot rats alone, they would not have been successful in answering all their questions by shooting all the rats. Either they would have successfully killed half of the rats and then been overpowered by the other half, or – and perhaps Polkinghorne would consider this to be the worse of the two options – they would have successfully killed half of the rats while only injuring the other half, and left the sewer believing that they had the answers to all of their questions without realising that they only had the answers to half of them. Polkinghorne develops Einstein's claim that "'Religion without science is blind. Science without religion is lame'" to: "'Religion without science is confined; it fails to be completely open to reality. Science without religion is incomplete; it fails to attain the deepest possible understanding.'"[327] If only the person of science went down into the sewer, they would emerge having answered the 'how' questions but not the 'why' questions. If the person of theology went down into the sewer, they would have answered the 'why' questions but not the 'how' questions. This, for Polkinghorne, will simply not do, for a complete understanding of reality requires the answers to both the 'how' questions and the 'why' questions. We have seen this play out in historical debates, says Polkinghorne. He points to perhaps the two most famous science/religion debates – the Galileo and Darwin Affairs – and says that the outcomes in both cases were beneficial for both science and religion. In showing religion that it

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[326] John Polkinghorne, *Science and Christian Belief: Theological Reflections of a Bottom-Up Thinker* (London: SPCK, 1994), 44.
[327] Polkinghorne, *Science and Creation*, 97.

was wrong in the cases of the movement of celestial objects and the physical emergence of mankind, science freed theology to study those areas for which science itself is unqualified to explore, such as "the faithfulness of God which finds its pale reflection in the regular laws of nature; the sustaining power of God maintaining the world in existence and achieving his purposes through its development".[328] In much the same way as you could not describe the planet of Eos accurately without talking about both its technology and its magic, so too you cannot talk about our own reality accurately without speaking of both the truths of science and the truths of theology.

Polkinghorne describes his search for ultimate reality as "the ultimate search for a Grand Unified Theory – a GUT, as we say in physics". Yet rather than seeking just a unification of General Relativity and String Theory, the "theological quest" seeks the unification of the findings of science and theology.[329] Polkinghorne does not understand reality as a dichotomy: the truths of science and the truths of theology exist together, side-by-side, as equal parts of our understanding of the ultimate reality. Neither one is favoured over the other and both are equally important.

Just as *FFXV* differs from our previous two case studies, Polkinghorne's understanding of the normative relationship between science and Christian theology differs from those of both Dawkins and the Intelligent Design theorists. We have already seen that Messer has chosen to place Polkinghorne in his third and most 'middle-of-the-road' Types on his spectrum,[330] where I have argued that Dawkins and the Intelligent Design theorists occupy Types 1 and 4 (or 4.5) respectively. Where Dawkins wishes to completely rid society of religion and its influences, Polkinghorne embraces religion and theology – specifically Christian theology. Similarly, where the Intelligent Design theorists wish to promote religious and theological concepts as science, Polkinghorne wishes to retain a distinction between the two, albeit one where science and theology are intertwined in such a way that reality cannot be truly understood with only one of

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[328] Polkinghorne, *One World*, 62-63.

[329] Polkinghorne, *Serious Talk*, 3.

[330] Messer uses Polkinghorne as an example of Type 3 (Messer, *Selfish Genes*, 58-60). Yet in a recent article (Neil Messer, "Evolution and Theodicy: How (Not) to do Science and Theology," *Zygon: Journal of Religion and Science* 53 no. 3 [2018]), he points out that he does not wish to use his typology to describe individuals as far as is possible, but rather to describe types of views (824). He does not mention Polkinghorne in this article, but does mention both Dawkins and Dembski as being indicative of Types 1 and 5 respectively (824-825).

them. Unlike our previous two positions, Polkinghorne wishes to integrate both science and theology into our ability to understand the ultimate reality, rather than rid ourselves of one or disguise one as the other.

But what does it mean for science and theology to be so intertwined? How should we go about understanding reality as a place where science and theology can exist in harmony with each other, not only merely coexisting but actively working together to deepen our understanding of reality? Polkinghorne points to three areas of study to describe how this integration of science and theology might be understood: mathematics, quantum mechanics, and chaotic dynamics.

Polkinghorne uses the example of mathematics to argue for a multi-dimensional aspect of reality. He says that the truths of mathematics are considered to be "true discoveries, explorations of an already-existing reality".[331] This means that the truths of mathematics are like the infamous tree in the forest falling with no one around to hear but still making a sound: they would exist even if no one had discovered them.[332] Pythagoras' Theorem would still hold true even if no intelligent life emerged in the universe to discover that it is true. Because of this, only mathematics can afford its practitioners absolute certainty of their results.[333] Polkinghorne says: "If these convictions of the mathematicians are correct (as I believe them to be), then in addition to the physical world that the scientists investigate, there must be an everlasting noetic world of mathematical entities that the mathematicians investigate."[334] This takes on an even more Platonic symbolism, for now not only are the truths of mathematics akin to Platonic Forms, but the 'everlasting noetic world' is akin to the Platonic Intelligible World. This noetic world in which the truths of mathematics exist, Polkinghorne says, indicates that the ultimate reality does not consist of merely one dimension, but at least two, and if the ultimate reality can be divided into different dimensions, then there is no reason to disregard completely the possibility that "there might also be a destiny beyond the temporal ending of this

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[331] Polkinghorne, *God of Hope*, 20.
[332] Ibid. Such a description of mathematic truths runs the risk of turning them into Platonic Forms, a risk which Polkinghorne recognises (20-21).
[333] Polkinghorne, *Science and Creation*, 11.
[334] Polkinghorne, *God of Hope*, 20.

world", especially considering the mathematical dimension's noetic existence as an "[element] of reality beyond the flux of time".[335]

Mathematics, then, for Polkinghorne, is indicative of a separate dimension of the ultimate reality from the physical dimension which we inhabit. I am unsure whether we can take this noetic dimension to be a representation of some kind of heaven or paradise, as I do not think that this is what Polkinghorne wishes to suggest. I do, however, believe that we can infer the possibility of a heaven or paradise separate from both the physical world which we inhabit and the dimension of the ultimate reality which the truths of mathematics inhabit from the multi-dimensional character of the ultimate reality as Polkinghorne is describing it. Polkinghorne does not believe that God – and he is speaking of the Christian God – is that transcendent deistic god who does not involve Godself with God's Creation: God is not the 'man in the sky' watching over us but not interfering. Rather, God does interact with the world, but from the top down rather than the bottom up.

Polkinghorne argues that quantum mechanics has shown us that scientific truth is truly stranger than fiction.[336] In allowing us to discard an 'either/or' type of thinking when it comes to physical events, "Quantum theory delivers us from an undue tyranny of common sense".[337] Whereas before the introduction of quantum theory to the scientific canon, scientists could conceive of entities existing as either waves or as particles but never as both, the introduction of Dirac's quantum field theory allows scientists to "know that light and all other quantum entities … sometimes behave in a wavelike way and sometimes in a particlelike way … without a taint of paradox".[338]

Where quantum mechanics is beneficial for theology is in this ability to free us from the confines of 'common sense' and classical Aristotelian logic.[339] One of the contentions between science and Christian theology, as we have seen earlier in this thesis, is that science appears to 'make sense' where theology does not. Polkinghorne argues that quantum mechanics shows us that we do not need to be overly worried with what 'makes sense' in the same way that we

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[335] Ibid, 21.
[336] Polkinghorne, *Serious Talk*, vii.
[337] Ibid, 42.
[338] Ibid (sic).
[339] Polkinghorne, *Exploring Reality*, 90.

did when we were operating with classical logic. While theology will never be completely compatible with what people understand as common sense,[340] neither will quantum mechanics,[341] and if one accepts that quantum mechanics will forever defy 'common sense', so too must one accept that there are aspects of theology which will do so. Polkinghorne uses the example of the Resurrection as a Christian claim which goes against our understanding of what constitutes 'common sense' as one such aspect. It is inconsistent, for Polkinghorne, to accept the counter-intuitive claims of quantum mechanics while rejecting the counter-intuitive claims of Christian theology.

Mathematics and quantum mechanics are, for Polkinghorne, indicative of the existence of parts of our ultimate reality which do not correspond directly with our experience of our physical and 'logical' world. It is in these parts of the ultimate reality where we can find God. As I have said, I do not think that the 'dimension' of reality where Polkinghorne is housing the truths of mathematics is itself a kind of paradise in the same way that Plato's Intelligible World is, for Plato's Intelligible World is home to all of the Forms, including the Form of the Good, whereas Polkinghorne's mathematical dimension is home only to the truths of mathematics, but by postulating the existence of a dimension which is home to the truths of mathematics we can theorise the existence of a dimension of reality which is a heaven or a paradise as we will have shown that there is a multidimensional aspect to reality; if we can have two dimensions (the material and the noetic), why can we not have a paradisiacal dimension as well?[342]

In *FFXV*, the Astral Realm (wherein the gods reside) is a distinct plane of existence distinguished from the 'mortal' plane of existence. This kind of

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[340] Ibid, 55.

[341] Wolpert (Lewis Wolpert, *The Unnatural Nature of Science* [London: Faber and Faber, 1992]), interestingly, does not limit the incompatibility of scientific concepts with common sense to quantum mechanics, but argues that many scientific concepts do not accord with what we understand to be common sense. He says that while it is often argued that "science and common sense are closely linked" (1), this is not necessarily the case. Theories such as quantum mechanics and the Big Bang can sound magical to those lacking the relevant scientific training (7), and while common sense is "intuitive", many scientific concepts and principles are not (8). Children, he says, must be taught the scientific understanding of the world, because they inherently and naturally learn the 'common sense' understanding of the world, which differs from the scientific (13) and is usually an inaccurate depiction of the way the world works (15). For Wolpert, then, quantum mechanics are not the only scientific concept which seem to defy what we understand as common sense, and if this is the case, Polkinghorne's argument could perhaps be strengthened further.

[342] What this heaven or paradise might look like is far beyond the limits of this thesis. For the purposes of my argument, I shall focus not on the normative reality of such a heaven or paradise, but on the descriptive understanding of its theoretical existence.

distinction is what I mean when I refer to the existence of a divine dimension which exists as a separate ontological reality to the dimension in which we reside.[343]

If mathematics is the key to finding God's 'location', then chaotic dynamics are the key to discovering God's action within the world. Polkinghorne points to the "intrinsic openness" of chaotic dynamics,[344] wherein God's actions can be found. Murphy describes Polkinghorne's position as finding within chaos and complexity futures which are "truly "open," and hence … God can operate within them without contravening the laws of nature".[345] Bottom-up causation, such as finding God's action in quantum mechanics, is problematic for Polkinghorne:

> "There is particular difficulty in using quantum indeterminacy to describe divine action. Conventional quantum theory contains much continuity and determinism in addition to its well-known discontinuities and indeterminacies. The latter refer, not to all quantum behavior, but only to those particular events which qualify, by the irreversible registration of their effects in the macro-world, to be described as measurements. In between measurements, the continuous determinism of the Schrödinger equation applies. Occasions of measurement only occur from time to time and a God who acted through being their determinator would also only be acting from time to time."[346]

Polkinghorne's use of mathematics and chaotic dynamics in this way can be criticised. This understandably risks falling into a God of the Gaps argument of the type which we saw in Chapter 2. The 'open futures' which Polkinghorne argues can allow God to act without contravening the laws of nature sound uncomfortably like gaps in scientific knowledge within which God and God's action can be said to be found. These gaps may be uncloseable in Polkinghorne's view, and so immune to the traditional refutation of the God of the Gaps argument, but they are still gaps that science might theoretically close.

Overall, Polkinghorne's synthesis of science and theology into a cohesive whole in which the two cooperate to uncover the truths of the ultimate reality makes far

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[343] This is not to say that God is transcendent in this framework. I shall discuss this further when considering divine action.
[344] John Polkinghorne, "Metaphysics of Divine Action," in *Chaos and Complexity: Scientific Perspectives on Divine Action*, ed. Robert John Russell, Nancey Murphy, and Arthur Peacocke (Vatican City: Vatican Observatory, 1997), 151.
[345] Nancey Murphy, "Divine Action in the Natural Order," in *Chaos and Complexity: Scientific Perspectives on Divine Action*, ed. Robert John Russell, Nancey Murphy, and Arthur Peacocke (Vatican City: Vatican Observatory, 1997), 327.
[346] Polkinghorne, "Metaphysics of Divine Action," 152-153 (sic).

more sense than the approaches of either Dawkins or the Intelligent Design theorists. Dawkins' attempts to rid society of theistic religion by (admittedly inadvertently) creating his own pseudo-religion which demonises theology beyond its due are unsustainable, while the Intelligent Design theorists' attempts to turn aspects of theology into a form of science cannot work, for theological concepts cannot be subject to the scientific method in the same way as 'true' scientific concepts can and must.[347] Polkinghorne's 'middle-way' position, then, affords both science and theology equal place within our understanding of the world around us. Furthermore, the concept of an ultimate reality makes far more sense than separating science and theology in any way, such as in Gould's NOMA. If God exists, then all the theological consequences of God's existence also exist in the same reality as we do: the ultimate reality.

We have seen two aspects of Polkinghorne's ultimate reality so far: the inferred dimension of reality wherein God resides, and the actions of God which Polkinghorne problematically confines to chaotic dynamics. These are, however, not the only aspects of the ultimate reality which Polkinghorne explores. In the next section of this chapter, I shall discuss the theological position of nonhuman animals in Polkinghorne's understanding of the ultimate reality.

Polkinghorne and Non-human Animals

Polkinghorne's ultimate reality is strikingly anthropocentric. While acknowledging that biology does not find much difference between humans and nonhuman animals,[348] Polkinghorne believes that theologically there are differences between the two that cannot be ignored. One such difference is the ability to reflect on our own existence in such a way that allows biologists to consider the differences and similarities between humans and nonhuman animals. This reflective capacity, Polkinghorne convincingly says, must have a biological origin. While the biologists can find little difference between humans and nonhuman animals, then, Polkinghorne says that their very ability to find little difference is itself a significant difference with theological consequences.[349]

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[347] The method of investigation for science and theology are different from each other. Theology is not reducible to experimental science; if it were, we could talk about reality as nothing more than reality, and language of the ultimate reality would be redundant.
[348] Polkinghorne, *Exploring Reality*, 45.
[349] Ibid.

It is these cognitive differences which Polkinghorne seizes on as the location of the theological gulf between humans and nonhumans, particularly when it comes to the eschaton. Polkinghorne points to our ability to self-reflect as indication of our ability to be God-conscious,[350] which, if we follow the consequences of this line of argument, would deny God-consciousness to nonhuman animals on the basis that they are unable to self-reflect in the same way as humans can due to their inferior cognitive abilities.[351] Indeed, Polkinghorne says that humans seem to be the only created creature with God-consciousness,[352] and our acquisition of God-consciousness is directly linked to our acquisition of self-consciousness, which, Polkinghorne argues, no other created being has achieved.[353] Another difference Polkinghorne draws between humans and nonhuman animals is that of morality. Polkinghorne argues that only humans are truly capable of morality because only humans have the capacity for wilful and intentional sin.[354]

The reasons which Polkinghorne gives for the existence of a gulf between humanity and nonhuman animals is not, however, as relevant to this thesis as the reasons for his postulating such a gulf in the first place. Polkinghorne dedicates a considerable portion of his 2002 monograph *The God of Hope and the End of the World* to discussing the place of nonhuman animals in the eschaton. There are plenty of reasons, he argues, for believing that nonhuman animals will have a place in the eschaton. A Biblical reason can be found in the book of Job, wherein God concerns himself with nonhuman animals as well as with humans, and God explicitly reminds Job that God concerns Godself with things other than humanity.[355] There is also the issue of time: humanity's existence within the cosmos is little more than a blink of the astronomical eye:[356]

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[350] Polkinghorne, *God of Hope*, 45.

[351] The link between cognitive ability and God-consciousness is a much wider topic and Polkinghorne is not the only writer who assumes this, nor is he the only writer who follows through with the consequences of such a line of argument which seemingly deny God-consciousness to most if not all nonhuman animals. I hope to study this further, but it is far beyond the remit of this thesis.

[352] Polkinghorne, *God of Hope*, 44.

[353] Polkinghorne, *One World*, 69.

[354] Polkinghorne, *Exploring Reality*, 45.

[355] Polkinghorne, *Science and Creation*, 5.

[356] Polkinghorne, *Serious Talk*, 105.

> "Because the whole of the creation matters to God – this vast universe is not here just to be the backdrop for the human drama being played out on a speck of cosmic dust after an overture lasting fifteen billion years – it too must have an everlasting destiny within God's faithful purposes".[357]

As a result, Polkinghorne concedes that nonhuman animals cannot but have some form of eschatological hope but says that this hope looks radically different from the eschatological hope shared by all of humankind. Polkinghorne believes that each individual human will have their own individual eschatological hope, but the same will not be afforded to nonhuman animals. As such, Polkinghorne has individual eschatological hope, but the same cannot be said for any ants which he has stepped on throughout his lifetime. Rather, Polkinghorne believes in a type-eschaton for nonhuman animals: "It is conceivable that this eschatological dilemma can be resolved by according significance in non-human creatures more to the type than to the token". He illustrates this with the idea of lions: "Perhaps there will be lions in the world to come but not every lion that has ever lived". As such, the individual ants which Polkinghorne has crushed beneath his shoes throughout his lifetime will probably not appear as themselves in the eschaton, but the essence of antkind, representing all the ants who have ever lived, will. The issue gets less clear still when Polkinghorne considers pets. Polkinghorne is reluctant to deny pets a place in the eschaton and admits that it is possible that they will be afforded a place within it, though he is clearly unsure about this and deliberately uses conditional language when discussing the issue.[358]

I find this line of argument problematic and uncomfortable. From a logical point of view, it is inconsistent to say that not all nonhuman animals will have individual eschatological hope but that some individual pets might. The greater source of my discomfort, however, is theological. The consequence of this ideological framework is that God's care for the creatures in God's creation is itself anthropocentric. Polkinghorne's God does not care about individual nonhuman animals in the same way that God cares about individual humans *unless* that individual nonhuman animal has been cared about by a human. One of the side quests in *FFXV* is called 'Savior of the Species' and involves the

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[357] Ibid.

[358] Polkinghorne, *God of Hope*, 122-123. C.S. Lewis also distinguished between the theological position of wild and 'tame' animals. See: Andrew Linzey, "C.S. Lewis's Theology of Animals." *Anglican Theological Review* 80 no. 1 (1998): 60-81.

rescue of an orphaned Chocobo egg. Chocobos are ostrich-like creatures which are used within the world of *FFXV* in much the same way that horses are in the real world. The quest involves retrieving a Chocobo egg which has yet to hatch but whose mother has been killed by predators. Once the egg has been retrieved, the party takes it back to Wiz's Chocobo Post, a Chocobo ranch where domesticated Chocobos are raised, looked after, and hired out for transportation purposes.[359] In Polkinghorne's eschatological model, the rescued Chocobo chick can expect some eschatological hope, whereas its mother, a wild Chocobo killed in the wild by predators, could not. I see no reason to believe that God would care 'more' for the Chocobo chick because it was domesticated and looked after by a human than it would for its mother who happened to be a wild Chocobo. Perhaps an even murkier example from *FFXV* involves yet another Chocobo-related side quest given to Noctis by Wiz, the owner of the Chocobo ranch. In 'Where the Wild Chocobos Are', Noctis is tasked with seeking a wild Chocobo which Wiz has not seen for a while. While the Chocobo in question is indeed wild and is not under Wiz's care at the ranch, Wiz continues to care for its wellbeing and wishes for Noctis to provide proof that it is okay in the form of a photograph showing it alive and well.[360] This Chocobo is not domesticated but is still cared about by a human being. What, if any, eschatological hope could this Chocobo expect under Polkinghorne's framework?

Aside from concerns surrounding Polkinghorne's treatment of pets versus wild and undomesticated nonhuman animals, however, issues can also be raised against Polkinghorne's ideas of tokenness when it comes to eschatological representation. Polkinghorne believes that not every individual lion will be represented in the eschaton, but the 'essence of lionness' will. One problem with this is discerning the reasons for humans to have individual eschatological hope but nonhuman animals only enjoying type-eschatological hope. Polkinghorne might say that the issue lies in the differences between humans and nonhumans with regards to self-consciousness and God-consciousness, which in turn are related to cognitive ability. If we assume that the cognitive

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[359] "Savior of the Species." *IGN*. Accessed November 2, 2018. https://uk.ign.com/wikis/final-fantasy-15/Savior_of_the_Species.

[360] Final Fantasy XV Wiki contributors, "Where the Wild Chocobos Are." In *Final Fantasy XV Wiki*. n.d. Accessed November 2, 2018. https://finalfantasyxv.wiki.fextralife.com/Where+the+Wild+Chocobos+Are.

differences between humans and nonhuman animals are indeed instrumental in the difference between nonhuman animals and humans with regards to self-consciousness and God-consciousness, then we run into yet another problem, this time an evolutionary one. At what point in the evolutionary line of *Homo sapiens* does the cognitive ability of the species become sufficient for God-consciousness? Polkinghorne mentions that there is evidence of Neanderthal death rituals,[361] which would surely imply some form of self-consciousness. If self-consciousness is the key ingredient for the ability to develop God-consciousness (or, indeed, if they are one and the same), and God-consciousness is all that is required for individual representation in the eschaton, then why can we not believe that Neanderthals are not individually represented in the eschaton? Indeed, if we wish to cite God-consciousness as the means by which creatures are afforded individual places in the eschaton, we need look no further than Psalms 148 and 150:

> **7** Praise the Lord from the earth,
>   you sea monsters and all deeps,
> **8** fire and hail, snow and frost,
>   stormy wind fulfilling his command!
>
> **9** Mountains and all hills,
>   fruit trees and all cedars!
> **10** Wild animals and all cattle,
>   creeping things and flying birds![362]
>
> **6** Let everything that breathes praise the Lord!
> Praise the Lord![363]

Perhaps, even, we do not need to present Biblical images of nonhuman animals engaging in the same kinds of worship as humans do to present them as engaging in creaturely praise. Christopher Southgate writes:

> "The hyena pack that seize a newborn impala calf and tear it apart before extracting with great skill every last bit of nutrition from the bones is not in any conventional sense acting beautifully, but is acting characteristically, praising God in its action, manifesting its creatureliness in a way that is a sign of the work of its Creator. Even a more magnificent creature like an orca acts in a way most would call ugly when two orca toss a sea lion between them, apparently just for fun, before killing it. But that too is

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[361] Polkinghorne, *God of Hope*, 36.
[362] Psalm 148:7-10 [NRSV].
[363] Psalm 150:6 [NRSV].

characteristic action, orca being themselves, and so part of creaturely praise, part of the manifestation of *Gloria mundi*."[364]

Here, creatures are seen to be manifesting glory by doing nothing except being themselves. Acting according to one's nature, then, is a way of manifesting glory as it is a reflection of what God made those things to be.[365] Similarly, Edwards writes: "Theologically, every species is an expression of God in our world, a word of God spoken on our planet".[366]

Furthermore, there is reason to doubt that we need to believe that the cognitive differences between nonhuman animals and humans are instrumental in the differences between the two regarding God-consciousness. I find it a remarkable claim to make that nonhuman animals cannot be aware of their creator *in some way* simply because they lack the same sophisticated cognitive functions which humans have.

Polkinghorne's views on nonhuman animals are, then, not without issue. If one wishes to see all nonhuman animals individually represented in the eschaton, one cannot agree with Polkinghorne's view on the subject. If, then, we wish to maintain a cognitive distance between humans and nonhuman animals but retain the eschatological hope of nonhuman animals, we must seek the seat of that eschatological hope outside of God-consciousness born of self-consciousness. This, I believe, can be achieved through soul-language.

Soul-Language

Polkinghorne is a physicalist. He claims that "human beings look much more like animated bodies than like incarnated souls",[367] a point which he illustrates with the famous story of Phineas Gage and the railway spike.[368] He reasons that physicalism is superior to body/soul dualism in a Darwinian world, because in a dualistic, soul-based theory, one must identify the point in evolutionary time when humanity received its soul to distinguish it from nonhuman animals.[369] I

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[364] Christopher Southgate, *Theology in a Suffering World: Glory and Longing* (Cambridge: Cambridge University Press, 2018), 132.
[365] Ibid.
[366] Denis Edwards, *How God Acts: Creation, Redemption, and Special Divine Action* (Minneapolis, Minnesota: Fortress Press, 2010), 13. While Edwards is not intending here to promote a theory of creaturely praise, nonhuman animals which are regarded as expressions of God in the world are ever more compatible with the concept of creaturely praise, and so I have included this quote to further illustrate this point.
[367] Polkinghorne, *God of Hope*, 105.
[368] Ibid, 104-105.
[369] Ibid, 104.

have already given a similar argument with regards to the reliance of God-consciousness on cognitive ability, and here we see Polkinghorne use the same logic to defend a physicalist point of view in opposition to a dualist one. The issue, Polkinghorne maintains, is that Darwinian evolution of human beings requires the dualist to locate a temporal point at which human beings were ensouled: a difficult feat by which most people are not convinced.[370] This, to me, however, seems to only be a problem if one is determined to deny souls (or some equivalent) to nonhuman animals. If living creatures have souls from the beginning of their evolutionary journey, then it becomes unnecessary to locate a temporal point when humans were ensouled because they would already have had souls passed on to them through the evolutionary line. In this sense, the soul is less a religious or spiritual ontological reality and more the life essence itself – that which distinguishes animate beings from inanimate objects, rather than that which distinguishes humans from nonhuman animals.

If this is to be the case, then, what would being ensouled look like? The simple answer would be to say that being ensouled is being alive, but this would imply that there is no difference between a dead creature which was once alive and an inanimate object which was never alive. While physically we could make that claim – a dead body is no more animate than a stone – this has issues for eschatology and the next life. If a dead body is no more eschatologically relevant than a stone, how can we say that anything has eschatological hope? We could, of course, say that stones also have eschatological hope, but this is to ignore the real difference which exists between animate creatures and inanimate objects.[371]

One possible solution is to say that the soul 'survives' death, or that death is the 'removal' or 'loss' of the soul from the body. This is the answer a Cartesian dualist would provide and is one which theologians and philosophers alike have recently tended to reject. Ray S Anderson notes that "Contemporary theologians have become uncomfortable with the concept of an abstract

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[370] Ibid.

[371] This real difference necessarily concerns issues with the ultimate origin of life and therefore runs into the difficulties of pinpointing both a temporal moment and a scientifically measurable ontological reality where life begins to exist where it did not before. Studies of the ultimate origin of life are yet to deliver an answer to these questions and so it is difficult to reflect on them theologically in dialogue with science. Issues of the ultimate origin of life are tangential to this thesis and I lack the space in this study to discuss them in further detail.

body/soul dualism that has its modern roots in the thought of René Descartes".[372] Polkinghorne, too, wishes to avoid such a conclusion, denying Cartesian embodiment.[373] To do this, he opts for a more Hebraic holistic embodiment, such that resurrection into the next life involves the "reconstitution of the whole man in some other environment of God's choosing".[374] I am inclined to agree with Polkinghorne on this point, but I am reluctant to deny this Hebraic holistic embodiment to nonhuman animals.

We have already seen Polkinghorne argue that humans appear much more like animated bodies than embodied souls. Such a statement shifts the locus of identity from the soul to the body: we are not our souls, we are our bodies. I would say that we are necessarily both: we are the amalgamation of our souls and our bodies into one. If we lost either one of them, we would cease to be ourselves.[375] In the penultimate Chapter of *FFXV*, Noctis is tasked with acquiring the power necessary to defeat the immortal Ardyn. To do this, he must ruminate with the gods in the Astral Realm, absorbing divine power until he has enough to face and defeat Ardyn. Noctis accesses the Astral Realm via the Crystal, a gift from the gods to the Lucian royal line wherein Bahamut, one of the gods, resides. Noctis touches the Crystal and is sucked inside it, completely disappearing inside it and emerging in the Astral Realm. It is not enough for Noctis' soul or mind to be transferred through the Crystal into the Astral Realm – he must be entirely absorbed by the Crystal to make the journey and retain himself. Eschatological hope, then, lies in the reconstitution of the entire whole – body and soul – of the creature in question, as Polkinghorne says. Joel Green notes that this amalgamation of body and soul is the accepted reading of the Hebrew Bible: "there is a general agreement that, in the Hebrew

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[372] Ray S Anderson, "On Being Human: The Spiritual Saga of a Creaturely Soul," in *Whatever Happened to the Soul? Scientific and Theological Portraits of Human Nature*, eds. Warren S Brown, Nancey Murphy and, H Newton Malony (Minneapolis, Minnesota: Fortress Press, 1998), 176. Peters is particularly adamant in denying any links between Christian teaching and Cartesian dualism (Ted Peters, "Resurrection of the Very Embodied Soul?" in *Neuroscience and the Person: Scientific Perspectives on Divine Action*, eds. Robert John Russel et. al [Vatican City: Vatican Observatory, 1999], 305-326). Not only does he outright say that to argue that Christianity entails Cartesian dualism is wrong (305), but argues that Descartes' being wrong does not mean that Christianity is wrong, because Christianity does not depend on Cartesian dualism; he also comments that Christianity does not depend on Platonic dualism either (312).
[373] Polkinghorne, *Science and Providence*, 25.
[374] Polkinghorne, *One World*, 76.
[375] The issue of whether it is indeed possible to lose one or the other is another matter entirely, and one for which I do not have the space in this thesis.

Bible, human beings are depicted as body and soul – that is, humans do not possess a body and soul, but are human only as body and soul".[376] At this point, however, we run into the problem of chain consumption.

Peters explains the issue of chain consumption in his essay, 'Resurrection of the Very Embodied Soul?' The issue is directly related to a reductive point of view where each individual atom and molecule is considered: which atoms can we say belong to us when they have belonged to and contributed to the makeup of countless living creatures before us and undoubtedly will for countless creatures after us? Much like the question of to which brother the wife belongs, to which living creature does an atom belong at the eschaton?[377] Peters convincingly concludes that the issue should be solved through re-creation rather than resurrection: the eschaton does not involve individuals being resurrected as they are, but being re-created, such that resurrection encompasses the whole of a being or person, including within it the holistic whole of body-and-soul.[378] At the very end of the game, Noctis returns to the Astral Realm with Ardyn, having defeated him in the mortal plane, to deal the final death blow. For both Ardyn and Noctis to arrive in the Astral Realm for this final showdown, both need to die – Ardyn by Noctis' hand, and Noctis by the previous monarchs of Lucis who exist in the Astral Realm through the Power of Kings. In much the same way as Christian traditions have often taught that death allows an individual to pass through to a paradisaical afterlife, so too must Noctis and Ardyn die before they can meet in the Astral Realm. Their bodies are destroyed and a part of them can travel to the Astral Realm. There seem to be two ways of travelling to the Astral Realm, then: one is to fully transport there, body included; the other is to die. The only way to remain alive throughout a journey to the Astral Realm is for both body and soul joined to make the journey. In such a way, I would argue that we can see a more holistic version of embodiment portrayed in *FFXV*, and it is this version of embodiment which I believe can offer a convincing solution to some of the problems raised by Polkinghorne's line of argument, particularly considering nonhuman animals.

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[376] Joel B Green, ""Bodies – That Is, Human Lives": A Re-Examination of Human Nature in the Bible," in *Whatever Happened to the Soul? Scientific and Theological Portraits of Human Nature*, eds. Warren S Brown, Nancey Murphy, and H Newton Malony (Minneapolis, Minnesota: Fortress Press, 1998), 184.
[377] Peters, "Resurrection," 316.
[378] Ibid, 326.

When all living creatures are seen as holistic wholes, including the physical and the soulful in the continuation of their identities, there is no barrier to the eschaton for nonhuman animals. What is more, there is no need to pinpoint a temporal ensoulment of *Homo sapiens* to distinguish their ensoulment from the soullessness of nonhuman animals, because nonhuman animals are not soulless. If, then, we wish to include nonhuman animals in a Polkinghornean eschatology, I believe viewing all living creatures as holistic wholes, both physical and soulful ontological realities, allows for the individual eschatological hope of nonhuman as well as human animals.[379]

If we assume that living creatures are holistic wholes of physical and soulful ontologies, we must ask ourselves what the difference between the two of these ontologies is, and indeed 'where' we might locate that part of ourselves which is not the physical as opposed to the soulful within ourselves. Where is the soul? Indeed, what is the soul?

Such questions are undoubtedly massive, and I do not have the space to give a satisfactory answer considering all the relevant minutiae here. Instead, I shall discuss why the soul should be thought of as separate from the mind and from the body.

The quick answer to this question is that the soul is what differentiates between that which is alive and that which is not. A stone does not possess a soul because it is not alive, and a cat does possess a soul because it is alive. Similarly, a stone is not alive because it does not possess a soul. Does that mean that a dead cat does not possess a soul? I would argue that a dead cat is no longer a cat, at least not in the same way as it was when it was alive. To die is to lose something of one's identity; one cannot retain their continuity of self if they lose their soul, but neither can they do so if they lose their body. There is no intelligibility behind the idea of a soul 'leaving' the body and the self-contained within and constituting that body-and-soul continuing as its-self. Therefore Noctis' body must enter the Astral Realm if he is to make the journey while still alive; when he enters the Astral Realm as a dead man, he has lost

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[379] A logical question to ask at this point is how plants would fit into such a framework, if they would at all. That is far beyond the limits of this thesis, and I shall be focusing on nonhuman animals rather than plantlife or fungi. Thus, when I use the word 'creatures', I am referring to the animal kingdom and all its inhabitants (including humans) and am entirely excluding the plant kingdom.

himself. As such, recreation rather than resurrection is imperative for us to retain our selves in the eschaton; we cannot lose our body and go to paradise as souls, because those souls alone would not keep their identity – they would not be *us.* Neither can we lose our souls and merely have our bodies enter paradise for the same reason. The holistic whole needs to go to paradise, and as such that holistic whole needs to be recreated after it was lost in death. This is different from the mind; the soul as life-force is separate from the mind as cognitive ability. Both exist within the body but are not reducible to the physical. Thus, one should not equate soul and mind any more than one should equate soul and body or mind and body.

We could, at this point, adopt the position of non-reductive physicalism (hereafter NRP), a popular position held by philosophers and theologians alike when considering these kinds of problems. A particularly prominent non-reductive physicalist is the philosopher Nancey Murphy, who describes the position thus:

> "Applied to the specific area of studies of consciousness, it [NRP] denies the existence of a nonmaterial entity, the mind (or soul) but does not deny the existence of consciousness … or the significance of conscious states or other ment*al* … phenomena. In brief, this is the view that the human nervous system, operating in concert with the rest of the body in its environment, is the seat of consciousness (and also of human spiritual or religious capacities)."[380]

Such a position allows us to assume that the human person is an undivided whole; there are no divisions between mind and body, mind and soul, soul and body, or mind and soul: all is one entity which it itself the seat of identity. While mental activities and consciousness are grounded in physicality, NRP seeks to escape the 'nothing buttery' of material reductionism, such as that espoused by Francis Crick of DNA fame.[381] The key difference between NRP and the

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[380] Nancey Murphy, "Supervenience and the Downward Efficacy of the Mental: A Nonreductive Physicalist Account of Human Action," in *Neuroscience and the Person: Scientific Perspectives on Divine Action*, eds. Robert John Russell et. al (Vatican City: Vatican Observatory, 1998), 130-131 (sic).

[381] Nancey Murphy, "Human Nature: Historical, Scientific, and Religious Issues," in *Whatever Happened to the Soul? Scientific and Theological Portraits of Human Nature*, eds. Warren S Brown, Nancey Murphy, and H Newton Malony (Minneapolis, Minnesota: Fortress Press, 1998), 2. Crick's material reductionism is explored in: Malcom Jeeves, "Brain, Mind, and Behavior," in *Whatever Happened to the Soul? Scientific and Theological Portraits of Human Nature*, eds. Warren S Brown, Nancey Murphy, and H Newton Malony (Minneapolis, Minnesota: Fortress Press, 1998), 74; and Peters, "Resurrection," 307-308. Murphy gives the following definition of the beliefs of material reductionism: "the person is a physical organism, whose emotional,

position I wish to put forward is mentioned in the Murphy quote above: "it [NRP] denies the existence of a nonmaterial entity, the mind (or soul)". While consciousness cannot be reduced absolutely to the physical, non-reductive physicalists do not believe that there is a nonmaterial element to consciousness. To explain how such a thing is possible, they evoke the concept of supervenience. Murphy, for instance, says: "Although all human behavior supervenes on the biological (genetic and neurobiological), little of it is reducible to biology".[382] She expands on what she means by supervenience in this context in the following footnote: "I suggest that the better way to make this point is to say that every mental event is *realized* by some physical event, not identical to it".[383]

We could say that it makes more sense to say that there is something other than the physical which acts as a 'life force' – a distinguisher between the animate and the inanimate. Paul Churchland points out that for many, such a 'common sense' argument was by far the most palatable.[384] Yet, as we have already seen, we do not have to adhere to common sense: Polkinghorne illustrated this with the counter-intuitiveness of quantum mechanics. Furthermore, Murphy points out that there is plenty of scientific evidence for NRP,[385] namely within evolutionary biology and genetics.[386] Why, then, should we still believe in a soul? What is the concept of the soul bringing to the table that NRP cannot?

For Susan Schneider, the problem lies in NRP's supposed inability to sufficiently explain minds. Schneider claims that NRP suffers from a 'mind problem', because the properties non-reductive physicalists apply to the mind imply that the mind cannot be a physical thing. She writes, "the mere commitment to property irreducibility threatens to lead to substance dualism", while the absence of a physicalist answer to the mind problem jeopardises NRP

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moral, and religious experiences will all ultimately be explained by the physical sciences" (Murphy, "Human Nature," 24-25).

[382] Nancey Murphy, "Physicalism Without Reductionism: Toward A Scientifically, Philosophically, and Theologically Sound Portrait of Human Nature," *Zygon: Journal of Religion and Science* 34 no. 4 (1999): 561.

[383] Murphy, "Human Nature,"11.

[384] Paul M Churchland, *The Engine of Reason, the Seat of the Soul: A Philosophical Journey into the Brain* (Cambridge, Massachusetts: MIT Press, 1995), 189-190.

[385] Murphy, "Supervenience," 128.

[386] Murphy, "Human Nature," 1.

as a physicalist position.[387] Where the non-reductive physicalist might, here, point to supervenience to explain the mind, Schneider notes that "supervenience is generally agreed to be too weak for physicalism",[388] and so the problem of NRP as a truly physicalist position remains. Schneider concludes that the 'mind problem' damages NRP as a physicalist position, and if it cannot find a satisfactory answer to the problem, NRP is risking losing itself to substance dualism.[389] I would be inclined to agree with Schneider that these issues are damaging to NRP as a physicalist position. The mind cannot be both physical (in the sense that mental properties and events are directly related to physical properties and events) and nonphysical (in such a way that it supervenes on the physical and so must be in some way separate from the physical).

In response to these issues, I would be inclined to accept NRP with revisions: rather than allowing the mind to be of two substances at once (both physical and nonphysical), I would separate the mind and the soul so that the mind can perform those functions which are physical (thus, the mind is expressed in mental properties and events which are identical to the physical properties and events extant in the brain) and the soul those which are not physical (thus, the soul is the life force, having no bearing on mental or cognitive activity but existing as the differing substance between that which is alive and that which is no longer or never has been). The issue lies in identity. NRP cannot give us a seat of identity in the same way that soul-language can. If we find our identities – and the continuation of those identities beyond this life – in a holistic whole of mind/body/soul, we can distinguish between that which is alive and that which is not, that which is us and that which is not, and include nonhuman animals in our eschatology. In this way, we can embrace Polkinghorne's ultimate reality while leaving behind his speciesism.[390]

Conclusion

Polkinghorne's understanding of an ultimate reality is far more palatable than Dawkins' rejection of all things supernatural to the point of following a pseudo-

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[387] Susan Schneider, "Non-Reductive Physicalism and the Mind Problem," *Noûs* 47 no. 1 (2012): 135-136; 150.
[388] Ibid, 143.
[389] Ibid, 150.
[390] Polkinghorne admits to being speciesist in: Polkinghorne, *Exploring Reality*, 45.

religion or the Intelligent Design theorists' rebranding of religious ideas as science. The ultimate reality allows for both the truths of science and the truths of the theological consequences of the existence of God to exist within the same reality, without conflicting with one another. Where Polkinghorne fails is in his treatment of nonhuman animals in denying individual nonhuman animals a place in the eschaton. This, I believe, is too narrowly anthropocentric. The issue can, however, be resolved if one jettisons Polkinghorne's reluctance to understand nonhuman animals as souled creatures, and to understand ensoulment as being a holistic whole of soul and body, with the mind as cognitive ability.[391]

Throughout the three main chapters of this thesis, I have discussed three different thinkers who can be positioned at different points on Messer's typology. Dawkins is firmly in Type 1; the Intelligent Design theorists are in Type 4.5; and Polkinghorne is firmly in Type 3. Do any of these thinkers/schools of thought offer us a satisfactory formulation of the relationship between science and Christian theology in the contemporary West, or should we look elsewhere for a solution to our problem?

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[391] Perhaps at this stage we could raise the question of whether nonhuman animals have minds and what those minds might 'look' like in comparison with human minds, but that is far beyond what I have room to discuss in this thesis.

Conclusion

In 2007 Neil Messer provided a typology of the possible positions on the relationship between science and Christian theology. His typology included five Types, ranging from those who disregard Christian theology for the sake of science to those who disregard science for the sake of Christian theology. In between these two Types, we see three more, where science is taken as more important than Christian theology but Christian theology is not disregarded out of hand, where the opposite is true, and where both Christian theology and science are taken in equal regard. In 2018, Messer commented on his typology saying that although it was still relevant, he was reluctant to place any individual into these Types which he identified back in 2007. Rather, he writes, he is describing views and positions on a wider scale than ascribing these Types to individuals.[392]

In this thesis, I have taken a different tactic. In my discussion of Messer's Types, I have placed individual thinkers/schools of thought into three of the five. I have focused on alternate Types on the typology: Type 1 (where Christian theology is disregarded in favour of science), Type 5 (where science is disregarded in favour of Christian theology), and Type 3 (where both are taken in equal regard). Though, in all fairness, I have not spoken about Type 5 specifically but what I have called Type 4.5, where Christian theology is seen as much more important than science, yet science itself is not entirely discarded.

In my discussion of Type 1, I used Richard Dawkins and his New Atheism as a depiction of the view that Christian theology should be disregarded in favour of science. Dawkins argues that science can tell us all we need to know about the world and that the poetic wonder of science means that it can afford us a kind of transcendence similar to that which is available to us through religion. Dawkins prefers this scientistic option as he believes that religion is dangerous for, and should be removed from, society. I illustrated Dawkins' position with the Dwemer society from the video game series, *The Elder Scrolls*. The Dwemer society disregarded the gods of that universe and instead placed all their faith in logic, science, and technology. They sought self-transcendence through these

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[392] Neil Messer, "Evolution and Theodicy: How (Not) to do Science and Theology." In *Zygon: Journal of Religion and Science* 53 no. 3 (2018): 824.

means, and went as far as constructing their own god, the Numidium, in order to achieve this goal. I argued that Dawkins, in constructing his version of New Atheism, had himself constructed his own Numidium. Where the Dwemers' Numidium was powered by the Heart of Lorkhan, a divine artefact, Dawkins' 'Numidium' is powered by what he describes as the poetic wonder of science. In this way, Dawkins has turned his version of New Atheism into a form of pseudo-religion and scientism. Furthermore, I argued that just as the Dwemer could not realise their ambitions of self-transcendence without some aspect of the divine (the divine artefact the Heart of Lorkhan), neither can Dawkins escape inadvertently turning his version of New Atheism into a pseudo-religion using some aspect of the divine (the poetic wonder of science).

Having found Type 1 unsatisfactory, I moved on to discuss Type 4.5, identifying the Intelligent Design Movement as typifying this Type. Where Intelligent Design theorists mostly disregard science in favour of theology, they do not do so entirely. Rather, they attempt to commandeer science for their own evangelistic purposes, claiming that certain areas of science, particularly within evolutionary biology, are in fact theological rather than scientific questions. Science is still relatively important for the Intelligent Design theorists, but it can be used to indicate the divine and the work of the divine in evolutionary history.

I discussed two prominent Intelligent Design theorists, Michael Behe and William Dembski, and their individual contributions to the Movement. I explained that Intelligent Design theorists attempt to 'prove' that certain areas of the biological world could not have been brought forth through the process of Darwinian evolution and that consequently they must have been the specific work of a designer. While it is not a necessity that the Intelligent Design Movement ground this intelligent designer within any religious tradition, the Intelligent Design theorists I have discussed (and indeed many of the Intelligent Design theorists I have not discussed) identify this intelligent designer as the Christian God. In my discussion of the relationship between science and Christian theology as understood by Behe and Dembski, I illustrated a major critique of their views with an analogy from the *Thor* franchise within the *Marvel Cinematic Universe*.

Within the *Thor* franchise, that which is understood by the human characters to be magic is eventually revealed to be advanced science and technology of the

kind that is possible but not yet actual on Earth. One character, Dr Foster, describes this using Arthur C Clarke's Third Law. Furthermore, the beings which were described by 10th Century Norwegians as gods (Thor, Odin, etc.) are revealed to be nothing more than advanced intelligent aliens. Shermer describes this phenomenon, similar but not identical to Clarke's Third Law, as Shermer's Last Law, where intelligent aliens become indistinguishable from the divine. Shermer's Last Law is not itself uncriticised, but the analogy is logical. The primary problem which Clarke's Third Law and Shermer's Last Law presents to Christian theology is that it accuses Christian theology of committing the God of the Gaps – where God is inserted into those gaps in scientific knowledge which will inevitably be filled in as science progresses, thus squeezing God out of the picture until God is no longer needed to explain anything. I used the analogy of the *Thor* franchise to accuse the Intelligent Design theorists, and specifically Behe and Dembski, of the God of the Gaps. I went on to argue that the Intelligent Design Movement is not just guilty of committing the God of the Gaps, but that they go one step further, committing what I termed the ultimate God of the Gaps. In 'traditional' God of the Gaps arguments, a gap in scientific knowledge is identified and God is inserted into the gap as an explanation for the phenomenon which is yet to be understood scientifically. In an ultimate God of the Gaps argument, of which I argued the Intelligent Design theorists are guilty, a gap is created in existing scientific knowledge and God is inserted into that gap as an explanation for the relevant phenomenon.

In the case of Behe's irreducible complexity, Behe creates a gap in the explanation of the emergence of certain biological phenomena such as the bacterial flagellum. Where the emergence of these phenomena can be explained using Darwinian evolution, Behe claims that they cannot, and in doing so creates a gap where one does not exist. Behe's solution to this gap which he has created is to place God inside it: the bacterial flagellum must have been the product of the work of an intelligent designer, which, as we have seen, Behe identifies with the Christian God. Similarly, Dembski offers his Design Inference to the Intelligent Design Movement, whereby we can infer design from the improbable.

Where Dembski creates gaps where there are none is in his definition of improbable. He claims that certain events are less probable than others. Considering the events he discusses are within the realm of scientific investigation, saying that they are implying design by virtue of their improbability is saying that improbability is itself a gap in our knowledge and it is within this gap that we need to place God. I argue that the gap which Dembski here identifies is not a gap at all, but rather he is creating a gap and using the gap which he himself creates to insert God into the picture. I further argue that the ultimate God of the Gaps is just as problematic as the traditional God of the Gaps argument.

Another criticism I levelled at Intelligent Design theory is the criticism espoused by Abby Hafer: that Intelligent Design theory is unscientific. Outside of controversies involving allegedly financially-influenced editors of peer-reviewed journals, the hypotheses given by the Intelligent Design theorists are inherently untestable, and therefore cannot be subject to the scientific method. In our understanding of what constitutes science in the contemporary West, that a hypothesis be subject to the scientific method is crucial to its inclusion within the realm of scientific investigation. Scientific investigation consists of the scientific method, and that which does not use the scientific method (or, in the case of the hypotheses of Behe and Dembski, cannot use the scientific method), is outside the realm of science. Furthermore, there is far more evidence supporting the evolutionary biological account of the emergence of natural phenomena such as bacterial flagellum than there is supporting the Intelligent Design account of their being designed by an intelligent designer and placed 'within' evolved creatures in their entirety. Hafer notes that there is far more evidence against an intelligent designer being involved in the process of Darwinian evolution than there is evidence for it, citing examples of what could only be described as 'bad design' if we were to ascribe their design to an intelligence and those areas where humanity – allegedly the pinnacle of Creation and therefore of evolution – suffers in relation to nonhuman animals in terms of its particular biology as *Homo sapiens.* In both their use of God of the Gaps reasoning and in their twisting of science into something which is outside of scientific investigation and the scientific method, the Intelligent Design theorists are an unsatisfactory alternative to Dawkins' New Atheism. In the case of Richard Dawkins' New

Atheism, we were left with a pseudo-religion. In the case of Intelligent Design, we are left with a pseudo-science.

In Chapter 3, I moved on from Types 1 and 4.5 to discuss Type 3. I have said that Messer does not wish to identify any one individual within his typology but wishes to be broader in his descriptions of the Types he describes in his typology. Yet in 2007, when he first introduced his typology to the field, he identified John Polkinghorne as an example of Type 3, where Christian theology and science are given equal regard. Polkinghorne's understanding of the relationship between science and Christian theology is that they are both investigating the ultimate reality: reality which includes within it both the physical universe that we experience and the noetic, spiritual world that God inhabits and where such objective truths such as the laws of mathematics can be found. I illustrated this with an analogy from the video game *Final Fantasy XV*, where magic and technology exist side by side without conflict, and can be used for the same things, such as healing and in combat. For Polkinghorne, reality encompasses both the physical and the divine, and we can ask different questions about the ultimate reality within the different disciplines of science and Christian theology. The two are, in effect, asking different questions about the same thing, i.e. the ultimate reality. I argued that Polkinghorne's position was by far the most satisfactory of the three that I have discussed in this thesis, though it is by no means without fault. I argued that if the laws of science are true, which I believe them to be, and if God exists, which I believe God does, then both explanations of the nature of reality must be true within the same reality. It is not the case that God exists removed from our reality in some deistic fashion, but God is both transcendent and immanent and works within our reality, alongside the physical world which we can investigate using the scientific method.

The first area where I disagreed with Polkinghorne is on this subject of divine action. Polkinghorne believes that God acts within the causal indeterminacies of chaotic dynamics, which he sees as uncloseable gaps where science can never know or discover what is really going on. I found this explanation of divine action to be unsatisfactory, and instead opted for Russel's NIODA or Non-Interventionist Objective Divine Action. Polkinghorne admits to being speciesist in his theological treatment of nonhuman animals, and this is where I once

again differ from his views. Given the evidence we now have from evolutionary biology, we are finding it increasingly difficult to distinguish *Homo sapiens* from other creatures, at least in terms of a biological timeline. The issue remains that, if we wish to view *Homo sapiens* as theologically different from other creatures, then we must explain what it is about the transition of a species which was not *Homo sapiens* to a species that is *Homo sapiens* which changed that species' theological position so dramatically as to be afforded a place in the eschaton where one was not given before. I drew on my case study analogy, *FFXV*, in this discussion, referencing the creatures within that universe known as Chocobos and the quests wherein the player character interacts with them. The distinction between wild and domesticated Chocobos allowed me to highlight the intricate difficulties involved in Polkinghorne's view of nonhuman animals, including their place or lack thereof in the eschaton, where ambiguity of the position of a nonhuman animal in relation to humans or a human makes the conclusions Polkinghorne draws less obvious and more problematic. This has further consequences for the historical emergence of the possibility of sin, as well as creaturely praise. This is a question far too wide to be discussed in this thesis, and so further study is necessary.

Where Polkinghorne's view is the most satisfactory of the three discussed (and, arguably, the five on Messer's typology) is that both divine action and the physical world are said to exist within the same reality. While this does not mean that both the divine and the physical are open to the same kind of investigation, that the effects of both exist within the same reality means that they can both impact on each other: God can act within the world, divine revelation remains intelligible, and prayer too remains intelligible. Yet Polkinghorne's position cannot be adopted without revision. I would argue that a position where the divine and the physical are included within the same ultimate reality and where divine action is described through NIODA and where nonhuman animals are given a greater theological standing does best in describing the reality in which we live, and paints a more accurate view of both science and of the Christian God. Science in this view is given permission to investigate the entire physical world, though it is probably too ambitious to say that science will be able to investigate and explain every aspect of the physical world. God, in this view, is not only a part of the reality which we experience

every day but is a dynamic reality, working in the everyday and with whom we can coherently communicate and interact. Our reality is ultimate, containing both the effects of the divine and the physical, and we have access to it through both scientific and theological investigation.

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