Evolving Epistemology: A Reconsideration of Evolutionary Debunking Arguments Against Religion

Table of Contents

Introduction

What effect does the evolved nature of human cognitive faculties have upon our access to rational belief? That is the central issue of this thesis, addressing a common concern from a fresh angle. Debates of this kind are fundamental to philosophy and theology, but have not had their significance fully recognised until now. The lack of consideration for biological origins of belief in those disciplines' epistemological discussions disappointingly detracts from their depth. I have titled this piece 'Evolving Epistemology' because I firmly believe that epistemology must evolve in response to the questions raised, and evolutionary concerns must be given far greater weight in any revised view. The ramifications of a recalibration, given this new comprehension of human rationality, will be highly consequential for models of reasoning.

Whether religious beliefs can be justified is an issue that has engaged philosophers and theologians for millennia. Many religious believers would certainly claim their beliefs to be rational, and justification is an integral component of rationality. Preserving the justifiability of religious beliefs has therefore been a vital pursuit of theologians wishing to defend them. Whether a belief can be justified relies upon a host of characteristics: its content, its origin, potential counter-arguments, etc. These in turn have historically been affected by considerations based on deductive reasoning, arguments from evidence in the world, or even the innate abilities of humanity. A gamut of different views has been proposed and rebutted across this area over time, demonstrating further the importance of the matter of justification for philosophy and theology.

The evolutionary epistemology I submit in this thesis sits firmly within that extensive history of questioning the justification of religious beliefs. The primary discriminating principle I propose and interrogate is the evolutionary history of humans. Therefore, this thesis can be understood as an investigation into the epistemological status of religious beliefs, within an evolutionary framework. In so doing, I conglomerate evidence from the evolution of humans and religious belief with common models of religious epistemology. Discerning what room there is for evolved humans to justify religious beliefs is a crucial, under-valued task. The ultimate argument I construct throughout my thesis is that proper understanding of evolution leads one to the conclusion that religious beliefs are unjustifiable (not unjustified). In order to establish that innovative position, I extensively consider a variety of issues surrounding the justification and evolution of religious belief in the chapters to come. Here I begin that process by briefly introducing the subject of this thesis, key arguments it will feature, and the structure to expect.

If each element of the investigation coheres in the manner that I purport, then one is drawn inexorably towards the central argument I assert. Indeed, to accept that religious beliefs cannot be justified rationally because humans are creatures limited by their evolutionary history would have blatant, far-reaching consequences. Natural theology is the most clearly affected discipline, as the argument that emerges from my investigation

denies the possibility of its efficacy. In a similar fashion to Immanuel Kant and Søren Kierkegaard's philosophies, an evolutionary epistemology would deny that God is the sort of phenomenon humans are capable of apprehending. Furthermore, if my argument succeeds, there would be tremendous aftershocks into the discourse between science and religion. The consequences of evolutionary science would be negative for the rationality of religious beliefs, and thus science and religion would be incompatible in at least one way. The prospect of an evolved epistemology leading to metaphysical agnosticism, as I will propound, necessitates serious further consideration due to its novelty and significance. In response, philosophers and theologians would have to defend anew the position that human beings, despite the limitations imposed by natural selection, can indeed justify religious beliefs. Matters to come are of the utmost importance for any religious believers who wish to justify their faith, and for the quelling of discord between evidence from evolutionary science and arguments from religious doctrine.

The topics contained within this thesis are significant not merely because they constitute my argument for an evolved epistemology but also because, on their own terms, they represent much-debated quandaries in philosophy of religion. I understand that certain readers maintain prior beliefs that mean an evolutionary approach is undesirable, no matter its merits. Hence, I highlight that in the process of this investigation, I will discern several other essential insights of academic (and non-academic) import. For example, in my treatment of the evolution of religion, I will clarify the disparate kinds of explanation at play. Having done so, it will become evident why the growth and spread of religion is such a complex topic. I hope also to present a synthesis account of why religion is so prevalent in humans, using the best-evidenced portions from different empirical sciences. That account in itself will be valuable in attempts at apprehending religion. Additionally, I survey religious justification, highlighting similarities as well as familiar differences. The discrepancies between internalism and externalism on religious belief have often been exaggerated, and I find that many arguments, mine included, apply equally well regardless of one's epistemological priors. Even in these preliminary exchanges, I reach beyond mere exposition to offer my own inferences from such key debates.

Evolutionary Debunking Arguments (henceforth EDAs) constitute a major portion of this thesis. They use evidence of the evolved nature of religion to undermine its rationality. I postulate several original contributions to the debate that surrounds EDAs. Most significantly, I categorise them and add greater finesse by appreciating the models of justification they use- isolating the specific lines of attack that are most effective against them. The distinction between Aetiological and Faculties EDAs is my own, and it sheds light on the different ways in which arguments that seek to debunk religion pursue that goal. Moreover, I spend a significant portion of the thesis reformulating and defending EDAs, because I believe that there has been an historic under-engagement with their potential power. Hence, the counter-arguments that I do synthesise and invent are more credible, and reach more accurately to the weaknesses of EDAs in general. Naturally, that work also lends itself to more sophisticated insights into an evolved epistemology.

The questions posed by this thesis do not emerge from a vacuum. Personally, I was first intrigued by ideas of debunking after learning about scientific attempts to study examples of non-human 'religion' (some of which can be found in chapter 2). The notion that other creatures might have religious impulses entirely different to our own stimulated epistemic questions. One wonders whether a far more intelligent creature than humans would find our religion just as trivial as we might find notions of chimpanzees or meerkats having 'religion'. From that question sprang interrogation of man's innate capacities and the limitations in his knowledge that might result. For some theologians, that religion is natural was always evident, and can even help defend religious beliefs. Nevertheless, since Charles Darwin's *On the Origin of Species* and *Descent of Man*, which placed humankind firmly among other creatures within evolutionary history, there has been fresh motivation for believers to doubt that humans can really be set apart from other animals, in possessing requisite qualities for accurate, metaphysical beliefs.[1]

Throughout my thesis I will engage with thinkers from a wide spectrum of areas; theologians, philosophers, and scientists each play integral parts in the points I develop. The work is inter-disciplinary in a *true* sense. By that, I mean the arguments I postulate do not merely gesture towards positions from other fields. When I utilise scientific evidence, I interrogate the best available sources and consider ways in which empirical work is, and is not, appropriate for the task at hand. When there are relevant philosophical or theological arguments, I ensure that they are aptly deployed. Integrating viewpoints from different disciplines is highly beneficial for engendering a circumspect outlook, but must be done with appropriate breadth and respect for different perspectives. Key thinkers that will provide those perspectives include philosophers of science John Wilkins and Paul Griffiths; the theologian Alvin Plantinga; the sociologist Richard Sosis; the anthropologist Robert Bellah, and a plethora of other past and contemporary thinkers from philosophy, theology, and the evolutionary sciences. Involving such a breadth of sources is complex but brings a great boon, as each discipline can contribute seriously to the work as a whole.

This thesis has a bold objective. My central argument is designed to be consequential, and will doubtless be controversial. Chapters in which I discuss preliminaries leading towards my argument will also develop original insights that do not always align with the consensus. The issues I undertake affect the academic study of religion in myriad ways, and I thus aim to give fair treatment to a breadth of relevant voices throughout my examination of evolutionary epistemology. Above all, my aim is to propose a recalibration of religious epistemology that takes humanity's evolutionary history properly into account. In doing so, I intend to begin a conversation about how evolution ought to be accounted for within natural theology, and how science and religion may have deeper incompatibility struggles than is currently thought.

[1] Charles Darwin, *The Descent of Man and Selection in Relation to Sex* (1872); *The Origin of Species: By Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life* (2009).

A Wider Lens

The questions of this work reside within the broader contexts of natural theology and philosophical interactions between science and religion. Therefore, I shall discuss these fields, and their relation to this thesis, in order to chart the broader landscape and make plain the implications and origins of the answers I will later uncover.

Natural Theology

Natural theology is a major segment of philosophy of religion, and is typically treated as the counterpart of revealed theology. The two are supposed to form the basis of human knowledge about God. On the one hand, revealed theology is direct revelation from God, whether that be conducted through works such as the Bible, or through religious experience. On the other hand, natural theology relies upon the notion that human reason, and evidence from nature, can produce religious beliefs.[2] As might be expected, there are vastly different opinions on the extent to which one should use one or the other (or both) of these sources for knowledge of God.[3] Natural theology has historically comprised a series of arguments for God's existence, and defences against common attacks on religion.[4] For example, the cosmological and ontological arguments are each archetypal examples of natural theology, as they use evidence and deduction respectively in an attempt to argue towards supernatural knowledge. The underlying expectation is that at least *some* religious beliefs can and should be formulated by resort to human rationality, in combination with what we observe in nature. Although the category of 'natural theology' is often used to apply only to Christianity, other religions do, to various extents, have similar systems of thought, in which reason is used to apprehend the divine.[5]

Natural theology lays the foundations for much of the work to come in this thesis. It is against the background of rational religious belief, derived from evidence and argumentation, that the need for reconsidering evolutionary epistemology becomes stark. Natural theology has grown in popularity in the latter half of the twentieth century, with some thinkers heralding that: "An intellectually robust articulation and defence of historic

[2] The distinction between revealed and natural theology, and the definitions of each, are not without controversy, but I follow convention on how the two are generally described, and how they interact. For example, and a useful exploration, see: Alister McGrath, *Re-Imagining Nature: The Promise of a Christian Natural Theology* (2016). Especially chapters 1 and 2.

[3] Rob Lovering presents an overview of three key approaches to the rationality of religious belief, posing problems for each potential view. Rob Lovering, *God and Evidence* (2013).

[4] Some useful examples can be found in Charles Taliaferro's chapter, as well as the volume as a whole. Charles Taliaferro, "The Project of Natural Theology," in *The Blackwell Companion to Natural Theology*, ed. William Lane Craig and J. P. Moreland (2009).

[5] Jessica Frazier, "Natural Theology in Eastern Religions," in *The Oxford Handbook of Natural Theology*, ed. John Hedley Brooke, Russell Manning, and Fraser Watts (2015); Robert Morrison, "Islamic Perspectives on Natural Theology" in *Ibid*.

Christianity has returned to the academy."[6] My investigation uncovers a foundational problem underlying the entire project of natural theology, inasmuch as it depends on the innate capacities of humans to justify religious beliefs. One could thus present my argument as anti-natural theology, or even anti-God's existence. It is not intended explicitly as such- rather, it concentrates on epistemology of religion. Moreover, the outcome if accepted would be agnosticism rather than atheism on God's existence (or any other religious object). The questions raised within this thesis would not exist without natural theology, and they fit comfortably under that label. Still, to describe them only as natural theological arguments does not do justice to the specific methods that they use, which have targets prior to many of the questions raised within that discipline.

The epistemology of religion is best understood as a precondition for natural theology, because without an adequate comprehension of what it would mean to justify religious beliefs or have religious knowledge, arguments aiming towards those ends are futile. Its remit also expands far beyond this thesis, addressing everything related to justification and knowledge of religious beliefs. Included within it are matters such as whether justification is necessary for religion, and how religious beliefs differ from non-religious beliefs. The primary focus for me will be the extent to which justification is even possible for religious beliefs. Although chapter 3 focusses on religious epistemology specifically, I will briefly survey some historical views as context.

One of the key components of philosophy since its foundation, epistemology has addressed human understanding for millennia. From the starkly opposed views on knowledge offered by Plato and his student Aristotle, to the remarkable impact of Edmund Gettier's short paper on justified true belief, very little has been settled decisively.[7] Analytic philosophy nowadays tends to focus on the conditions that potentially confer 'justification' or 'knowledge' respectively.[8] Evolutionary Debunking Arguments have played a part in those discussions, as they typically target whatever those conditions may be. There is a rich tradition of exploring issues of knowledge, which sets some context for religious epistemology, and the way in which EDAs hope to operate.

Early advocates for the school of thought that religious belief can be justified included influential theologians such as St Anselm and St Thomas Aquinas. Their view represents one of the founding tenets of natural theology- that although faith is not purely rational, significant beliefs *could* be justified through argument and observation of nature. The Anselmian expression 'Faith seeking understanding' illustrates this view well.[9] Faith in

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[6] Chad Meister, J. P. Moreland, and Khaldoun Sweis, "Introduction" in *Debating Christian Theism*, ed. Meister, Moreland, and Sweis (2013). p.1.

[7] Plato, *Phaedo*, translated by David Gallop (1975). §73b-76; Aristotle, *Posterior Analytics*, translated by E. S. Bouchier (1901). pp.4-8; Edmund Gettier, "Is Justified True Belief Knowledge?" *Analysis* (1963).

[8] For example, Timothy Williamson's work re-focussing discussions around 'knowledge-first' ideas, or Alvin Goldman's focus on the means by which beliefs can be justified. Timothy Williamson, *Knowledge and Its Limits* (2000). Especially chapter 1; Alvin Goldman, "Internalism, Externalism, and the Architecture of Justification" in *Reliabilism and Contemporary Epistemology: Essays*, ed. Alvin Goldman (2012).

[9] Jeffrey Pugh, "Fides Quaerens Intellectum." *Theology Today* (1998).

God is a pre-requisite, but adding reason helps humans to know Him truly. Yet even at an early stage there were detractors, a feature of the debate that persisted until the medieval and early modern periods.[10] The Reformation's rallying cry of '*sola fide'* (faith alone) can be construed partly as a rebuke to some of Aquinas' and Anselm's ideas on the use of reason in religion.[11] Disagreements over the necessity and possibility of rationalising religious belief have raged ever since and continue to the modern day. Karl Barth and Emil Brunner's famously fiery dialogue on the subject exemplifies the importance of the discussion for modern theologians.[12] The epistemology of religion is a pivotal issue that has engaged philosophers and theologians ceaselessly, and this thesis fits firmly within that tradition as a novel critique of natural theology.

Science and Religion

"As for Science and Religion, I'm issuing a restraining order. Religion must stay 500 yards from science at all times."

Judge Snyder, *The Simpsons*[13]

Science and Religion are two terms with meanings as wide and varied as their applications. I will investigate in chapter 1 how religion can be defined for the purposes of this thesis, but it suffices to say that within the context of 'science and religion' discourse, each has an approximate meaning. As they are used within the debate, religion tends to refer to the various institutional belief-systems, often monotheisms, such as Christianity and Islam, while science refers to the practice of rigorous empirical method, and all the establishments that have developed surrounding it. These definitions are not always the same, and indeed many of the problems in the debate stem from confusion over terms, but they paint the picture of what is commonly understood to be at stake.

Popular conceptions of 'science and religion' maintain that the two fields are in a state of (perhaps perpetual) conflict. Further, it is often portrayed as a struggle in which science predominates. Either the relationship is presented as science discovering facts about the world that contradict religious doctrine, or as religious believers stubbornly not accepting scientific truths.[14] Despite that popular impression, academic understandings of science

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[10] Using the term 'natural theology' to describe early church works is anachronistic, but Peterfreund remarks "natural theology was an abiding concern of the Church Fathers" (p.1). Stuart Peterfreund, "Introduction: Natural Theology, Leading up to Bacon" in *Turning Points in Natural Theology from Bacon to Darwin*, ed. Peterfreund (2012).

[11] 'Faith alone' refers to more than just the justification of beliefs but is also relevant for the debate between natural and revealed theology. Thomas Schreiner, *Faith Alone- the Doctrine of Justification (*2015). pp.140-4.

[12] Again, disagreements between Brunner and Barth stretched beyond natural theology, and Barth's famous *Nein!* is in part a response to Brunner's use of *imago* doctrine. Joan O'Donovan, "Man in the Image of God: The Disagreement between Barth and Brunner Reconsidered" *Scottish Journal of Theology* (1986). p.2.

[13] *The Simpsons,* season 9, episode 8. "Lisa the Skeptic", Neil Affleck (1997).

[14] Ronald Numbers provides some examples of these popular ideas in his comprehensive chapter. Ronald Numbers, "Scientific Creationism and Intelligent Design" in *Cambridge Companion to Science and Religion*, ed. Peter Harrison (2010).

and religion differ quite drastically. Ian Barbour's four models for interactions between science and religion have been edited and imitated, with several views on the issue.[15] Some theologians or scientists still hold that there is conflict, while others believe the two disciplines are separate. Especially in popular circles, the views of Richard Dawkins and Stephen Jay Gould, who advocate for each of those options respectively, hold great (though mayhap diminishing) sway.[16] Still, the majority of academics, and an increasing portion of popular perspectives too, believe that concord outweighs conflict. This recent consensus is demonstrated by Peter Harrison's statement that "those with more than a passing familiarity with both science and religion have little time for the conflict thesis."[17]

The history of interactions between science and religion (and misunderstandings thereof) has been masterfully charted by historians such as John Hedley Brooke and Harrison. Brooke argues that "there is no such thing as *the* relationship between science and religion", and that by looking at historical issues between the two fields, the real theme that emerges is one of complexity, rather than an overriding narrative of conflict.[18] Harrison argues that aiming to understand interactions between science and religion by using the conflict thesis as a framing device is foolish. Indeed, he argues many potential sources and sites of perceived conflict are not so, and it is wrong even to apply the descriptors of 'science' and 'religion' to the activities that occurred there.[19] Without committing to a specific model of engagement, there is evident reproval from historians of notions of conflict between the two disciplines, and at least implicit support for dialogue.

Several philosophers have attempted to address potential obstacles between science and religion in their field too. These attempts usually posit that there are no *necessary* disputes, and therefore any *apparent* difficulties can be overcome. For example, although there may at first glance be contradiction between the idea that God created the universe, and the notion that the universe began with a Big Bang nearly 14 billion years ago, the two facts

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[15] Barbour's fourfold characterisation of the relationship between science and religion, despite criticisms, still sets the tone of such discussions. Mikael Stenmark has his own four models with a similar motive. Ian Barbour, *Religion and Science: Historical and Contemporary Issues* (1998); Mikael Stenmark, "Ways of Relating Science and Religion" in *Cambridge Companion to Science and Religion*. (2010).

[16] Perhaps the archetypal book in advocating for the superiority of science over religion is Dawkins' *God Delusion*. Meanwhile, Gould posits his notion that Science and Religion are 'non-overlapping magisteria' in an attempt to ameliorate conflict between the two realms, while paying each its dues. To exemplify the popular sway of each view, especially Dawkins', see Fuller's response that references both: Michael Fuller, "Reticence, Reason and Rhetoric: Some Responses to Richard Dawkins' the God Delusion" *The Expository Times* (2010); Richard Dawkins, *The God Delusion* (2006); Stephen Jay Gould, "Nonoverlapping Magisteria" *Natural History* (1997).

[17] Peter Harrison, "Introduction" in *The Cambridge Companion to Science and Religion*. (2010). p.16; See also the introductory chapter within: Alister McGrath, *The Territories of Human Reason: Science and Theology in an Age of Multiple Rationalities* (2019).

[18] John Hedley Brooke, *Science and Religion: Some Historical Perspectives* (2014). p.321. Emphasis his.

[19] Harrison uses a particularly pithy example of nation-states, to argue that, just as it would be nonsense to describe a skirmish in 200 BC between different tribes as a battle between Scotland and England, so too is it nonsense to describe science and religion as at war before each truly existed. Peter Harrison, *The Territories of Science and Religion* (2017). p.5, p.182.

are relatively easy to ameliorate through re-conception of creation. Indeed, some philosophers of religion, such as William Lane Craig, have even used cosmological facts revealed by physics as the basis for arguments in favour of God's existence.[20] The jury may be out on those arguments, but it has become well established that philosophically, evidence from science need not negatively affect religious belief. Such a consensus is further strengthened by the position, of which more will be seen in chapter 1, that metaphysical underpinnings of 'religion' and 'naturalism' need not be contradictory.[21]

To some extent, elements of the study of science and religion fit within the purview of natural theology. Thus, it might be helpful to conceive of this thesis as focussed on the discipline of natural theology, using the lens of science and religion in order to do that. Historical conflicts between science and religion are of interest only insofar as they set the scene for the debates to come, while philosophical debates between science and religion set precedents for key arguments in this thesis. Viewing science and religion from the perspective of natural theology means that the principal matter at stake will be the extent to which religious beliefs can still be justified, in the light of science. If arguments from natural theology are significantly affected in a negative fashion by the ways in which science and religion interact, then the overall relationship would be worsened, as well as having a major impact upon the way natural theology ought to be conducted.

A subset of the interactions between science and religion, which has been most prominent over the last two centuries, is interactions between evolution and religion. Historically, these have brought infamy to the discourse in this area, whether that be through Thomas Henry Huxley's proselytising, or through Dawkins' polemics on evolution removing the need for a designer.[22] This perception makes sense, because on the surface it can seem as though evolution fulfils a role often ascribed to God. The outsized prominence of religious believers who oppose the very idea of evolution, whether through creationism or Intelligent Design, further exacerbates the issue.

Philosophically speaking, the main medium through which evolution and religion are taken to interact is the design argument. The common narrative goes that William Paley justified God's existence along the lines that He was necessary to explain the design we see in the world. Such notions were then allegedly dispelled by Darwin's theory of evolution by natural selection, and the insistence of his supporters, such as Dawkins and Huxley, on God's needlessness.[23] It is true there is philosophical tension between design arguments in natural theology and evidence of evolution. But to view that tension as conclusively

[20] Craig attempts to do this in two primary ways: using Big Bang theory as fortification for his adaptation of the Kalam Cosmological argument, and arguing from apparent cosmic fine-tuning. In neither case is he alone in proposing that such arguments can use scientific facts from physics to strengthen, rather than weaken, natural theology. William Lane Craig, "The Kalām Cosmological Argument " in *Blackwell Companion to Natural Theology*. (2009).

[21] See below for discussion concerning David Ray Griffin, Martin Mahner, etc. on naturalism.

[22] Richard Dawkins, *The Blind Watchmaker*, (2006). Especially chapter 1.

[23] For narratives surrounding Darwin and Design arguments, see: Alister McGrath, *Darwinism and the Divine: Evolutionary Thought and Natural Theology* (2011). Especially chapter 6.

harmful for religion (or science) is wrong. There is a range of viable philosophical and theological positions that take the sting out of any potential blow from evolution. For example, one can state, as Plantinga does, that God designed the evolutionary process.[24] Or, one can instead maintain that evolution does not need God, but He guided the process to achieve certain aims (for example, producing intelligent humans with whom to relate).[25] There may yet be lingering, unresolved issues with reinforcing the design argument by these means. Still, it should be clear that the difficulties in such cases are philosophical, and not due to mere evidence. Hence, while some still postulate philosophical tensions between evolutionary biology and religious doctrine, such thinkers are firmly in the minority to the view that religious beliefs are not threatened by evolutionary science.[26]

So far I have painted a picture regarding science and religion, and evolution and religion more specifically, which portrays the common caricatures of the debate. In both cases it is clear that there are popular misconceptions of how the two disciplines have interacted, which drive the conflict thesis. Upon reflection, it appears that historical disagreements are exaggerated. Likewise, philosophical discontent seems misplaced. Furthermore, certain thinkers have even applied ideas raised by evolution to theology beneficially, improving religious notions of the human being, and creation, by reference to biological evidence.[27] Therefore, evolution-religion interactions follow trends set by broader discussions between science and religion, inasmuch as common conceptions of conflict seem over-stated, and the academic consensus stresses the potential for rich dialogue.

Blending into the scenery

Imagine viewing a panoramic landscape from a high vantage point. One can see with the naked eye a vast array of features: rolling hills, thickets of trees, landmarks. The wide lens of one's eye usefully relays an overview of the scenery before one. If one were to use a

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[24] As expressed in several places, among them in his first chapter of: Daniel Dennett and Alvin Plantinga, *Science and Religion: Are They Compatible?* (2011).

[25] This is a common viewpoint, often known as 'theistic evolution'. One notable theologian who shares it is Christopher Southgate, for whom it is key throughout evolutionary theodicy. Another who describes God as forming the evolutionary process is Michael Murray, who does so within the context of explaining animal suffering. See Van Till's chapter for further discussion of the notion. Christopher Southgate, *The Groaning of Creation: God, Evolution, and the Problem of Evil* (2008); Michael Murray, *Nature Red in Tooth and Claw: Theism and the Problem of Animal Suffering* (2008). Especially chapter 3; Howard Van Till, "Theistic Evolution" in *Three Views on Creation and Evolution*, ed. J. P. Moreland and John Mark Reynolds (1999).

[26] John Worrall exemplifies the position that conflict is irreconcilable, with Del Ratzsch pointing out different forms of explanation are not necessarily greater or lesser. John Worrall, "Does Science Discredit Religion?" in *Contemporary Debates in Philosophy of Religion*, ed. Michael Peterson and Raymond Vanarragon (2003); Del Ratzsch, "The Demise of Religion: Greatly Exaggerated Reports from the Science/Religion 'Wars'" in *Ibid*

[27] Two examples include: Bethany Sollereder, whose work on evolutionary theodicy argues we improve Christian theology by understanding God as designer of the evolutionary process, and Sarah Coakley, who suggests that human evolution of altruism, if guided by God, significantly shows human opportunities for benevolence. Bethany Sollereder, "Exploring Old and New Paths in Theodicy" (2018); Sarah Coakley, "Evolution, Cooperation, and Divine Providence" in *Evolution, Games, and God: The Principle of Co-Operation*, ed. Sarah Coakley and Martin Nowak (2013). pp.8-10.

telescope with a very low level of zoom, one's focus would be drawn to a particular feature, perhaps a farmhouse in a clearing. Using slightly greater magnification would mean that one could pick out distinct features of the farmhouse: how many windows it has, a chimney, the colour of its door. With an even greater level of zoom one's understanding of the farmhouse would gain immense detail. One could see individual bricks, elements of the house that look unstable, or perhaps ascertain if there are any occupants. At the same time, by divining such fine details, it becomes much more difficult to be aware of the entire panorama. While one has zoomed into one feature, and details within that feature, the act of focussing has necessarily removed, for the moment, a clear view of the overall surroundings. The type of lens that one uses to survey a scene matters, whether it be the naked eye, or a telescopic lens with varying levels of zoom. Narrowing one's focus is invaluable for appreciating minute details, but is best done gradually, with an appreciation for the setting of the feature in which one is interested.

This analogy describes the way in which the context of this thesis should be considered. With the naked eye, one can perceive the entire landscape of theology and philosophy in which my thesis is situated. Beginning to focus in might draw one's attention to natural theology- a broad, central element of theology overall. Magnifying further permits one to examine the sub-field of science and religion as it applies to natural theology. Using a high-powered lens, one could specifically focus upon the niche that is epistemology of religion, and the way in which evolution and religion affects that. This sub-section has explicated a wide landscape, illustrating broad strokes of some features, and introducing the reader to pertinent points of the precise position my thesis inhabits.

Depending on one's perspective, one may wish to view the arguments in this thesis with more or less focus on specific detail. Having explicated both the broad theological landscape into which my thesis fits, and the more specific issues and debates of which it forms a part, the shapes and purposes of future sections and chapters should become evident. To carry the analogy to its conclusion: a blight that begins in one seemingly minor location of the landscape can ruin the entire panorama, even viewed from a wide perspective. Equally, while my argument springs specifically from the results of investigation into evolution's effect on epistemology, its ramifications proliferate. Its influence begins in threatening several popular epistemologies of religion, carries on to damage science-religion relations, and ultimately possesses potentially devastating consequences for theological and philosophical beliefs on a grand scale.

Only after one comprehends fully the contexts of natural theology, science and religion, and evolution and religion does the purpose of my argument, and the investigation, become plain. There is an obvious divergence between popular and academic conceptions of science and religion. Often there is good reason for this- misconceptions can cause friction. While there is some evidence that popular views may be softening, the discrepancy remains intriguing. Given natural theology's influence, challenges to it must be considered patiently. Equally, if there are reasons behind the continued perception of conflict between science and religion, these seem all the more worthy of consideration, by

virtue of widespread belief in incompatibility. Taking a narrow view, my argument fits firmly within epistemology of religion, where it might alter common conceptions of religious belief. Surveying more extensively, the ripples that spread from a different comprehension of religious epistemology can easily have a forceful impact upon relations between science and religion, and the solidity of the endeavour of natural theology itself. A proper examination of how evolution affects humanity's ability to justify beliefs has undeniable consequences for epistemology and the science-religion relationship. These are significant, well-storied issues, to which I add my own, original contribution.

Key Arguments

"Men make their own history, but they do not make it as they please; they do not make it under self-selected circumstances, but under circumstances existing already, given and transmitted from the past."

Karl Marx[28]

"The real problem of humanity is the following: we have palaeolithic emotions; medieval institutions; and god-like technology."

E. O. Wilson[29]

I present these two quotations as they are indicative of the sentiments undergirding the primary argument I propound, emerging from exploration of evolution's impact on religious belief. Marx notes that the power of men is limited to the circumstances in which they are situated, while Wilson adds that our phenomenal aspirations and achievements do not alter the fundamental features of humanity. They are relevant here because, while I am introducing key areas of the thesis to come, it would be remiss of me not to outline the central arguments that form its backbone, including my own. By explicating these from the outset, the preliminaries in which I must engage gain a clearer relevance and role. I will set out, in light detail, the basic structures of the two main branches of EDAs that I identify. Then I will examine in greater detail my own argument. By doing so, I aim to make plain how elements to come cohere, as well as giving a guide to how terms are likely to be used in future chapters.

Having surveyed the fields of natural theology, and science and religion, I clarified where this thesis fits in the theological and philosophical canon. As alluded to above, my arguments are prior to many of those debates, as elements of epistemology of religion. By questioning the justification of religious beliefs (in various ways), these arguments do not directly rebut specific points that religious believers might advance. Instead, they seek to undermine the entire project of natural theology, and in so doing greatly affect the relationship between science and religion, due to their scientific basis. Reviewing how an

[28] Karl Marx, *The Eighteenth Brumaire of Louis Bonaparte,* translated by Daniel De Leon (1898). p.1.
[29] Edward O. Wilson, "Debate..." in *Oxford Essential Quotations,* ed. Susan Ratcliffe (2016).

evolved epistemology affects religion will later lead this thesis through each of these exchanges, resulting in the argument that I postulate.

Aetiological EDAs are the first key branch of arguments with which we shall become familiar, and they use a structure that I distil to this:

> Premise 1) It is possible to explain religion naturalistically.
> Premise 2) If religion has a naturalistic explanation, then religious beliefs are unlikely to correspond with supernatural reality.
> Premise 3) For religious beliefs to be justified, they must accurately correspond with supernatural reality.
> Conclusion) Religious beliefs are unlikely to be justified.

Aetiological Debunking Arguments are categorised as such for the way in which they use causal explanations as the basis of their attacks on religious beliefs. Their first premise is empirical, which is simple to fulfil. Their second premise can be justified in a variety of ways, and is by far their most contentious, as it aims to connect explanation with falsehood. The third premise is a statement about the epistemic prerequisites for religious belief, and varies in specifics between different formulations. Arguments of this kind, therefore, are directed at the origins of religious belief, aiming to show that, as a genre, religious beliefs cannot be justified. They rely upon valid, scientific explanations, and a specific view of epistemology, but have several weaknesses I will expose.

The next type of arguments that will be considered when looking at popular EDAs I term Faculties Debunking Arguments. Arguments of this kind have occasionally been offered in response to Aetiological EDAs, and there is a wide range of them. Overall, their argumentative structure is even simpler than Aetiological EDAs, and resembles this:

> Premise 1) Religious belief is explained by the faculty X.
> Premise 2) X is not a reliable faculty for justifying beliefs.
> Conclusion) Religious belief is not justified.

Perhaps deceptively simple, the argument behind Faculties EDAs requires, prima facie, very little. The first premise, mirroring that of the Aetiological EDA, is empirical, depending on the origins of religion.[30] It uses the language of 'faculties', which will be addressed in greater depth when appropriate, but otherwise is broadly a premise relying upon scientific explanations of religious belief. The second premise is epistemic in character. It adjudicates on the conditions for justification and has a negative judgement for religious beliefs. It can itself be defended in a variety of ways, with the link between faculties and the beliefs they produce perhaps easier to make than the aetiological link between explanations and beliefs. Faculties EDAs, as a category, seek to undermine the

[30] My analysis of the underlying structure of EDAs owes a debt to the valuable clarity of Guy Kahane in setting out the general schema, though his work is ordinarily concentrated on moral realism. Guy Kahane, "Evolutionary Debunking Arguments" *Noûs* (2011).

justification that believers might have for their beliefs by critiquing the faculties used to produce them. Their simple structure belies a multifaceted means of attack on beliefs but, though they are stronger than Aetiological EDAs, I will demonstrate in this thesis that Faculties EDAs are ultimately just as unsuccessful.

My own argument utilises lessons learnt from the prior failures of the Aetiological and Faculties arguments as the culmination of this thesis' deliberations. It is not itself an EDA, but it carries some similar premises. Its premises and conclusions are these:

> Premise 1) Religious beliefs are generated by human religious faculties.
> Premise 2) All human faculties evolved thanks to a process of natural selection.
> Conclusion 1) Human religious faculties evolved thanks to a process of natural selection. (from P1 + P2)
> Premise 3) If a faculty evolved via natural selection and does not pass the Milvian Bridge test, it cannot be known to be reliable.
> Premise 4) Human religious faculties do not pass the Milvian Bridge test.
> Conclusion 2) Human religious faculties cannot be known to be reliable. (from C1 + P3 + P4)
> Premise 5) If a human faculty cannot be known to be reliable, then beliefs that are generated by it cannot be justified by humans.
> Conclusion 3) Religious beliefs cannot be justified by humans. (from P1 + C2 + P5)

My argument builds from the thesis' wider investigation and borrows clearly from the two discussed forms of EDAs in its structure. Although I am more explicit in my reasoning, I too work towards two principal conclusions. The first is primarily empirical, just as the earlier premises from both Aetiological and Faculties EDAs were. The second is epistemic, which again is similar to its predecessors. Nevertheless, the way in which my argument is constructed furnishes it with certain advantages. Most importantly, there is a clearer flow from premises to the overall conclusion, and unequivocal justification of each of the key steps along the way. I am able to do this partly because the two previous structures were more generic, but also because learning from the mistakes made by EDAs improves one's ability to proceed from empirical premises to epistemic premises, then onto conclusions.

Not only does the pivotal argument of this piece build upon EDAs, but it also utilises other critical components of theology and philosophy mentioned already. The thesis overall is intended to supply the reader with the necessary concepts in stages, so that by the time I present my argument on its own terms, the foundations of the various premises upon which it relies are solidly established.

The first premise is largely empirical, though it also utilises a common understanding of what the word 'faculty' means. Such matters suit the realms of science and epistemology of religion and so will be discussed in chapters 2 and 3. Premise 2 accompanies premise 1 and is entirely evidential in nature. Chapter 2 is again where I will defend this premise, by demonstrating that religion, as an evolved phenomenon with phenotypical and

behavioural effects, is susceptible to natural selection. The early premises will, after those opening salvos, be therefore uncontroversial.

Premise 3 at first most clearly resembles a premise from a Faculties EDA. I differentiate my own critique of the justification of religious beliefs by rejecting their language of 'falsehood' or 'unjustified' and maintaining that it is a matter of uncertainty. This difference is subtle, and I will address it in greater detail in chapter 7. Otherwise, much of the foundation of premise 3 stems from the fifth and sixth chapters. There, despite finding that EDAs fail for a multiplicity of reasons, I will demonstrate that certain elements of the Faculties EDA are more resilient than typically noted, and ought not to be dismissed as easily as they often are. Included among those elements is the Milvian Bridge test, one of the chief subjects of chapter 5. This test, devised by philosophers John Wilkins and Paul Griffiths, has been unfairly criticised, and not had its full potential exploited. It is pivotal for certain EDAs, and my thesis more broadly. Hence, I dedicate a significant portion of the thesis to its defence, as without it there are no solid epistemic grounds from which to begin questioning the justification of religious belief.

Finally, the last few premises either follow logical deduction or are based on religious epistemology. There will be groundwork for them in the third chapter, which addresses the relation between reliability of faculties and the justification of beliefs that depend upon them, and chapter 7, which considers why religious faculties fail to pass the Milvian Bridge test and what consequences ensue. Together, the premises, and the chapters that substantiate them, allow me to state my conclusion safely.

Many objections to the pivotal argument that I propose in chapter 7 will likely exist; several may already be occurring to the reader. It is for precisely this reason that I begin my thesis with the variety of necessary preliminaries that will proceed in section 1. Stated in a brute manner, my position seems incredibly controversial, even brazen. Nevertheless, I have here, from the outset, acknowledged the needs of different premises and arguments to show where each piece of evidence will be established by my thesis, so that objections can be met there. As the various elements of the investigation into evolutionary epistemology become lucid during the thesis, the argument I express can itself be more visibly regarded as a cohesive whole. In chapter 8 I intend to address several specific objections to the argument for unjustifiability that I propound, to reinforce it. The arguments detailed here will be presented such that objections should dissipate during this thesis. Setting out formal configurations, as I have done, alerts the reader to the manoeuvres that I intend to describe in the chapters to come, and hopefully reassures you that potential difficulties will be anticipated.

The structure of my thesis is layered so as to provide the reader with a necessary, growing body of information and arguments as the analysis proceeds. It is divided into three sections. The first three chapters constitute section 1- 'Appreciating Context'- addressing preliminary concerns such as definitions, scientific evidence and models of justification. Section 2- 'Evaluating EDAs'- begins the evolutionary analysis of religious belief in earnest

by surveying several forms of EDA, and what one can glean for epistemic principles derived from evolution. Chapters 4-6 are all dedicated to expanding and evaluating these influential yet ill-fated contentions. Section 3 is 'Evolving Agnosticism'- the culmination of earlier inquiries. This final section is where I express my own argument and subject it to objections, in chapters 7 and 8 respectively. Having laid the foundations in the first section and evaluated the consistency of evolutionary views in the second, the third section liberates me to complete my evolutionary analysis of religious belief, promulgating my own judgement that an evolutionary epistemology engenders agnosticism.

Religious belief cannot be rationally justified by humans, given the constraints imposed upon our cognitive capacities by the process of natural selection. It is not unique among beliefs in this, and its claims are not necessarily false. Nevertheless, a holistic understanding of the ramifications of the evolutionary process implies epistemological limitation. That is the key claim that I advance as the product of this thesis. Throughout the work, my objective will be to interrogate how evidence from the evolutionary sciences should alter philosophical and theological notions of justification. By doing so, I aim to contribute to the wider narrative concerning the relationship between science and religion, alongside having a potentially seismic impact upon natural theology.

Over the course of the chapters to come, I will describe the evolution of religious belief, assess how that evidence has led to debunking arguments against religion, and develop my own original argument based on humanity's evolved faculties. Earlier sections of the thesis provide exposition and groundwork for the later sections, which crescendo towards the conclusion by constructing higher tiers of argument. Explaining scientific theories on how religion arose, spread, and persisted is an important task in its own right, but is given greater import by the ways in which those theories are used by Evolutionary Debunking Arguments. EDAs against religion are themselves significant because they receive insufficient treatment for the level of threat they possess to the rationality of religious beliefs. Moreover, though, they furnish me with firm footing for a novel means of examining religious belief. Incorporating evolutionary science into our comprehension of religious belief has a storied past upon which it pays to reflect, prior to synthesising such ideas into an epistemological investigation with eminent repercussions for philosophy, and the relationship between science and religion.

Section 1

Appreciating Context

Chapter 1:
Demarcating Definitions

Any investigation into the philosophical and theological limitations upon religious belief imposed by evolution carries great risk from an early stage. If the battle lines are ambiguous, confusion will inevitably emerge when dealing with complex concepts. This first section of my thesis, then, addresses the necessary contextualisation for later chapters to flourish. The introduction explained the structure and key arguments to come, and the succeeding chapters will establish consensus on major matters concerning science and philosophy respectively. Meanwhile, this chapter will look to the oft-fraught subject of definitions, to provide perspectives there. By using this section to make plain the common ground on which the foundations of this inquiry sit, I will clarify the definitions, assumptions, key pieces of evidence and prior beliefs that will prove vital over the chapters to come. In doing so, I hope to avoid potential objections originating from prior views, while maintaining space for intriguing, original argument.

In order to host a coherent discussion about the complex matters that are to follow, secure, consensually agreed definitions are of the utmost importance. In this chapter, I intend to complete two main tasks. The first is clearly stating the definitions of the key terms that are to come later in the thesis. The second is that, by giving a brief history of the debate and a clear objective for why each term is necessary, I will justify *why* I have defined the terms to be used as I have. Both tasks are significant, for clarifying how this thesis will discuss key concepts in the future, and for ensuring that I have the broadest base possible to aim to persuade with my arguments. The key terms I wish to define here fit into the following areas: religion, evolution, naturalism, and epistemology.

My guiding principle in much of the ensuing discussion will be a variant on the data modeller's refrain: "Any statement that is perfectly true is not useful, and any statement that is useful is not perfectly true." I am aware of the limitations of definitions, and equally aware that no philosopher can read a definition without wishing to contest it. With these thoughts in mind, the designations here will ensure that the perfect does not become the enemy of the good. It is not possible for my definitions to please every reader, and if I managed somehow to do so, those definitions would be unhelpful in advancing the thesis. So while I aim to take a consensual approach whenever possible, there will be occasions where definitions might not seem entirely satisfactory. Within the context of this work, they serve the purposes required of them, which is the most important feature for them to fulfil. Definitions to come have their limitations and at times rely upon examples and 'family resemblances' more than strict terminology.[31] Still, I urge the reader to bear in mind that, given the constraints of a thesis targeted at the evolution and epistemology of religion, certain sacrifices of breadth must be made.

[31] The idea of 'family resemblances' comes from Ludwig Wittgenstein's work. Ludwig Wittgenstein, *Blue and Brown Books* (1969). pp.16-21

Religion

In order to gain understanding of whether religious belief is debunked or shown to be unjustifiable, we must first ask: what is religious belief? As this is primarily a philosophical and theological investigation into religion's rationality, the core purpose of definition is to establish a clear object on which the philosophical arguments to come might have purchase. Additionally, religion is the subject of scientific study, as will be seen in chapter 2. This complicates matters slightly, as evolutionary explanations of religion often utilise broader definitions. I will first address what the term 'religion' means here, before discussing the particular kinds of religious beliefs that will be specifically targetted throughout the course of this thesis.

The primary priority when defining 'religious belief' is to define 'religion', because 'belief' is a simpler term (as will be seen in the 'epistemology' sub-section). To begin, then: a religious belief is a belief that pertains to religion. This leads inevitably to the question of what 'religion' means. Given that question's historic importance, and central significance to the thesis, I do not believe I can merely state my view. Hence, I shall briefly summarise a range of opinions alongside defending my own definition. The seeming impossibility of defining religion has been well-documented by any who have tried it (E. N. Anderson succinctly summarises some of the major problems), partly because its potential meaning is so broad.[32] For example, definitions focussing on societal cohesion might then include seemingly non-religious areas of life that generate bonding such as nationalism, whereas one focussed on supernatural agents cannot account for notions such as Father Christmas that again do not appear to be religious.

As another example, Ara Norenzayan et al produced a framework to explain religious belief that has as one of its stated aims the avoidance of "what [they] argue are unproductive definitional debates about 'religion'".[33] The writers of that paper thus state that "the religious package is a statistical pattern governed by specific hypotheses, rather than a predefined concept with necessary or sufficient features.", meaning that no singular definition of religion is possible, due to its contingency, despite recurrent themes.[34] The various unsuccessful attempts to define religion can occasionally be an obstacle to productive work, and is caused not only by the elusive, unsettled nature of the subject matter, but also by the disparate methodologies used when studying religion.[35]

Despite no univocal definition, the study of religion has proceeded in many forms, with those various methodologies. Somewhat perversely, anthropologists participate in the

[32] E. N. Anderson, "Attachment and Cooperation in Religious Groups: A Comment" *Current Anthropology* (2010). p.1

[33] Ara Norenzayan, et al., "Cultural Evolution of Prosocial Religions" *Behavioral And Brain Sciences* (2016). p.17

[34] Ibid. pp.17-8.

[35] For further discussion of the difficulty of neatly demarcating religion, and particularly the way different methodologies affect that endeavour, see: Gregory Dawes and James Maclaurin, "What Is Religion?" in *A New Science of Religion*, ed. Gregory Dawes and James Maclaurin (2013). pp.13-4.

discipline that perhaps most comprehensively studies religion and religious belief, yet have no agreed definition of their subject matter, and are often strictly against such a thing. Martin Riesebrodt proposes a practice-based definition focussed on rituals, while another cultural anthropologist, Clifford Geertz, is much slipperier.[36] He offers an incredibly permissive definition based around symbol and emotion, which avoids the supernatural altogether, as in Geertz's investigations priority is given to 'thick' description over solid, generalising definition.[37] While description of that kind doubtless has its merits, it makes it difficult to apply common characteristics across several religions. For that reason, anthropologists (and, to a lesser extent, sociologists) prefer to focus on individual features rather than broad classifications like 'religion'. It is seemingly easier to define what a ritual is, or what constitutes doctrine, cross-culturally. Doing this has the added benefit of allowing meaningful comparison to be made.

Conversely, more empirical scientists often tend to assume defining religion is a simple task; evolutionary biologist Bernard Crespi, for example, offers the simple definition: "religion involves cooperation (in a broad sense of the word) in the context of some combination of morality with the sacred or supernatural".[38] In contrast, evolutionary psychologists Matt Rossano and Benjamin Vandewalle provide this definition in their study of belief and ritual: "Religious cognition appears to be built on at least four mental attributes: (1) a hyperactive agency detection device, or HADD; (2) theory of mind, or TOM; (3) altered or ecstatic states of consciousness; and (4) general imaginative ability (imagination)."[39] In each case, scientific associations are being made between certain features and certain results, and those features are then assumed to be a good analogue for religion. There is less concern from biologists or psychologists about the weaknesses inherent to a one-size-fits-all approach. If their descriptions happen only to match a certain kind of religion, then their data is limited, but not fundamentally flawed.

Looking beyond science- philosophy of religion tends to produce very narrow definitions. For example, theists who aim to defend their beliefs typically term them as 'God-beliefs' or specify precisely the sorts of beliefs that they are defending. Likewise, many philosophical arguments will be based around a single belief, such as 'a perfectly loving God exists'. This allows philosophers to evade many of the problems inherent to defining religion. Those who use EDAs to attack religious beliefs usually focus on these kinds of beliefs, taking as given that they can safely be termed 'religious beliefs', because within some traditions they are. This means that philosophical arguments in this area are highly specialised and function against niche targets. Still, they carry the weakness of not necessarily being applicable to 'religion' more broadly, and only affecting a few, specific beliefs.

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[36] Martin Riesebrodt, *The Promise of Salvation: A Theory of Religion*, translated by Steven Rendall (2012). p.2

[37] Clifford Geertz, *The Interpretation of Cultures* (1973). p.44

[38] Bernard Crespi, "The Kin Selection of Religion" in *The Oxford Handbook of Evolutionary Psychology and Religion*, ed. James Liddle and Todd Shackleford (2016). p.2.

[39] Matt Rossano and Benjamin Vandewalle, "Belief, Ritual, and the Evolution of Religion" in *Ibid* (2016). p.1.

Throughout the variety of definitions offered by commentators on religion one point stands out: how one defines religion depends on the purpose of description; different disciplines include divergent dimensions in their definitions. A definition's key characteristic is its ability to meet the challenges required of it. Anthropologists are most interested in description without generalisation, so are reluctant to utilise any single definition. Conversely, sciences that are more focussed on specific functions define 'religion' in quite broad strokes that serve their purposes, but could cause frustration in other disciplines. Similarly, philosophers are wont to make their terms suit their purposes first and foremost. This often means isolating individual propositions and not being overly concerned with the question of what the unifying category 'religion' itself is.

Consequently, as I am investigating the philosophical basis of religious belief, defining religion in a common-sense fashion with a focus on rationality is sensible. My definition, following others, focusses on specific features that will be relevant for the tasks of this thesis. Yet it also pays due attention to relevance. Though my argument of course only applies to a certain branch of beliefs, it is key that the branch of beliefs to which it applies has real bearing on actual religious attitudes, and those who hold them. Hence, the definition I offer of religion will be directed towards my requirements, while retaining applicability to de facto religious belief, rather than being abstracted to oblivion.

My definition of religion: in this thesis, religion refers to an organised set of beliefs and practices arising around a worldview that attempts to gain access to, and make claims about, a transcendent, ultimate reality. Moreover, religious *beliefs* of the kind that I will evaluate philosophically must not be obviously false (as debunking is then unnecessary), but must express some metaphysical truth claims that can be undermined and discarded, even though the religion of which they form a part cannot be falsified. I am interested in only the beliefs of religion, as practices do not appear to me to be the sort of thing that would be susceptible to philosophical argumentation. EDAs and other epistemological debates can destabilise the justification for certain religious *beliefs*, but not religion overall.

As determined, defining religion and religious beliefs as I have done is only half the battle. I also must demonstrate how my definition is relevant for actual beliefs and actual believers. First and foremost, I will admit that some things that one might consider religions may not fit within my definition, and that there may even be some markedly non-religious things that do fit within it. As ever, I appeal here to the limitations of definitions and the application of common sense. Transcendent, ultimate reality includes things such as Nirvana and Gods such as Allah, but does not include scientific beliefs (as they are not transcendent) or supernatural beings such as Father Christmas (as belief in him is not supposed to reflect ultimate reality).[40] Moreover, by describing the sets of beliefs in which I am interested in as 'organised', I hope to refer to mainstream doctrines and beliefs, which again restricts applicability.

[40] With due apology to believers in Father Christmas.

How aptly does my definition describe mainstream religions? It seems as though there is a pleasing breadth of religions that fit within its scope. The largest 6 major religions on Earth: Christianity, Islam, Hinduism, Buddhism, Sikhism and Judaism, can all be accurately described by my definition.[41] There are organised beliefs and practices, and they aspire towards ultimate reality. Without doubt, there will be smaller religions that equally fit my description. I thus believe that my definition performs its task well in terms of being applicable to a variety of faiths. Within those faiths though, to how many beliefs does the more restrictive requirement of metaphysical truth claims apply?

Looking specifically at religious beliefs, the most narrowing part of my definition calls for propositions that can be rejected, because many religious beliefs abhor that possibility. For example, a believer's statement that 'God loves me' is rarely meant to be interpreted rigorously as a truth claim, and is often an unfalsifiable, emotional statement. Indeed, the definition excludes fideist beliefs, which hold that religion is an object of faith alone and reason cannot ground it.[42] These beliefs are common across several religions, though the term 'fideism' comes from Christianity. For example, the dominant Ash'ari school of thought within Islamic tradition, maintaining God's utter incomprehensibility by reason, is not endangered.[43] Beliefs of this kind could (playfully) be termed 'Apollo 11' beliefs, because for them 'failure is not an option'. As it is impossible to say that they could even be hypothetically rejected, they are not relevant to this thesis.

Another kind of religious belief with which I am not interested is the historic or factual. For example, the statements 'Siddhartha Gautama was Buddha and lived in 5th century BC India' or 'Sikhs do not remove hair from their bodies' are not religious beliefs under my definition. This is because the beliefs themselves do not refer to the transcendent, metaphysical reality of the religion, but instead to its natural facts or historical information. Along similar lines, the beliefs 'Buddha taught four noble truths about existence' and 'Sikhs should not remove hair from their bodies, to obey the will of God' *are* 'religious beliefs' for my purposes.[44] The former makes a clear, metaphysical claim about what is ultimately true and the second contains moral guidance, which has its basis in a transcendent, ultimate realm.[45] These examples clarify the aims and functionality of my definition. This thesis is interested primarily in religious truth claims with a metaphysical

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[41] While there may be individuals within these traditions that do not see these labels as useful, they describe broad swathes of the religiously adherent population well. For information on classification, see: "Religious Composition by Country," *Pew Forum* (2015).

[42] Soren Kierkegaard is the archetypal fideist, positing that reason cannot demonstrate religious truth, so people should make a qualitative "movement of faith" (later interpreted as the famous 'leap') to believe despite the lack of evidence, *because* it is absurd. Søren Kierkegaard, *Fear and Trembling|Repetition*, translated by Howard and Edna Hong (1983). p.48

[43] There remain schools of thought more inclined towards natural theology though, such as Mu'tazilites. Binyamin Abrahamov, *Islamic Theology: Traditionalism and Rationalism* (1998). Chapters 3+6; Majid Fakhry, *A History of Islamic Philosophy* (1983). pp.58-60 and 210-5 indicate Ash'ari primacy of faith over reason.

[44] Kartar Duggal, *The Philosophy and Faith of Sikhism* (2000). p.34.

[45] For further information on the importance and origin of the Four Noble Truths, see: Carol Anderson, *Pain and Its Ending: The Four Noble Truths in the Theravada Buddhist Canon* (1999). Especially pp.54-77.

focus that can be substantiated with appeals to reason and experience. Failure must be, at least hypothetically, an option.

Despite the caveats, a wide array of beliefs that one would typically class as 'religious beliefs' are covered by my definition. As an archetypal example, Aquinas' theology utilises experience and reason when working towards faith, so is conceivably debunkable in part.[46] Where there is natural theology, or some variation thereupon, there is likely to be justification of metaphysical, religious beliefs and thus a significant amount of epistemic surface area on which philosophical discussions may have purchase. When relevant later in the thesis, I will enumerate more sample beliefs that fit within my definition, as targets for the arguments to come, but for now the definition of religion, and beliefs based thereon, should adequately describe to the reader what will be discussed. An EDA may be deemed successful when it exposes the falsehood within reasonable religious beliefs, even if it cannot debunk the religion at large.

Evolution

One cannot posit evolved epistemology, or discuss Evolutionary Debunking Arguments, without adequate appreciation for evolution. 'Evolution' is a far easier term to define than 'religion'. Generally speaking, evolution is a process of gradual transformation.[47] For the purposes of this thesis, the type of evolution to which I habitually refer will be biological evolution, which follows the neo-Darwinian Extended Evolutionary Synthesis consensus. In it, all organisms are descendants of one primordial ancestor organism, and current diversity of traits emerged gradually in a consistent, natural process.[48]

The principle of natural selection is critical to Darwinian evolution. Natural selection is the notion that organisms with traits that produce the greatest fitness will be more likely to survive and reproduce, due to limited resources for increasing numbers of organisms meaning not all can survive. Beneficial traits are passed on, so there is selection of organisms best adapted to their environments.
In Charles Darwin's own words:

> "Owing to this struggle for life, any [beneficial] variation... will tend to the preservation of that individual, and will generally be inherited by its offspring. The offspring, also, will thus have a better chance of surviving… I have called this principle… Natural Selection."[49]

The current model of evolution is the Extended Evolutionary Synthesis, which is neo-Darwinian because it is based on Darwin's principles with new additions. For example, Darwin himself had little understanding of how inheritance and variation, arguably the

[46] Etienne Gilson, *Reason and Revelation in the Middle Ages* (1939). pp.72-84.
[47] Tim Lewens, *Cultural Evolution: Conceptual Challenges* (2015). pp.7-18.
[48] Jean Gayon, "From Darwin to Today in Evolutionary Biology" in *Cambridge Companion to Darwin*, ed. Jonathan Hodge and Gregory Radick (2009). pp.4-6.
[49] Darwin, *Origin of Species*. p.46.

main components of evolution, actually worked. Not until Gregor Mendel's work on genetic inheritance was rediscovered and popularised by William Bateson in the early 20th century, was the transmission of characteristics from generation to generation properly understood.[50] Ronald Fisher's and J. B. S. Haldane's revolutionary work then integrated genetic and mathematical mechanisms into evolutionary theory, two central components of modern evolutionary science.[51] This work culminated in the Modern Synthesis, proposed by Julian Huxley in 1942.[52] Still, over the latter period of the 20th century, more elements were added to the synthesis, such as Stephen Jay Gould's theory of punctuated equilibria, and ideas now termed 'epigenetics'.[53] The Extended Evolutionary Synthesis, argued for by Massimo Pigliucci and Gerd Muller, among a host of other biologists, reflects the most recent scientific knowledge of evolution and its mechanisms and is what will be meant when referring to Darwinian evolution.[54] It still relies on the fundamental concept of natural selection, but also utilises understandings of genetics, speciation, multi-level selection, and other phenomena to explain evolution more completely.

Although the scientific consensus is not in any great question over the fundamental principles of Neo-Darwinism, there are those who take issue. To defend my usage of the Extended Synthesis, I will briefly discuss such criticisms. Attacks usually either take umbrage with the central ideas of, and evidence for, Darwinian evolution, or disagree with its application. The first set of concerns can be dismissed with relative ease, as they suggest that, on its own merits, Darwinism is a failed scientific theory. I will not consider creationism, as it is too widely discredited, but Intelligent Design is a popular notion among some still. Phillip Johnson is perhaps its most famous exponent; he criticises Darwinian evolution for unfalsifiability, as well as being unable to explain phenomena without analogy.[55] Nancey Murphy rightly criticises Johnson for, among other things, failing to appreciate how the scientific method works, and giving short shrift to the testability of auxiliary hypotheses.[56] Michael Behe gives a more finely-tuned example of

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[50] William Bateson, *Mendel's Principles of Heredity: A Defence* (1902).

[51] Ronald Aylmer Fisher, *The Genetical Theory of Natural Selection* (1930); J. B. S. Haldane, "Mathematical Darwinism," *Eugenics Review* (1931).

[52] Julian Huxley, *Evolution: The Modern Synthesis* (1942).

[53] Gould explains his theory of punctuated equilibria, as well as arguing why it, and other developments, should encourage a new synthesis. Stephen Jay Gould, "Darwinism and the Expansion of Evolutionary Theory" *Science* (1982); A good introduction to the notion of epigenetics and its usage within evolutionary theory is in: Antonine Nicoglou, "Phenotypic Plasticity: From Microevolution to Macroevolution" in *Handbook of Evolutionary Thinking in the Sciences*, ed. Thomas Heams, et al. (2015). Especially p.13; Simon Conway Morris' intriguing theory of convergent evolution also warrants mention, as an emerging theory using evolutionary principles with growing empirical support: Simon Conway Morris, *Life's Solution: Inevitable Humans in a Lonely Universe* (2003). Especially p.xii

[54] Massimo Pigliucci and Gerd Muller, "Introduction" in *Evolution, the Extended Synthesis*, ed. Massimo Pigliucci and Gerd Muller (2010). p.10. The entire volume is strongly recommended for further reading on the Synthesis as a whole, what it incorporates and why it may be necessary.

[55] Phillip Johnson, *Darwin on Trial.* (2000).

[56] As well as Murphey's chapter, the wider work contains useful perspectives on creationism. Nancey Murphy, "Phillip Johnson on Trial: A Critique of His Critique of Darwin" in *Intelligent Design, Creationism and Its Critics : Philosophical, Theological, and Scientific Perspectives*, ed. Robert Pennock (2001).

such ideas, arguing that Darwinism cannot explain the evolution of irreducibly complex systems such as cilia and flagella.[57] Like Johnson, Behe's position has been much criticised for both misunderstanding microbiology, and for relying upon ignorance as a defence for intelligent design.[58] Such critiques should be welcomed for their questioning of scientific method, and the occasionally unstable positions evolution inhabits. Critics of Darwinian evolution's empirical fortitude should not, however, be applauded for their scientific merit, as they do not begin to challenge the weight of evidence behind its core ideas.

The other set of critiques of evolution are more constructive. The philosopher Jerry Fodor has a gamut of complaints about Neo-Darwinism, writing with Massimo Piatelli-Palmarini. Most significantly, they argue against the teleology that is often ascribed to evolution, suggesting that natural selection is useless for "distinguishing between the causal roles of co-extensive properties" in bringing about alterations.[59] His over-arching complaint about natural selection, and Neo-Darwinism more broadly, is that it is "empty", because it does not uncover a general law of the Universe, like Newton's theory of gravity, and does not tell us *why* observable patterns of evolution occur.[60] These are valid critiques; the over-use of teleology must be resisted in discussions surrounding evolution, especially when using it in philosophical argument. As a biological narrative to explain natural history, evolution also cannot hope to achieve the predictive, rigorous replicability of physical laws. Nonetheless, the theory of evolution contains great explanatory power, and as long as due care is maintained regarding evolutionary claims Fodor's disputes are insufficient to cause major concerns for natural selection, as it is used in this thesis.

Other attacks on the neo-Darwinian conception of evolution are less fundamental, but highlight examples of over-reach. Whether this is perceived 'imperialism' of adaptationist explanations, or claims to knowledge of precisely which characteristics arose at certain times and why, evolutionary biologists do sometimes make claims that seem difficult to substantiate scientifically.[61] These deficiencies are more constructive to discuss than critiques like Johnson's, but can be responded to quite easily. Adaptationism is often a tempting way of seeing the world, but throughout this thesis I will ensure there is caution to evade its excesses. The fundamental principles of the Extended Evolutionary Synthesis iteration of Neo-Darwinism are not flawed, but the theory can be misapplied and must be used carefully, in-keeping with the best available evidence.

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[57] Michael Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution* (1996). References of this sort form the backbone of Behe's work, but are especially found in chapters 2 and 3.
[58] Robert Dorit, "Darwin's Black Box: The Biochemical Challenge to Evolution" (1997); Marie George, "Darwin's Black Box: The Biochemical Challenge to Evolution (Review)" *The Thomist* (1998).
[59] Jerry Fodor and Massimo Piatelli-Palmarini, *What Darwin Got Wrong* (2011). p.110
[60] Ibid. p.16, 115.
[61] Steven Rose dislikes the influence of genetic explanations, while Ingold criticises the claims to knowledge of the origins of adaptations, and their 'purposes'. Tim Ingold, "Evolving Skills" in *Alas, Poor Darwin: Arguments against Evolutionary Psychology*, ed. Hilary Rose and Steven Rose (2000); Steven Rose, "Escaping Evolutionary Psychology" in *Ibid*.

To some extent, certain criticisms of evolutionary science are associated with criticisms of naturalism, so can be discussed in the sub-section to come. For now, it is worthwhile to note that there are definite difficulties with areas of evolutionary theory, and how it is applied.[62] In spite of that dissent, most critics still agree with the biological consensus that Darwinian evolution by natural selection is, by and large, a well-supported scientific theory, and that the Extended Evolutionary Synthesis, the kind of evolution to which I will refer throughout this thesis, is the best-evidenced version available and a reliable way of describing the development of organisms.[63]

Naturalism and Supernaturalism

Having considered various issues surrounding the scientific theory of evolution, it seems appropriate to address its philosophical foundations next, as it was partly such additional assumptions that caused trouble. Naturalism is typically seen as the philosophical worldview that surrounds and underlies scientific knowledge and pursuit. Briefly though, before addressing naturalism, I have already used the words 'metaphysics' and 'supernatural' on several occasions, so will secure those definitions, which will in turn make clearer certain elements of naturalism.

'Metaphysics' is a word that is best defined by example, as, like 'religion', no single definition suffices. Here, the term 'metaphysics' refers to abstract concepts like God, soul, and morality, which religious beliefs often, but not exclusively, address as real, and which operate on a more transcendent, non-empirical level than merely the physical world, while retaining objectivity.[64] Metaphysics aims to describe ultimate reality, even and especially where that reality is not physical.[65] 'Supernatural' is a broader term for non-natural phenomena that may still operate in the physical world, with a greater focus on causality and agency than metaphysics (e. g. morality is more a metaphysical than a supernatural concept).[66] In this piece, the two will often be used interchangeably, to describe propositions that are clearly beyond the realm of scientific pursuit. As with many of the definitions I state, I tend to follow consensus and dialogue partners when referring to

[62] For an excellent discussion of the difficulty of a singular 'evolutionary theory', and the different levels of epistemic support areas of Neo-Darwinism overall possess, see: Gijsbert van den Brink, Jeroen de Ridder, and René van Woudenberg, "The Epistemic Status of Evolutionary Theory," *Theology and Science* (2017).
[63] For an overview of a great deal of evidence behind neo-Darwinism, along with the already-mentioned works, see: Jerry Coyne, *Why Evolution Is True* (2009).
[64] Thomas Crisp defines metaphysics as "the attempt to get behind the appearances and understand the nature and structure of the reality underlying them"- his definition is a useful guide to my own. Thomas Crisp, "On Naturalistic Metaphysics" in *The Blackwell Companion to Naturalism* ed. Kelly Clark (2016). p.2.
[65] My definition here, though far from entirely satisfactory, follows in the tradition of other influential attempts to describe metaphysics. Peter Van Inwagen, *Metaphysics* (2014). Chapter 1.
[66] For two papers that contain brief discussions of the term 'supernatural', particularly within the context of scientific study of religion and EDAs surrounding it, see: Hans van Eyghen, "Is Supernatural Belief Unreliably Formed?" *IJPR* (2018); Maarten Boudry and Jerry Coyne, "Disbelief in Belief: On the Cognitive Status of Supernatural Beliefs" *Philosophical Psychology* (2016).

phenomena as either 'metaphysical' or supernatural', and believe either meaning should be clear from the context and examples used.

Naturalism is the philosophical worldview associated with science and evolution. It is often demarcated into two main forms: ontological (sometimes known as metaphysical) naturalism, and methodological naturalism. Ontological naturalism is the more strident. It claims empiricism and the scientific method is the only way of expanding understanding of the world. Ontological naturalism can describe scientism- the view that only the natural, empirically observable world exists- but I use it in the above, weaker sense. Scientism itself is rather unpopular because of its seeming disregard for notions of ethics or non-functionalist accounts of the mind.[67] Nevertheless, even the weaker view proffered by ontological naturalism, that science offers the only way of gaining knowledge, has been strongly criticised for its limited, reductionist view of the world.[68] If ontological naturalism does hold, then this thesis, and relations between science and religion, are in strife. Such a view would then seem to necessitate that religious beliefs cannot be justified.

Luckily, there is an alternative- methodological naturalism, which entertains far more modest claims. A methodological naturalist would not state that metaphysics, insofar as it is non-empirical and non-deductive, is a pointless pursuit, but would posit that it pertains to matters external to science's purview.[69] As the name suggests, methodological naturalism is based on the notion that there are certain assumptions that science, including evolution, must make in order for its methods to function. But one only holds the naturalistic positions for the sake of a given experiment or scientific process. For example, a study on the evolutionary tendencies of wasps pays no mind to the possibility that God may guide selective processes, or the assumed notion that evolutionary principles operate similarly across wasps and bees.[70] Doing this allows assumptions to be discharged when not part of the scientific method, and has the general aim of separating scientific information from a philosophical worldview.

There remains, however, a view that evolution (alongside other forms of scientific endeavour) may *necessitate* an assumption of ontological naturalism. Martin Mahner expresses this view, as does Plantinga.[71] Mahner's position is the most interesting, as he

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[67] Mikael Stenmark, *Scientism: Science, Ethics and Religion*, (2017). pp.73-90.

[68] Strict ontological naturalism of this kind has few defenders, but B. D. Ellis presents several arguments for why science's explanations should be considered the best. B.D.Ellis, *Truth and Objectivity* (1990). p.19; Popular attacks on naturalism (among other similarly reductive worldviews) can be found in: Mary Midgley, *The Myths We Live By* (2003); Thomas Nagel, *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature Is Almost Certainly False* (2012).

[69] Michael Ruse, "Darwinism and Naturalism" in *Darwinism & Philosophy*. pp.7-9.

[70] To prove that claim, note the lack of mentions of theism or metaphysics in: Kevin Foster and Tom Wenseleers, "A General Model for the Evolution of Mutualisms" *Journal of Evolutionary Biology* (2006).

[71] Plantinga argues naturalism is the real rabble-rouser between science and religion, as it accompanies evolutionary science and undermines religion by its unguided nature. Martin Mahner, "The Role of Metaphysical Naturalism in Science" *Science & Education* (2012). pp.1-3; Alvin Plantinga, *Where the Conflict Really Lies: Science, Religion, and Naturalism* (2011). Chapter 10.

argues methodological naturalism tends toward ontological naturalism. Ultimately, scientific studies must have a non-empirical ontology- assuming regularity, universality, and the lack of supernatural transgression of natural laws are all key to the foundations of any theory describing the natural world. These allegations of unspoken philosophical positioning beneath science mirror complaints made by David Ray Griffin and others.[72]

I do not find the notion that methodological naturalism excludes metaphysical beliefs compelling. As Yonatan Fishman and Maarten Boudry correctly point out, where metaphysical assumptions seem to be made, they are often instead presumed continuations of empirically observed trends- for causality or uniformity.[73] As long as they are only resorted to when methodologically necessary, such assumptions should cause no difficulty. In spite of that worthy defence, it is true that naturalism, and thus the theory of evolution to which it applies, cannot operate *entirely* free from metaphysics. Certain assumptions about the state of the world, such as that it behaves regularly, or that causation is a real concept, do occur while making biological statements. These minor assumptions receive further treatment later in the thesis, but do not make naturalism incompatible with religious belief, or detract from methodological naturalism's viability.

Furthermore, Aku Visala specifically considers the inherent assumptions of Cognitive Science of Religion. These will be relevant especially in chapter 2, but also later in the thesis when the science of religion is relied upon. Visala argues many practitioners of CSR endorse a "strict naturalism" that includes concepts such as physicalism, and leads inevitably in a reductionist, atheistic direction.[74] Constructively, he does not believe that that dooms the entire endeavour, though. Visala argues that the cognitive study of religion can continue, relying instead upon "explanatory pluralism", a recognition that all descriptions are by their very nature incomplete.[75] Cognitive, behavioural, folk, and other forms of explanation can all operate alongside one another, without contradiction, and with an acceptance of the limits of scientific study. The crucial point for the purposes of this thesis is that a healthier form of naturalism is possible; Visala supports the potential for decoupling strict naturalism from CSR- explanations of religion can therefore be based in a methodology that does not harm religious belief from the outset.[76]

This piece begins from a methodologically naturalistic position, because to do otherwise would illogically exclude religious beliefs. My ultimate conclusion, with its rejection of the possibility of justifying religious beliefs, may resemble an ontologically naturalistic one, but this is argued as an unforeseen consequence of evolution and religion reacting to one

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[72] David Ray Griffin, *Religion and Scientific Naturalism: Overcoming the Conflicts* (2000). Chapter 8.
[73] Yonatan Fishman and Maarten Boudry, "Does Science Presuppose Naturalism (or Anything at All)?" *Contributions from History, Philosophy and Sociology of Science and Mathematics* (2013); Elliott Sober, "Why Methodological Naturalism?" in *Biological Evolution: Facts and Theories*, ed. Gennaro Auletta et al (2011).
[74] Aku Visala, *Naturalism, Theism and the Cognitive Study of Religion: Religion Explained?* (2011). Ch.3 especially.
[75] Visala, "Pro-Science Rhetoric or a Research Program?–Naturalism(s) in the Cognitive-Evolutionary Study of Religion" in *New Developments in the Cognitive Science of Religion: The Rationality of Religious Belief*, ed. Hans van Eyghen, Rik Peels, and Gijsbert van den Brink (2018). p.3.
[76] Visala, *Naturalism, Theism, and the Cognitive Study of Religion* (2011). pp.147-51.

another, not a necessary feature of either field of study. Metaphysical beliefs will form much of the focus of this thesis, but I hope to address them from the perspective of neutral investigator, rather than as one that believes that naturalism must reject metaphysics. I have demonstrated that to do so is coherent, because the potentially exclusionary principles of naturalism can largely be avoided while using evolutionary theory.

Epistemology

Several key terms pertaining to epistemology merit inclusion within this sub-section, as their definitions are important for the thesis overall. 'Belief' is the first. I alluded to it in the 'religion' section- both are obviously terms that will be central in this investigation, but hopefully defining belief has rather less room for controversy than defining religion did. A 'belief', for the purposes of this thesis, is an attitude that one has or a proposition that one regards to be true.[77] It does not require active reflection or, necessarily, justification. In defining belief this way, I follow general convention in philosophy, and in discussions surrounding the evolution and epistemology of religion, which focus on rationality of (usually propositional) beliefs.

There are several more thorny epistemological terms that receive comment in this thesis, but typically my approach remains the same- to evade potential controversy by following conventional usage, both within my specific field of study and within philosophy and theology at large. I will also introduce these terms fully when they are contextually relevant for the chapters to come, but offer a preliminary definition here. 'Justification' is the subject of the third chapter, but the initial definition I present for it is 'a necessary property for a belief to be justified'. Along similar lines, I interpret the key word 'faculty' simplistically- a faculty is whatever process or mechanism forms a belief, however that may occur.[78] Defining key terms thusly may seem tautological, but it importantly retains breadth of approaches, alongside the key aspects of justification, beliefs and faculties that are relevant for the evaluation to come.

Fortunately, my thesis, and my main argument, is interested in whether religious beliefs are justified. This means I can evade two other epistemological issues that have themselves been the subject of many theses: truth and knowledge. I am not, first and foremost, interested in whether religious beliefs are true, or whether they constitute knowledge. I believe that, in order for beliefs to be rational, a sufficient element is that they can be justified. Justification may be an important element of knowledge, and it may be correlated with truth, but throughout this thesis I will not divert undue effort to those interminable notions. As alluded to when discussing the kinds of religious beliefs at play, I therefore take it for granted throughout this thesis that it is desirable for beliefs to be justified, when they are of a propositional nature.

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[77] Eric Schwitzgebel, "Belief" *The Stanford Encyclopedia of Philosophy* (2019).

[78] Jessica Isserow's piece on EDAs against moral realism provides examples of, and insight into, the usage of the term: Jessica Isserow, "Evolutionary Hypotheses and Moral Skepticism" *Erkenntnis* (2019).

Onward Steps

"The Total Perspective Vortex is the most savage psychic torture a sentient being can undergo. When you are put into the Vortex you are given just one momentary glimpse of the entire unimaginable infinity of creation, and somewhere in it a tiny little marker, a microscopic dot on a microscopic dot, which says "You are here" …
The man who invented the Total Perspective Vortex did so basically in order to annoy his wife. Trin Tragula – for that was his name – was a dreamer, a thinker, a speculative philosopher or, as his wife would have it, an idiot. She would nag him incessantly about the utterly inordinate amount of time he spent staring out into space, or mulling over the mechanics of safety pins, or doing spectrographic analyses of pieces of fairy cake.
"Have some sense of proportion!" she would say, sometimes as often as thirty-eight times in a single day. And so he built the Total Perspective Vortex, just to show her.
Into one end he plugged the whole of reality as extrapolated from a piece of fairy cake, and into the other end he plugged his wife: so that when he turned it on she saw in one instant the whole infinity of creation and herself in relation to it.
To Trin Tragula's horror, the shock completely annihilated her brain; but to his satisfaction he realised that he had proved conclusively that if life is going to exist in a Universe of this size, then the one thing it cannot have is a sense of proportion."

Douglas Adams[79]

I have included this extended quotation from Douglas Adams because, like Marx and Wilson in the introduction, he portrays a key theme of my thesis- cognitive limitations. Trin Tragula's wife was made to realise that a sense of proportion of the entire universe is impossible. Similarly, I hope the argument I propose acts as a Total Perspective Vortex for religious believers, demonstrating that, for limited human beings, a sense of metaphysical proportion is not possible. Darwinian evolution has altered the way man views himself, and that should include his rational limitations. An epistemology that properly takes account of and reacts to the theory of evolution is unambiguously necessary. While I cannot promise to offer such a thing wholesale, I at least contribute to evaluating the effect of evolution upon *religious* epistemology, and propose a significant recalibration thereof.

I close the chapter with a reminder of the overall purpose of my thesis to re-focus the reader's attention on the import of its definitions. I pursued precious preliminaries, establishing and defending the definitions at play throughout the work. In specifying these I aim to have excluded as few areas as possible, while retaining focus on commonly understood, relevant beliefs. As I will show, a careful consideration of the potential for evolutionary epistemology to alter religious belief engenders philosophical conflict between evolutionary theory and theology, which threatens the complacent consensus of concord currently present. To continue the contextualisation of my examination of these issues, I will now assess the evolution of religion from scientific perspectives.

[79] Douglas Adams, *The Restaurant at the End of the Universe* (1980). pp.63-4.

Chapter 2:
The Evolution of Religion

Having progressed past the preliminary points of the thesis, I can proceed to the task of explicating the persistent phenomenon of religion. Some of the definitions established in the prior chapter will be immediately necessary here, as one cannot hope to describe the evolution of religion without a solid grasp of what it is. Efforts to explain one of the most significant aspects of human history range widely across numerous fields. Natural histories of religion are nearly as old as religion itself, as Helen De Cruz points out.[80] Here I demarcate natural histories into three kinds: anthropological, psychological and biological. I address explanations in this order because it provides an approximate chronology of when each field began explaining religion rigorously. Anthropology was the first, followed by psychology, while biology addressed religion only recently. By considering assorted explanations, and the valid points that each brings, a comprehensive natural history of religion can be fashioned. An explanation of why humans are religious is invaluable for sections 2 and 3 of the thesis, so this chapter constitutes important empirical groundwork and context, as well as investigating a key issue in its own right.

I utilise my typology because it illuminates the variant approaches possible when studying religion, due to the nature of religion as a multifaceted phenomenon that must be appreciated from different perspectives. There are similarities across the disparate fields, but each has a particular method of discerning key features. Separating them as I do distinguishes whether the primary subject in the origin of religion is the culture, the individual human, or the biological imperative. Although I am designating different scholars and studies into broad categories, I hope not to over-simplify or misattribute, only to organise. Still, in a world containing sub-disciplines such as social anthropology, evolutionary psychology, sociobiology, evolutionary anthropology, and social psychology, my three categories cannot hope to divide the morass of variant views exhaustively. They do have the virtue, though, of simplifying broad areas into approximate modes of thinking. It may be the case that certain thinkers address multiple subjects, or have a different focus to the one I ascribe, but I categorise views based on their relevance for the chapter and the thesis as a whole. Within each sub-section, I make it clear what is to be discussed, and why certain thinkers or studies are, in my view, part of that field. Each explanation in a group shares enough 'family resemblances' to make the distinctions useful and relevant, and so there is reasonable motivation behind allocating them as I do.

There are several further definitions that will be specifically key to this chapter. First, a note on the use of the term 'religion': I defined it in the previous chapter as an organised set of beliefs and practices arising around a worldview that attempts to gain access to and make claims about a transcendent, ultimate reality, but that definition is not universal. As

[80] Helen De Cruz and Johan De Smedt, *A Natural History of Natural Theology: Cognitive Science of Theology and Philosophy of Religion* (2015). Chapter 1.

a result, many of the accounts of religion included in this chapter will include slightly different phenomena within their studies of 'religion'.[81] I will aim only to include studies of 'religion' as I already defined it, though if a scholar's subject seems notably different to my own I will clarify why and how their work will thus be used. Operating definitions of anthropology, psychology, and biology will be remarked upon as they arise, while the broader matter of what 'evolution' is was dealt with in the opening chapter.

Another significant term is 'explain'. Explanation is a fraught matter within theology and philosophy. Here, when I make reference to 'explaining' religion, I mean that the natural history of the evolution of religion (or specific elements thereof) is understood well, including its causes and outcomes. This is not to say that every aspect of religion can be scientifically studied, or that explaining why religion arose alters its metaphysical truth. Michael Murray interrogates the kinds of explanation used for the evolution of religious belief, finding that there is often a tendency to undermine the truth value of religion when explaining it.[82] He raises the important concern that any attempt to explain religion scientifically is likely to be reductive and have a detrimental effect on the rationality of religious beliefs. The tendency to explain away, rather than merely explain, undoubtedly exists within certain philosophical interpretations.[83] I avoid this tendency, and believe it is wholly possible to explain religion's evolution without undermining.

As was alluded to when promoting methodological naturalism in the introduction, one can divorce scientific explanations from philosophical attempts to 'explain away' by isolating interpretative frameworks from evidence. Christopher Pearson and Matthew Schunke have done valuable work in this area, arguing that "nothing inherent to explanatory reduction seems to justify either delegitimising or non-relevance frameworks" with respect to religion and evidence of its origin.[84] That is, while reduction is a necessary part of any explanation, the fact that religion must be reduced to simple components in order to explain it does not mean that it can then be explained away. Nor, by the same token, does the evidence necessarily have no bearing on the truth of religious beliefs- the point is that the interpretative framework is what is important for 'explaining away'. The mere act of explaining does not determine philosophical interpretation of that explanation, whether it be negative for religious belief or otherwise. Hence, this chapter's aim remains firmly in explaining, not explaining away, by adhering to methodological naturalism.

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[81] As was seen in the introduction, definitions of religion vary wildly across different fields.

[82] Michael Murray, "Scientific Explanations of Religion and the Justification of Religious Belief," in *The Believing Primate*, ed. Jeffrey Schloss and Murray (2009).

[83] An example of an attempt to explain religion away can be found in LeRon Shults' work: F. LeRon Shults, "Can Theism Be Defeated? CSR and the Debunking of Supernatural Agent Abductions" *Religion, Brain & Behavior* (2016). To which Søvik responds: Atle Ottesen Søvik, "Can Theism Be Debunked by Philosophical Reflection Grounded in the Findings of CSR?" *Studia Theologica* (2017).
For further discussion on how the cognitive science of religion has been used, often erroneously, to explain away, see: David Glass, "Explaining Away and the Cognitive Science of Religion" *Theology and Science* (2016).

[84] Christopher Pearson and Matthew Schunke, "Reduction, Explanation, and the New Science of Religion" *Sophia* (2015). p.10

'Explaining' the evolution of religions involves describing why religions arose, why they grew, and why they continue to this day, while remaining agnostic as to the justification (or lack thereof) of their contents. Explanations will in this chapter be rightly focussed on naturalistic factors in the evolution of religion, not philosophical interpretation. Arguments about how to interpret such evidence will be evaluated in chapter 4 when addressing Aetiological debunking arguments, which use explanations to criticise the rationality of religious belief.

The cognitive science of (or study of) religion (henceforth CSR) does not fit precisely into any of anthropology, biology or psychology. It is often seen as a sub-section of psychology but CSR borrows from the more functional strands of anthropology and biology as well, to offer a mechanistic explanation of religion. CSR is often used as a byword for scientific descriptions of religion, though I find that usage discouragingly exclusivist, and prefer to survey the 'evolution of religion' instead. Research fitting the cognitive science of religion focusses on explaining specific facets of religion, a focus not shared by all approaches in this chapter. There are undeniably qualms to be had about the scientific study of religion, but these can be surpassed. Indeed, I readily accept the central message of CSR; that it is reasonable to investigate empirically the natural causes and effects of religious belief.

The chapter will begin by addressing anthropological theories, dividing them into their two primary types: functionalist and non-reductionist. From there I move to psychology, which has only rigorously studied religion more recently. I will use that field to take a closer look at the origins of religion for individual humans, rather than groups. After garnering insights from psychology, I will turn to biological theories about the basis of religion. These are useful for helping to merge different views of religion, as they address why religion was beneficial for both individuals and for groups, through their directly evolutionary perspective. In concluding the chapter, I will present my attempt at synthesising the most plausible views together, and will discuss the main overall lessons.

Before commencing those enquiries, I remind the reader of the role that these stories of religion's origin play within the broader plot of my thesis. The significance of empirical explanations of religion will become most blatant when I introduce the main debunking arguments. In the introduction, I set out in brief the premises of Aetiological and Faculties EDAs, and this chapter pertains to each of their first premises, concerning the ability to explain religious belief. The key points that must be evidenced for both kinds of argument are: 1) that religion can be explained without recourse to supernatural causes, and 2) that the reason for religion's rise and growth is not because of its metaphysical truth, but because of its worldly effects. Hence, this chapter is an exercise in attempting to find a natural explanation of religion that is scientifically and historically accurate. It will also, however, evaluate whether plausible narratives rely on the truth value of religion or supernatural causation, as those questions ground the discussions of debunking religion that are to come. For obvious reasons, not every explanation of religion can be included within this chapter, but I have inserted each of the most notable and compelling theories.

The chapter's purpose is key to understanding its content. I will argue that three points in particular emerge from consideration of the evolution of religion. The first point is methodological. The disparate responses that I survey throughout this chapter demonstrate that no single approach can comprehend the variety of religions that exist in the world. To add further complexity, when one asks the question- "why did religion evolve?'- one is not asking just one question. To answer it, one must explain why religion initially arose, why it spread, and why it persisted. Each question has a different answer, and a different method to answer it. Different explanations are required for different explananda. The second point is philosophical. It will become blatant, through implicit investigation, that truth is *not* a necessary or relevant factor for religion's rise and sustenance- it will not figure as part of any natural history of religion. Finally, although there are significant methodological and theoretical disagreements about the study of religion, I will argue that it is best understood by a synthesis account utilising several fields of enquiry to examine its features. The evolution of religion *can* be understood from a naturalistic perspective, but to do so one must utilise many strands of thought creatively.

Anthropological Analyses

Anthropological explanations are the oldest family of views; explanations have been provided from such sources for over a century. An anthropological explanation of religion often draws on evidence of the past cultural development of humanity. Those that will be discussed in this sub-section are set apart by their focus on culture and society, looking at the broad impact of religion upon groups of people. Anthropological theories of religion range from 'functionalist' explanations, notable by their tendency to reduce religious reality to non-religious factors, to 'non-reductionist' explanations that see religion fulfilling a 'religious' purpose in its own right. These categories are identifiable in early anthropological reasoning, and in recent research.

Beginning the anthropological analyses of religion, we encounter an enduring functionalist theory, first proposed in 1870 by Edward Tylor. He posited that religion is a method of explaining otherwise incomprehensible natural phenomena.[85] For example, when an early society tried to understand why days vary in length throughout the year, they may have created a religious legend based on the Sun and Moon. Tylor's work was in many ways pioneering, but he had little in the way of quantitative or qualitative data to substantiate his claims.[86] Nonetheless, more recent anthropological research supports some of his ideas. For example, Agustin Fuentes discusses the notion that religions formulate an explanatory schema, which was used especially by larger human societies as an imaginative and useful means of organising their creative thoughts about the world.[87] The importance of imagination to religion seems obvious, but still occupies anthropological attention. Jan Assman attests to religion's role in human culture, where it

[85] Edward Tylor, *Primitive Culture* (1958). p.16,84,410.
[86] Ivan Strenski, "The Shock of the Savage: Tylor, Evolution, and Spirits" in *Thinking About Religion: An Historical Introduction to Theories of Religion*, ed. Ivan Strenski (2006). pp.18-23.
[87] Agustin Fuentes, *The Creative Spark: How Imagination Made Humans Exceptional* (2017). p.286

organises the often wild fantasies that humans are prone to concoct concerning the natural world.[88] The notion that religion plays a functional role within society, in organising ideas about the world around us as a form of proto-science, is an alluring one. It does, however, have potentially dangerous implications for the way in which the relationship between science and religion is perceived- with the former seeming to supersede the latter.

A more popular functionalist viewpoint, which will be raised throughout this chapter, is that the strict moral code that accompanies religious societies makes them more cohesive, because they set standards that enforce organisation. Beverly Strassman's paper provides an intriguing example of how ritual enforces societal order in practise, studying an African tribe where a menstrual ritual prevents cuckoldry.[89] Her example is a useful and specific anthropological study of how culture foments religions that cause increased pro-sociality and a more unified society. For another idea along these lines, there is Ara Norenzayan's Big Gods theory. He claims large societies form around monotheisms, which explains why monotheistic religions have been so prominent historically. For Norenzayan, "watched people are nice people", and the 'Big God' inspires morality and group survival in believers, ensuring that monotheism functionally secures social bonds.[90] This theory focusses primarily on the way in which religion was influential in ensuring the survival of large societies surrounding monotheisms, but other research looks at smaller scale effects.

Research into smaller groups is typically sociological, and fits in this section as its subjects are still societies and cultures. As an example, Richard Sosis and Candace Alcorta strengthen functionalist notions with their theory that religions provoke 'costly signalling'. Their study shows religious adherents participate in rituals to demonstrate membership of groups.[91] Costly signalling behaviours like praying or giving resources to a religious institution are so called because they come at a cost to the adherent, but this cost is outweighed by the signal they send to other members of the group that the participant is a member of that in-group. Such displays reinforce social bonds and engender deep acceptance into communities, providing one reason why humans engage in them with great fervour. Adding further to the functionalist view that religion brings binding effects to human culture is the work of Dominic Johnson and Jesse Bering. They posit that any honest examination of astonishing levels of co-operation found in humanity leads inevitably to religion, which is a low effort way to improve the satisfaction of the population.[92] In particular, Bering and Johnson echo Norenzayan's focus on punishment, intoning that supernatural punishment is a feature "common to modern religions" that assists them in deterring defection from norms.[93]

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[88] Jan Assman, "Monotheism and Polytheism" in *Religions of the Ancient World*, ed. Sarah Johnston (2004). pp.26-30
[89] Beverly Strassman, "The Function of Menstrual Taboos among the Dogon" *Human Nature* (1991).
[90] Ara Norenzayan, *Big Gods: How Religion Transformed Cooperation and Conflict* (2013). p.10.
[91] Richard Sosis and Candace Alcorta, "Signalling, Solidarity, and the Sacred: The Evolution of Religious Behaviour" *Evolutionary Anthropology* (2003).
[92] Dominic Johnson and Jesse Bering, "Hand of God, Mind of Man: Punishment and Cognition in the Evolution of Cooperation" (2006).
[93] Ibid. p.5

Functional theories promoting religion's utility as unifier or explainer are rejected by some, such as cultural anthropologist Talal Asad, for ignoring the important spiritual nature of religious belief, different from other social phenomena.[94] He maintains that religion brings about its own cultural benefit greater than the social cohesion it produces. For Asad, humanity has a spiritual predisposition for religion that is indispensable; it is a key part of the human fabric. Non-reductionists believe that reducing religion to its cultural benefits removes the all-important subjective aspect, thus functionalist explanations are incomplete. Although he had strong disagreements with him over the definition of religion, Asad's non-reductionist instincts take their lead from Clifford Geertz, one of the most important modern anthropologists. Geertz's 'thick' description aimed to appreciate all the elements of a cultural phenomenon through deep understanding of its complexity.[95] Referring to religion, Geertz believed that the series of symbols that inspire humans to action was the key identifying feature, but he did not assign functional value to the symbols, or the motivations they cause.[96] Similarly, Emile Durkheim, another of the founders of modern anthropology, argues all society is established upon religion, so to ask how it came about is the same question as to ask how human culture and society arose.[97] For Durkheim, religion is necessary not because of its empirical benefits but because it produces an effervescent quality in human groups, which allows the continuation of the collective.

Non-reductionist approaches are set apart from functionalist perspectives due to their insistence on the irreplaceability of religion in society by other factors, and asserting that religion retains much complexity beyond its function. Explaining the function of religion informs one partly on its role in society, but non-reductionists rightly highlight the major portion of religious life that seems to play no functional role. Roy Rappaport is another anthropologist who echoes this sentiment; he highlights the unique nature of religion and what it brings to culture, which cannot be replaced, as many functionalists claim, by non-religious factors.[98] His perspective is that religion has been key at several stages of human cultural development in bringing about societal sophistication. He is keen not to reduce religion to only this viewpoint though, by stressing its features that might not yield adaptive function, such as sacrifice, and the utter uniqueness of religion as a system of symbols beyond the function it fulfils. Jordan B. Peterson's work on the use of religion as a meaning-maker in human lives further embellishes this point. He describes religion in unique terms as a system of symbols that play a distinctive role in the human collective psyche.[99] His interpretation draws inspiration from the psycho-analysis of Carl Gustav Jung, who posited that religion assists people in their quest for meaning by allowing them

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[94] Talal Asad, *Genealogies of Religion, Discipline and Reasons of Power in Christianity and Islam* (1993). Chs. 1+2.
[95] For more on Asad's critiques of Geertz, see: Asad, "Anthropological Conceptions of Religion: Reflections on Geertz" *Man: The Journal of the Royal Anthropological Society* (1983). Geertz's theory of thick and thin description comes from Gilbert Ryle, and has become an important distinction. Gilbert Ryle, "Thinking and Reflecting" in *The Human Agent*, ed. Royal Institute of Philosophy (1968). pp.12-6
[96] Geertz. *Interpretation of Cultures* (1973). Chapter 4 especially.
[97] Emile Durkheim, *The Elementary Forms of the Religious Life* (1964). Chapter 1.
[98] Roy Rappaport, *Ritual and Religion in the Making of Humanity* (1999). Chapter 2.
[99] Jordan Peterson, *Maps of Meaning: The Architecture of Belief.* (1999). Especially chapters 2 and 4.

access to a collective consciousness through 'archetypes'.[100] Peterson adds to Jung's work with a study of the common features of symbols between cultures, emphasising that the collective consciousness has no 'function', per se.

Both functionalist and non-reductionist approaches have evident merits, though their viewpoints are opposed, often diametrically so. Robert Bellah's anthropology ingeniously treads the line between functionalism and non-reductionism. Considering the history of humanity, his *Religion in Human Evolution* credits humankind's "acquisition of new capacities" such as empathy and imagination with major contributions towards religion's evolution.[101] Bellah emphasises humanity's crucial desire to 'play', which means that we invent phenomena like rituals to engage ourselves and each other, as well as relieving us from the intense immediacy of nature. He keenly asserts the uniquely *religious* role that religion played in allowing positive expressions of our playful urges. While they did so imperfectly, theological doctrines allowed early humans to develop by imagining utopias and stymying more competitive impulses, in favour of deference to the supernatural.[102]

Yet Bellah does not shy away from religion's functional benefits too, pointing out that in any archaic society which has received serious study, religion assured societal conformity and institutionalisation, which carried evolutionary advantages. Therefore, religion arose and spread due to its individual necessity *and* its social benefits.[103] Bellah is conspicuously careful to stress religion's distinctive influence upon human history, noting that the imaginative structure of religion was perfectly suited to satisfying our large brains' ludic needs to play, without overtly engendering destructive elements in society. Significantly, Bellah is sympathetic to the explanatory role of functions religion undoubtedly fulfilled across human cultures, while leaving room for a less reductive explanation, by describing religion as a uniquely human invention arising out of our playful, empathetic instincts.[104]

Recent anthropological research, which has become much closer to the fields of sociology and even evolutionary biology, has marshalled significant empirical evidence behind the synthesis ideas set forth by Bellah. Harvey Whitehouse's work on moralising Gods resembles Norenzayan's theory, giving it extra historical and scientific weight by making clear the importance to culture of religions that enforce a moral code.[105] In a historically rich and wide-ranging study of human culture, he and others established strong empirical evidence behind the claim that moralising Gods often tend to appear in societies that are very complex, helping to maintain internal cohesion. Whitehouse et al's work has a somewhat broader perspective than some studies mentioned above, which is useful for demonstrating the functional power of religion across a long time period. Importantly, his

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[100] For example, see: Carl Gustav Jung, *Archetypes and the Collective Unconscious* (1969).
[101] Robert Bellah, *Religion in Human Evolution: From the Paleolithic to the Axial Age.* (2011). p.83.
[102] Ibid. pp.569-85.
[103] Ibid. pp.262-3.
[104] Ibid. pp.603-5.
[105] Harvey Whitehouse et al., "Complex Societies Precede Moralizing Gods Throughout World History" *Nature* (2019).

study does not show plainly that religion exists only because of the functional role it plays, as big societies can exist before religion. Still, religion, as a unique outgrowth of human cultural complexity, then fulfils a function in maintaining and expanding such cultures. There is thus concordance between several anthropologists on using both functionalist and non-reductive explanations in tandem.

Overall, anthropology certainly helps to explain aspects of religion, but functionalist approaches do not fully appreciate religion's unique nature and role in human history. Meanwhile, non-reductionist anthropology fails to explain the genesis of religion adequately, because it tends merely to describe religion, without projecting firmly enough about its causal factors. The dilemma between functionalism and non-reductionism is a debate that has döppelgangers in the other fields, as will be seen. Anthropology's best solution is to merge functionalism and non-reductionism, as suggested by Bellah. But this third way makes claims about humanity's psychological capacities and biological imperatives. Hence, anthropology alone is insufficient for discerning how religion arose. Although the discipline highlights the importance of religion and the societal roles it plays, it lacks the explanatory power to provide an entire account of religion, without drawing significantly on other fields.

Psychological Perspectives

Psychology is a subject that must inform any evolutionary perspective on religion. By 'psychology' I will here mean specifically those approaches that study the human mind or brain and the ways in which it might generate or sustain religious beliefs. This field can be distinguished from anthropology and biology by the fact that it is focussed on what produces beliefs in individual humans, both historically and currently. There are several, varying strands of psychological explanation of religious belief, which, though they are all focussed at the level of an individual human, are partly concerned with the initial genesis of religion, and partly concerned with why it continues and flourishes in the human mind. Methodological difficulties afflict certain psychological perspectives on religious belief, just as with anthropological and biological presentations, but the volume and quality of research into this area is increasing rapidly.

One of the earliest thinkers studying religion from a psychological perspective was William James, who wrote *The Varieties of Religious Experience*. He assessed the psychological effects of mystical and religious experiences (for our purposes the two can be equivocated), defining them by four characteristics: ineffability, transience, passivity, and a noetic quality.[106] He was especially intrigued by the epistemic authority they convey upon their subject- those who have religious experiences typically gain immense certainty

[106] William James, *The Varieties of Religious Experience* (2011). These characteristics are not all found in every religious experience, but typically they possess at least two or three. They refer, respectively, to an experience's hard-to-describe nature, its suddenness, the way it occurs without engagement from the experient, and the spiritual knowledge it seems to impart. pp.538-40.

about religious belief.[107] Such approaches are prevalent in the psychological study of religion, perhaps because the extraordinary event, and life-changing effects, of a religious experience are psychologically remarkable.

Michael Persinger is a more modern source examining the neurology that causes mystical/religious experiences.[108] Famously he claimed to isolate mystical experiences to activity in the temporal lobe of the brain, suggesting that such experiences might even be a by-product of temporal lobe epilepsy. Indeed, he even went so far as to create, with partner Stanley Koren, a so-called 'God helmet', which stimulated the temporal lobe of its wearer in an attempt to generate a mystical experience.[109] Notwithstanding the methodological and empirical issues with Persinger's doubtless intriguing work in this field, I shall avoid delving deeper into this matter that is broadly irrelevant for the chapter as a whole.[110] Discussions of religious experiences are less useful when considering the evolution of religion at large, because religious experiences are far from ubiquitous. As James himself noted, though mystical states are authoritative individually they carry no authority for others. Thus, religion as we know it, on a large scale, could not form purely around occasional religious experiences. More recent psychological explanations of religion typically turn to cognitive neuroscience, and how it can be used to form more general psychology that applies to a larger proportion of people.

Cognitive neuroscience offers several potential avenues for explaining religious beliefs, forming the bulk of this sub-section. The methods of cognitive neuroscience entail modelling neurological processes as computational processes, considering the brain to be modular.[111] Thus, psychological phenomena can be understood by knowing the mechanisms of the brain and the functions they carry out, e.g. if I feel happy, this is because certain neurons in certain areas of the brain are firing in a certain way. To discern this often involves experimentation with human subjects inside machines such as fMRIs (functional Magnetic Resonance Imaging) that allow neuroscientists to pinpoint areas of increased blood-flow and activity within the brain.[112] From these images, conclusions can be drawn about the cognitive mechanisms of the brain, and tendencies identified. In turn, evolutionary psychology then retrojects this picture of the brain onto early humanity to speculate about how religion might first have come about, and complement our understanding of the role religion plays in the mind nowadays.

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[107] For example, consider the writings of Julian of Norwich, or even St Paul.

[108] For a useful overview of the sub-discipline of Neurotheology studying these matters, see: Andrew Newberg et al., *Principles of Neurotheology* (2016).

[109] Michael Persinger et al., "The Electromagnetic Induction of Mystical and Altered States within the Laboratory" *Journal of Consciousness Exploration & Research* (2010).

[110] For a summary of some controversies arising from Persinger's experiments, see: Paul Cooke and Mirari Elcoco, "Neurotheology: Neuroscience of the Soul" *Journal of Young Investigators* (2013). pp.3-4.

[111] M. R. Bennett and P. M. S. Hacker, *Philosophical Foundations of Neuroscience* (2003). Part 3.

[112] Michael Gazzaniga, Richard Ivry, and George Mangun, *Cognitive Neuroscience: The Biology of the Mind* (1998). Chapter 3.6-.7.

Work from cognitive neuroscience on the evolution of religion ought to be taken with a pinch of salt. Severe methodological difficulties malign any attempt to isolate the precise neurological effects of religion. These difficulties include: that an MRI machine is very unlike a temple or church, and that the participants in such studies are often from a small socioeconomic and cultural group.[113] Systematic obstacles mean that the picture afforded us by fMRI studies carries severe limitations in terms of pertinence- it will apply only to certain religions, and certain elements of the religious experience. Though these problems afflict all neurological studies to some degree, due to the unique and complex nature of religion I feel they are particularly relevant here. Certain characteristics of the mind and brain are more conceivably modelled in isolation, but religion is such a cognitively and culturally complex phenomenon that large parts of its essence seemingly cannot be captured through the methods of cognitive neuroscience.

Even notwithstanding these methodological issues, cognitive neuroscience operates upon questionable assumptions that are the subject of much debate. I will here give a brief exposition of some popular criticisms and their relevance. William Uttal questions whether cognitive neuroscience asks the appropriate questions for understanding the mind. He argues it is too broad to be useful, as one cannot study specific neural patterns in the necessary depth, due in part to methodological issues such as variability between experiments and participants. Using broad-brush treatments means that Uttal "would bet that we will never be able to solve the mind-body problem or any significant part of it at the macroscopic levels of analysis now so popular" for neuroscientists.[114] He is bearish on the prospect of cognitive analysis supplying useful answers about why the brain does what it does, due to an inability to link mental and mechanical processes meaningfully.

Michael Anderson echoes many of these concerns, even going so far as to associate cognitive neuroscience with Phrenology.[115] He believes the manner in which both disciplines divide the brain is inappropriately evidenced, in different ways. Anderson believes that cognitive neuroscience has insufficient appreciation of the capacity of the brain for reuse and plasticity- elements that arose for one purpose could be put to several other tasks.[116] Anderson validly critiques both evolutionary and cognitive psychology, as both use functional models that are not effective ways to conceive the inherently flexible, dynamic processes of the human mind. These criticisms are hopefully surmountable if properly taken into account, by ensuring that over-functionalism is resisted and flexibility is embedded within psychological understandings of religion. Anderson himself provides examples of elements of evolutionary and cognitive psychology that correctly appreciate complexity, stating that it is crucial to reject narrow explanation.[117]

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[113] Joseph Henrich, Steven Heine, and Norenzayan, "Most People Are Not Weird" *Nature* (2010).
[114] William Uttal, *Reliability in Cognitive Neuroscience: A Meta-Meta-Analysis* (2013). p.194.
[115] Phrenology is a discredited, mediaeval theory of the human brain, based on measuring the skull and brain after autopsy to draw scientific conclusions. Michael Anderson, *After Phrenology* (2014). Chapter 1.
[116] Anderson. *After Phrenology.* Chapter 3.
[117] Ibid. Chapter 4.

Speaking to the metaphysical implications of cognitive neuroscience, Jerry Fodor's seminal *Concepts: Where Cognitive Neuroscience Went Wrong* expounds several philosophical difficulties. Some of his criticisms concern the physicalist/functionalist theory of mind-body relations that cognitive neuroscience assumes, but careful discussion within a schema of methodological naturalism largely resolves that conflict.[118] His other central critique is focussed partly on how the mind processes concepts, and partly on how neuroscientists work cognitively in order to differentiate concepts and purposes within the brain according to their functions. Fodor's attacks are constructive, however, and like Anderson he does not believe that the field is entirely rotten, only that it needs reform. Indeed, he proposes that his own Informational Atomism would solve the crisis in Cognitive Science caused by errant usage of concepts, though that might be undesirable for other reasons.[119] Significantly, despite allegations that neuroscientific explanations are too reductive to reflect the complex human mind, they are not without value. Therefore, as long as significant care is taken to be clear about what precisely is being investigated, and how it will be demarcated without functionalism, cognitive neuroscience can bring some useful insights on the evolution of religious belief.

There are other attacks on the use of cognitive science regarding religion, including from Aku Visala, who exposes the "strict naturalism" and reductive tendencies that often underly such investigations.[120] Naturalism itself was discussed in chapter 1, and is important here in demarcating a productive path for cognitive neuroscience to contribute without causing metaphysical difficulties, by respecting its limits. It is possible to formulate psychological notions of how religion arose without making the claims that make cognitive neuroscience controversial. From the solid basis of methodological naturalism discussed in the introduction, which would avoid the possibility of representing the brain reductively, psychology and cognitive neuroscience add useful knowledge to our understanding of humanity, and indeed religion. There can clearly be good evidence that does not stray into functionalism when considering human capacities to imagine agents, or investigating neurologically how religion enables social bonds by various brain mechanisms. Thus, cognitive neuroscience can be of use to explain religion empirically, even if the more reductive areas of the field are metaphysically problematic.

Pascal Boyer, one of the pioneers in the field of cognitive science of religion, has published several papers on the neural bases for religious belief.[121] Among them is a review of neurological studies in which Boyer posits that religion uses other brain functions to thrive. He correctly identifies that one cannot find a specific centre for religion in the brain; it uses resources from various areas. As a result, he claims that supernatural belief tendencies are possible because of the collaboration and co-ordination between different

[118] For Fodor's critique on these metaphysical assumptions of cognitive neuroscience, see: Jerry Fodor, *Concepts: Where Cognitive Science Went Wrong* (1998). Chapters 3-4.
[119] Ibid. p.161.
[120] Visala. *Naturalism, Theism and the Cognitive Study of Religion*. 2011. pp.125-32
[121] Beginning significantly with his monograph: Pascal Boyer, *Religion Explained* (2001).

neural regions.[122] For example, beliefs in supernatural agents might trigger systems pertaining to theory-of-mind, agent detection and social exchange, among others, making them plausible across many thought processes. Boyer also discusses the social benefits of religious belief, both on the mind and across societies. In-keeping with discussions already raised in this and the previous sub-section, he argues that after our imaginative cognition produces religious beliefs, it is advantageous to keep those, due to individual and social benefits.[123] Boyer is an important thinker in the field of cognitive science of religion, whose theories set the tone for debates across several fields within it, especially psychology.

Expanding on the importance that Boyer placed upon theory of mind in collaboration with other mental processes, others have studied this potential origin of religious belief further. Psychologists widely accept that humans are unique among the animal kingdom in their capacity for mentalising. Mentalising relies on theory of mind and involves interpreting actions and facial expressions of others to discern their underlying states of mind, i.e. noticing someone is smiling and interpreting that as happiness. Being able to mentalise accurately is evolutionarily useful. To cooperate with others and be aware of potential treachery, it is useful to be able to estimate one's companions' emotions. One popular theory of the evolution of religion springs from here, suggesting that humans over-apply mentalising abilities, particularly when confronted with seemingly meaningful events.[124] For example, when humans experience a beautiful sunset or the death of a loved one, their tendency to mentalise makes them see the events as the actions of a mind. People develop beliefs that a mind is communicating with them through the event. The theory proffered by Bering is that beliefs about a divine mind thus form thanks to humanity's proclivity for mentalising, because people assign a mind even to events that happened independently of one.[125] The notion that religious beliefs seize upon mechanisms that are commonly used for other purposes is popular, and reappears repeatedly within this sub-section.

There are several examples of neuroscientists using fMRI experiments to assess religious participants. While the reservations mentioned above about this methodology must be remembered, there has been some evidence that so-called 'spiritual behaviour' (meditating, praying, etc.) has a positive effect on the brain.[126] Shaul Shalvi and Carsten de Dreu found that oxytocin, a hormone that acts as a neurotransmitter in the brain, and which seems to be produced during the performance of rituals, creates strong group bonds, even at the exclusion of other groups.[127] Moreover, Tiago Bortolini et al used the intriguing example of football fans to demonstrate a neural basis for altruism, which is

[122] Boyer, "Religious Thought and Behaviour as by-Products of Brain Function" *Trends in Cognitive Sciences* (2003). p.5.
[123] Boyer, *Minds Make Societies: How Cognition Explains the World Humans Create.* (2018). Chapter 3 especially.
[124] Dominic Johnson, *God Is Watching You: How the Fear of God Makes Us Human.* (2016). pp.48-60.
[125] Jesse Bering, "The Existential Theory of Mind" *Review of General Psychology.* (2002).
[126] E. Mohandas, "Neurobiology of Spirituality" *Mens Sana Monographs* (2008).
[127] Shaul Shalvi and Carsten de Dreu, "Oxytocin Promotes Group-Serving Dishonesty" *Proceedings of the National Academy of Sciences of the United States of America* (2014).

likely to hold for religion also.[128] Their work is not specifically focussed on religious belief, but shows the neurological power of a collective drawn together by singular passions.

Further work with fMRI scans has involved experiments based around 'priming'. 'Priming' is a psychological term that describes the act of suggesting something to a participant or making them aware of something, usually by way of flashing an image to them, or having them peruse certain material.[129] Religious priming, therefore, might entail flashing an image of a cross in front of a participant, or having them read a religious text before doing a task. Already, critics of cognitive neuroscience have ammunition to allege the unrepresentative nature of priming, so caution must be taken in interpreting these experiments. Their results do seem intuitive though, and concur with observations of religious behaviour, so have some utility.

Azim Shariff et al offer a useful meta-analysis of studies that consider religious priming. Interestingly, they found that while the effects of priming were quite robust in causing pro-social behaviour, it had no effect on those who were non-religious.[130] This implies that religious symbol alone has no functional role, there must be actual religious *belief* for any effect to take place. Additionally, Will Gervais and Norenzayan use the prism of religious non-belief to examine the effects of priming too. Their investigation uncovers the fact that those who are non-religious do not respond as intuitively as religious believers to religious primes, suggesting that secular people might lack certain neurological instincts that religious people possess, which incline one towards belief. [131] The causality of their study may be difficult to discern- religious believers might be more susceptible to priming because they are used to religious iconography. Still, the priming effects spanned into a tendency for non-religious subjects to react far more analytically to a range of material, which might imply that the neurological discrepancies are not simply a result of varying levels of familiarity with religious experience, but imply a real neurological difference.

Theories based on results using fMRI machines typically investigate the neurological effects of religious belief and behaviour. This is where healthy scepticism must be deployed- priming of religious artefacts is clearly not the same as holding beliefs, but it does suggest at least some connection between religious ideation and neurological impulses towards pro-social behaviour. Moreover, it does not seem as though religious imagery is easily replaceable as a method of causing those impulses. Joseph Bulbulia offers some support here, adapting the abovementioned 'costly-signalling' ideas from Sosis and others to state that religion must be an effective psychological tool for policing in order to bring about strong societies.[132] He gives the anthropological ideas some psychological

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[128] Tiago Bortolini, "Neural Bases of Ingroup Altruistic Motivation in Soccer Fans" *Scientific Reports* (2017).
[129] Timothy McNamara, *Semantic Priming : Perspectives from Memory and Word Recognition*, Essays in Cognitive Psychology (2005). p.5. Also contains a more general discussion of priming and its use in psychology.
[130] Azim Shariff et al., "Religious Priming: A Meta-Analysis with a Focus on Prosociality" *Personality and Social Psychology Review* (2016).
[131] Norenzayan and Will Gervais, "The Origins of Religious Disbelief" *Trends in Cognitive Sciences* (2013).
[132] Joseph Bulbulia, "Religious Costs as Adaptations That Signal Altruistic Intention" *Cognition & Evolution* (2004).

basis by arguing that even on the individual level the tendency has been established to associate religious ideas with altruism, a tendency which can then spread across to the group at large. Cognitive neuroscience can thus be used to support the claim that religious beliefs are often necessary, or at least unique, in their ability to drive behaviours that are desirable socially and evolutionarily. Religion might thus have evolved to fill a neurological niche, although in saying as much one must be careful not to promote unscientific notions of a 'religious section' of the brain.

One very significant cognitive hypothesis, which has in some quarters become synonymous with CSR, is HADD theory. It echoes the already-mentioned methodological tendency to seize upon pre-existing psychological proclivities and study how they might cause religious belief, rather than searching for the effects of religious belief on the brain. The term as it pertains to CSR was coined by Justin Barrett, to describe areas of the brain that act as a Hyperactive Agency Detection Device.[133] Agency detection is a key function of the brain, which involves noticing when there are other creatures nearby. This is useful in an array of scenarios, for example when noticing movement in the distance and correctly interpreting that as a predator or prey. It is also useful to have the function be hyperactive rather than underactive, because running away from something that is not in fact a threat incurs a relatively small cost, whereas not running away from an actual threat incurs a great cost. The fact that human detection of agency is hypersensitive is a potential factor in the development of religious belief. Barrett discusses how this can occur in two ways: the first and most popularly conceived version involves looking at some natural phenomenon and falsely ascribing agency behind it, not unlike mentalising. For example, a person might look at a tree that toppled during a storm and imagine that a supernatural being felled it. The second way in which HADD is related to belief requires pre-existing awareness of religion. If a person is aware of supernatural ideas, and something happens in their life that accords with those tales of agency, then they are likely to be brought closer to religious belief. Rosanno and Vandewalle offer an example of such a theory, stating that when one considers HADD in conjunction with humanity's theory of mind, imagination and potential for altered states of consciousness, it seems probable that we would form ideas about supernatural beings that might develop into fully-fledged religious beliefs.[134]

Continuing on this theme, Michael Shermer advances the thesis that religion came about because humanity naturally looks for agency and a greater explanation within the world, so projects the supernatural onto natural events. He uses the brain's tendencies for mentalising, alongside postulating that the HADD malfunctioned in the past and continues to do so, leading humans to suspect supernatural minds like gods are behind natural events.[135] Deborah Kelemen develops this theory by studying children, claiming

[133] The term was coined in: Justin Barrett, "Exploring the Natural Foundations of Religion" *Trends in Cognitive Sciences* (2000). p.3; Graham Ward has a useful review of discussions of agency detection in the context of religious belief: Graham Ward, "Attributing Agency: Fast and Frugal or All Things Considered?" in *Scientific Approaches to the Philosophy of Religion*, ed. Yujin Nagasawa (2012).
[134] Rossano and Vandewalle, "Belief, Ritual, and the Evolution of Religion". pp.3-5.
[135] Michael Shermer, *The Believing Brain.* (2011). Chapters 2 and 4 especially.

that they have "promiscuous teleological intuitions" and this urge is transferred into our adult lives, leading us to be theological.[136] Hence, considering the cognitive consequences of religion leads some psychologists to conclude that it could come from a HADD that (duly or otherwise) discerns a supernatural hand at work within the natural world. This explanation is used to describe the origination of religious beliefs, and their continuation.

Two opposing views of the psychological development of religion have become clear: either human brains have various faculties that happen to allow religious ideas to take hold, or our brains are predisposed towards religion and find it a beneficial, even necessary, phenomenon. This contrast is familiar from anthropology, wherein functionalist and non-reductive models differed on the extent to which religion *qua religion* plays a key role in human culture. It will later feature in biological descriptions too. The way that cognitive neuroscience functions, splitting the brain into areas and divining functions based on that division, means that it views religious belief as a phenomenon reliant upon other neurological capacities. Still, claims concerning a specific 'religious centre' of the brain would be reductive and questionable in the extreme. Nonetheless, there is certainly a divide over the extent to which it can be said that religion fulfils an irreplaceable role within the brain, as opposed to being a mere neurological accident. Theories involving mentalising, or a HADD, fall into the latter category, whereas theories on the neurological impacts upon brain chemistry are more in the former category. All psychological theories with valid evidence play a role in interpreting why religion might have arisen in the brain. It is likely that while religious beliefs utilised pre-existing mechanisms, they also bring their own benefits, so divining their origin is complex.

A further branch of psychological speculation on religious belief concerns humanity's 'modes' of thinking. Neuroscientists delineate two broad types of thinking, known (uncreatively) as 'type-1' and 'type-2'. Type-1 thinking is recognisable by its autonomy. When humans process information through type-1 cognition, they do so unconsciously- it is very quick and not particularly strenuous on the brain's resources.[137] On the other hand, type-2 processing can in part be defined in opposition to type 1 processing- it tends to be slower, non-autonomous and effortful. Its defining feature, however, is "decoupling"- i.e. the ability to cognise potential facts that are untrue without them affecting one's understanding of the actual world.[138] Type-2 thinking is slower and more arduous because it necessitates preventing imagined scenarios from interfering with representations of reality. This means using type-2 thinking can result in more reflective, reasoned appreciations of facts (though that will not always be the case). It is important to note that the delineation is not intended to reflect ontologically distinct areas of the brain, but rather labels facets of the most common forms of processing in which the brain engages.[139]

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[136] Deborah Kelemen. "Are children 'intuitive theists'?" *Psychological Science* (2004).pp.2-3.

[137] Keith Stanovich and Maggie Toplak, "Defining Features Versus Incidental Correlates of Type 1 and Type 2 Processing" *Mind & Society* (2012). p.7.

[138] Stanovich and Toplak, "Defining Features…". pp.8-10.

[139] Dividing processing is not without controversy, but has support. For discussion, see: Alexandra Varga and Kai Hamburger, "Beyond Type 1 Vs. Type 2 Processing: The Tri-Dimensional Way" (2014).

This model has been applied to the study of religious belief by several thinkers. Robert McCauley's provocatively titled *Why Religion Is Natural And Science Is Not* is a famous example. For him, religious belief is best considered as a product of type-1 thinking, because religious beliefs are often generated autonomously, in response to ambiguous information about the natural and supernatural worlds.[140] McCauley terms type-1 processing resulting in religious beliefs 'natural' and the type-2 processing usually required for science 'unnatural', in order to make his provocative claim about the two disciplines' respective naturalness. Kelly Clark and Lluis Oviedo address the application of this divide to religious belief. Clark details empirical data implying that people who are more likely to engage in rational thought are less likely to be religious.[141] Such evidence accords well with McCauley's thesis that religion is caused by unconscious type-1 processing, while atheistic thinking is more closely associated with reflective type-2 thinking. Such a conclusion would be controversial both epistemically, and empirically.

Oviedo's work on the dual-processing account and religious belief mounts a case not to demarcate and classify religious beliefs with the simple 'types' model. He states "The question that appears relatively neglected in the current cognitive study of religion debate is that religious-evolved cognition does not work if based solely on the non-conscious, intuitive, or 'natural form.'" He clarifies that religious beliefs can stem from type-2 processing just as much as they can stem from type-1 processing.[142] In addition to this critique, Jason Slone's study of why people often hold doctrinally incorrect views bears relevance. He argues it is cognitively easy to develop simple, anthropomorphic 'religious' beliefs often based in supernatural explanations of ordinary events. But it is much more difficult cognitively to generate and maintain the beliefs that a theist might term theologically correct- concerning a God who is transcendent and other from humanity.[143] Returning to the central point of how religion might have evolved: it seems that the different types of processing in which humans engage may have a role to play in psychological explanations. It would be too bold to assert religious beliefs are a product of one type or the other though. Thus, at best one could say that, bearing in mind work on HADD and the social-cognitive benefits of religion, humans have the potential, using type-1 cognition, to generate certain religious beliefs unconsciously.

There is evidently a plethora of possible psychological perspectives on the origin of religious belief, each with at least some empirical backing. The first branch concerned humanity's uniquely strong capacity for mentalising, and how that might combine with other elements of the brain to generate supernatural ideas. Then I surveyed several pieces of evidence from cognitive neuroscience that demonstrated religion's beneficial effects,

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[140] Robert McCauley, *Why Religion Is Natural and Science Is Not* (2012). Chapter 4 especially.
[141] Kelly Clark, "Atheism, Inference, and Intuition," in *Advances in Religion, Cognitive Science, and Experimental Philosophy*, ed. Helen De Cruz and Ryan Nichols. (2016).
[142] Lluis Oviedo, "Religious Cognition as a Dual-Process: Developing the Model" (2015). p.18.
[143] Jason Slone, *Theological Incorrectness: Why Religious People Believe What They Shouldn't* (2004). Especially chapter 3. Gervais et al's paper adds further evidence. Will Gervais et al., "The Cultural Transmission of Faith" *Religion* (2011).

arguing that religion is necessary, or at least extremely useful neurologically, and so humans might have evolved religious beliefs and behaviours to fill that psychological niche. The next branch focussed on another natural process of the brain– agency detection, and how hyperactivity in that function might lead to beliefs about religious agency. The 'type' cognition model offers a somewhat different perspective. It expounds the processes that might generate religious beliefs, and how they differ from other types of beliefs. Thus, most psychological explanations tend to assert that religion arose as a by-product of the brain's capacities, though there is room to consider the specific niche of religion too. Psychology has the methodological limitation of only describing individual humans, so again we must look elsewhere for a complete natural history of religion.

Biological Bases

The explanations treated until now have left unexplained the evolutionary mechanisms used to spread religion, through alluding to them implicitly. Biological explanations are (unsurprisingly) the most 'evolutionary' and are identifiable by their focus on fitness, applying natural selection to human phenomena. Indeed, anthropology, CSR and psychology all frequently appeal to Darwinian principles such as fitness- cultural evolution and evolutionary psychology are popular, intertwined strands of thought that emerged due to the influence of evolutionary thinking. Hence, biological theories form the base of many of the foregoing discussions. In a similar sense to the other disciplines, biological explanations of the basis of belief tend either to assert that religion was a by-product of other beneficial adaptations, or that religion is itself an adaptation that increases fitness. They are also identifiable by their use of evidence from the non-human animal kingdom when discerning potential bases of religious belief.

Biological approaches to religious belief are relatively novel. Early pioneers not only inspired other studies discussed in this sub-section but encouraged other fields to consider the evolution of religion as a reasonable unit of analysis. Alexander Gallus is one such forerunner, who happens to substantiate the adaptationist claim concerning religion. His theory is that a religious system is a "biologically necessary adaptation of man to his environment".[144] He formulated this theory in 1972, making him a very early source, and particularly early by the standards of biology, as his application of Darwinism to human affairs was something of a novelty. In support, the notable evolutionary biologist E. O. Wilson also applies evolutionary biology to societal affairs, indeed he discusses religion specifically in depth. Wilson's primary argument was that religion acts as a top-down alterer of gene frequencies by the practices that it encourages, making it a necessary causal adaptation to circumstances, rather than a bottom-up result of other characteristics.[145]

Already in early biological accounts of the evolution of religion, there is an awareness that religion can be understood either as by-product or as an adaptation. Initial work primarily

[144] Alexander Gallus, "A Biofunctional Theory of Religion" *Current Anthropology* 1972). p.17.
[145] Edward O. Wilson, *On Human Nature* (1978). pp.175-190.

took the form of educated guesses based on the mechanisms of evolution. One hypothesis on the evolution of religion with a more rigorous treatment utilises William Hamilton's theory of inclusive fitness. Inclusive fitness is a well-respected model of kin selection: the premise is that genes that benefit an individual's kin can be selected for, even if they adversely affect the individual.[146] Thus, an organism has 'inclusive fitness' that includes not just themselves, but other related organisms with similar genes. Hamilton's theory was well-received, and remains a key means of understanding natural selection across the field of evolutionary biology. In particular, it is used to explain the existence of altruism in the natural world, because it is beneficial from an inclusive fitness perspective to act altruistically towards those with similar DNA (i.e. close relatives), leading to kin selection.

Evolutionary biologists Bernard Crespi and Kyle Summers argue it is appropriate to study religion from an inclusive fitness perspective, because it is a "human phenotype...[that] stands apart from all others with regard to its dominating emphasis on altruism and prosociality."[147] Kin selection might at first not seem well suited to describing religion, because religious groups go beyond kin to people who are not related. Nonetheless, Crespi and Summers expand inclusive fitness by stating that it is beneficial for parents to instil religion within their offspring and other kin due to the co-operative benefits that occur. By group selection and cultural transmission this then spreads into larger groups.[148] Religion, evolutionarily speaking, engenders altruistic behaviour; it is likely to be passed on through generations. The way that the kin selection of religion is described means that it lends itself to a by-product explanation, with religion offered as something that arises, just like morality, as a means of further enabling human co-operation and inclusive fitness.

The tendency to view religious belief as a by-product of other adaptive features found within humanity is common within this field of study. It is in the nature of evolutionary biology to reduce behaviour and explain it in terms of the adaptive fitness it engenders.[149] Evolutionary psychologist Robin Dunbar's theories are notable here. His work, in collaboration with several others, has centred on the evolution of the social instincts that humans possess, and how that affected our groups and our brains. It involves studying the socialisation of primates, which have a similar capacity to humans, though much less developed, for socialisation. 'Dunbar's number' is a theoretical projection that uses data on average group sizes for various species of primates and charts it against their brain sizes, to speculate what the average group size for humans would be on the same scale, given our brain sizes.[150] The number is set at roughly 150, though what this precisely means for

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[146] First advanced in the landmark paper: William Hamilton, "The Genetical Evolution of Social Behaviour I, II" *Journal of Theoretical Biology* (1964).

[147] Bernard Crespi and Kyle Summers, "Inclusive Fitness Theory for the Evolution of Religion," *Animal Behaviour* (2014). p.2

[148] Crespi. "Kin Selection of Religion". pp.2-5.

[149] See: Ilkka Pyysiäinen and Marc Hauser, "The Origins of Religion : Evolved Adaptation or by-Product?" *Trends in Cognitive Sciences* (2010).

[150] Jan de Ruiter, Gavin Weston, and Stephen Lyon, "Dunbar's Number: Group Size and Brain Physiology in Humans Reexamined" *American Anthropologist* (2011). p.2.

humanity's optimum group size is ambiguous.[151] The underlying presumption beneath the entire exercise is that larger brains are required for social cognition tasks. That presumption has extensive empirical support and forms part of the increasingly well-evidenced 'social brain hypothesis', which states the need for sociality as a key driver of humanity's proportionally large brains, and particularly our neocortices, the neurological location for social cognition, like mentalising.[152] Human socialisation and group size is at least a major contributing factor in the size of our brains. Hence, with increasing social complexity, more neurological capacity is required for processing interactions. Thus, selective forces from the environment have driven humans to co-operate, meaning that our capacities for socialisation are adaptations in response to socio-cognitive demands.[153]

In addition to influential work on social behaviour and the brain, Dunbar surveys religion specifically, and attempts to explain its origin in terms of evolutionary biology. His theory utilises the 'social brain hypothesis'. There are many religions, rather than one universal religion, just as there are many languages, despite both religion and language seemingly being useful rubrics for ensuring bonding. Dunbar suggests that this is because "both essentially evolved to bond *small* communities during the earliest phases of human evolution when social communities were small [c. 100-200 people]."[154] He thus ascribes a crucial role to religions, inferring that they were instrumental at a very *early* stage in the development of human social systems. In papers with Sosis and Roger Bretherton, Dunbar et al describe how religious communities are typically more cohesive than non-religious ones, due to their ability to reach an optimal community size more effectively.[155] Within the populations that they studied, there was a significant difference in longevity between religious communes and secular ones, thanks to religious communes' stable and sustainable growth and retention of membership, whereas secular communes were prone to growing exponentially, then declining rapidly. Extrapolating that finding to evolution, religion appears to be adaptively useful in assisting humans in finding fitness-enhancing sizes of groups.[156] That conclusion goes beyond the observation that religion encourages co-operation; it suggests that religious co-operation seems to be more effective than non-religious co-operation. Dunbar's findings regarding religion thus tend towards the idea that humans evolved religious beliefs and behaviours because it was especially adaptive to do so, rather than it being strictly a by-product of already adaptive social behaviour.

James Harrod continues the biological work on religion by arguing, rather startlingly, the case for the existence of chimpanzee religion.[157] If he's right, it might be necessary for me

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[151] Ibid. Some claim that this means the 'ideal' or 'maximum' coherent group size for humans is 150.
[152] Originating in: Robin Dunbar, "The Social Brain Hypothesis" *Evolutionary Anthropology* (1998).
[153] Further support advanced in: Dunbar and Susanne Shultz, "Understanding Primate Brain Evolution" *Philosophical Transactions of the Royal Society* (2007).
[154] Dunbar, "What's Missing from the Scientific Study of Religion?" *Religion, Brain & Behavior* (2017). p.2 Emphasis mine.
[155] Dunbar and Richard Sosis, "Optimising Human Community Sizes" *Evolution and Human Behavior* (2018).
[156] Roger Bretherton and Dunbar, "Dunbar's Number Goes to Church: The Social Brain Hypothesis as a Third Strand in the Study of Church Growth" *Archive for the Psychology of Religion* (2020).
[157] James Harrod, "The Case for Chimpanzee Religion" *Journal for the Study of Religion, Nature & Culture* (2014).

to consider a chimpanzee's opinion on evolutionary debunking! His case is based around a permissive definition of religion and evidence that chimpanzees act in ritualised ways around events such as birth and death.[158] If correct, Harrod's theory would be ground-breaking not only for its judgment on the behaviours of non-human animals, but also in demonstrating the possible use of religion across species lines. Human religion might similarly be a by-product of the adaptive tendency to participate in group activities. A little less outlandishly, Barbara King utilises her extensive work studying great apes to conclude that there is nothing unique to religion that makes it an adaptation. In a similar vein to Crespi and Summers, she posits that religion came about due to the strong social bonds it sustains, but that it is these bonds, what she calls a sense of "belongingness", which are ultimately selected for. Hence, religion is a by-product of evolution rather than an adaptation in its own right.[159] Moreover, though apes certainly feel a sense of belonging, King stops well short of ascribing religion to their behaviours, unlike Harrod. These biological examples of non-human 'religion' seem to back the 'by-product' theory by demonstrating how similar features to human religion, found in other animals, convey benefit without being 'religion', as one would typically define it.

In contradiction to these accounts, Konrad Szocik finds the 'religion as an adaptation' theory to be more convincing, because religion appears to provide an irreplaceable benefit of social cohesion that could not have emerged by other means.[160] Szocik provides a useful summary of several pieces of evidence for and against the adaptationist theory. He argues that the notion that religious belief could be an adaptation to our environment is under-appreciated in scientific, evolutionary discourse. As a result, the extent to which religion has been a necessary benefit across groups and individuals is under-stated by several explanations. Indeed, Szocik "[favours] the approach that claims that religious beliefs were necessary for the evolution of humanity in the Holocene."[161] He sees religion as necessary for surpassing more common evolutionary mechanisms, such as altruistic reciprocity and kin selection, in enabling co-operation. In this way, his approach bears similarities with Dunbar's in claiming a central role for religion above and beyond other cohesive forces like language. Szocik does not wish to say that by-product accounts are entirely wrong, as they obviously offer empirically sound revelations, but he argues strongly for the interpretation of religion as an adaptation that assists humans across environments.

In my view, religion fits neatly into neither the 'adaptation' category nor the 'by-product' category. Thankfully, the celebrated evolutionary biologist Stephen Jay Gould offers a synthesis account. He wrote compellingly against adaptationist trends without specific reference to religious belief.[162] In certain papers, however, he discusses how religion might have evolved. His perspective claims religion stems from humans' self-consciousness

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[158] Ibid. pp.15-6.

[159] Barbara King, *Evolving God: A Provocative View of the Origins of Religion* (2007). p.8.

[160] Konrad Szocik, "Adapationist Accounts Can Tell Us More About Religion Than Cognitive Accounts Can" in *New Developments in the Cognitive Science of Religion* (2018). pp.6-11.

[161] Szocik. "Religion and Religious Beliefs as Evolutionary Adaptations" *Zygon* (2017).p25.

[162] Including in, as well as the several works to come: Stephen Jay Gould, *Ontogeny and Phylogeny* (1977).

arising from our large brains, making it a "spandrel", something that did not arise for an adaptive purpose.[163] The notion of spandrels is one Gould uses elsewhere; it has become an important element within evolutionary biology.[164] It derives from spandrels in a cathedral, which are the triangular spaces between arches, or between an arch and a frame. Spandrels are not an element of the cathedral by design- architects instead design archways, and inevitably must have spandrels separating them. Still, these spandrels can be put to use. They are often decorated beautifully, making them seem as though they have a designated purpose in the cathedral as a whole. Naturally, one must be careful when assigning notions of teleology or design to evolution, but the analogy should be clear. Spandrels are effects for which natural selection does not select, but which come about as a consequence of characteristics that are adaptive. Biological spandrels, like architectural spandrels, can nonetheless be useful, as an organism can find utility even in non-adaptive characteristics. For example, Gould's article points out that even though Aztec sacrifices were useful because they helped to allay chronic meat shortages, they did not arise for that purpose, so it is wrong to view them as an adaptation to that end.[165]

Gould went beyond mere spandrels in his efforts to describe the evolution of religion. He argues that because the over-developed human intellect allowed us to question the world, religion found a function as something humans used to explain the natural world and confront existential questions. In fact, he uses religion as a paradigmatic example of what he called an "exaptation", a key tool he introduced into evolutionary discussions of human behaviour and fitness.[166] An exaptation is a trait that evolved either as a spandrel or for a specific reason, that then came to be used by an organism for an entirely different function, for which it is itself adaptive. Rather like when the spandrel is painted and begins to take its place as a worthy part of the overall design of the cathedral, religion became a fitness-enhancing element of human behaviour in its own right. It is very likely that religion initially evolved as a by-product of other adaptive features, and as little more than a characteristic to drive prosocial behaviour. Nonetheless, religion then developed a unique importance and irreplaceable adaptive significance of its own.

In this way, religion could be similar to the 'Redshirts' of Giuseppe Garibaldi's Italian independence fighters. Garibaldi procured the shirts second-hand because they were cheap- they were red because their previous owners were abattoir workers who needed to hide the bloodstains! After many famous victories, the red of the shirt came to serve a different, symbolic purpose- inspiring the soldiers who wore it by connection with a cause and a tradition.[167] Religion and the Redshirts similarly demonstrate the key principles of exaptations- each arose to serve a certain functional role yet was given a different, symbolic (though nonetheless functional) role later. Thus, an exaptation is a spandrel or

[163] Stephen Jay Gould and R. C. Lewontin, "The Spandrels of San Marco and the Panglossian Paradigm: A Critique of the Adaptationist Programme" *Proceedings of the Royal Society of London* (1979). pp.1-4.
[164] Gould, "The Exaptive Excellence of Spandrels as a Term and Prototype" (1997).
[165] Gould and Lewontin, "The Spandrels of San Marco" p.3.
[166] Gould, "Exaptation: A Crucial Tool for Evolutionary Psychology" *Journal of Social Issues* (1991).
[167] For a history of the origin of the redshirts, see: Frederick Snell, *Garibaldi and His Red-Shirts* (1915). pp.8-9.

trait that arose for one reason but was then co-opted for another purpose, for which it also enhances fitness.[168] They are distinguishable from adaptations, which are features that arise only due to enhancing fitness through their main function, and non-aptations, which do not have an effect on fitness at all.[169] Viewing religion's rise and growth in this way permits some melding of the 'by-product' and 'adaptation' explanations, bringing several kinds of biological evidence to bear. Although it may fail to satisfy adaptationists who want to retain the notion that religion was selected for in some way, or proponents of the by-product thesis who believe that religion cannot have fitness effects of its own, exaptation offers a potentially valuable compromise.

Understanding religion as an exaptation has merit because it allows the empirical data supporting the by-product thesis to combine with evidence for the adaptation thesis. It also fits with cognitive ideas about the brain's hyperactive tendencies and religion's neurological benefits, as well as Bellah's anthropological synthesising of functionalist and non-reductionist theories. More will be said on combinations of theories across fields in my concluding sub-section, where Gould's ideas will be key. Explanations of the genesis of religion by evolutionary biologists usefully expose its potential fitness benefits. Such information is crucial to our comprehension of why religion evolved, and this sub-section has furnished us with several empirically sound theories to that end.

Conclusions

Throughout this chapter I expounded and examined a multitude of theories concerning the evolution of religion. This concluding sub-section will briefly survey a further matter- the evolution of morality, which holds relevance later in the thesis, and is strongly related to the evolution of religion. Moreover, I will highlight that the key themes to which I have repeatedly alluded over the previous three sub-sections can be conglomerated for a satisfying synthesis. The synthesis will use empirical evidence from all three fields to sketch, in outline, a holistic explanation of the evolution of religion. I will then underline the strength and utility of naturalistic explanations of religion, and conclude by establishing the key lessons learnt from this chapter to be applied across the thesis overall.

Systems of norms and rules (a proxy for 'morality') are integral to human culture, and strongly associated with religious belief. I will briefly recount popular theories explaining why humans have inclinations towards moral guidelines. That does not entail tracking the development of moral systems across history or growth of 'right' morality, à la Yuval

[168] Elisabeth Lloyd and Gould, "Exaptation Revisited: Changes Imposed by Evolutionary Psychologists and Behavioral Biologists," *Biological Theory* (2017). p.2.
[169] Ibid. An example of an adaptation might be a giraffe's long neck, which exists because it is adaptive to be able to eat leaves on higher branches. Satisfyingly, the female orgasm in humans may be an explicit example of a non-aptation, as Lloyd argues for its lack of positive or negative fitness consequences. pp.10-14.

Noah Harari or Friedrich Nietzsche.[170] The most convincing scientific explanation relies upon morality's pro-social benefits.[171] As an example, Marc Hauser suggests that by applying universal restraints on human behaviour, morality has utility in enforcing group co-operation.[172] This is not particularly revelatory, though it empirically confirms the notion that moral systems are beneficial evolutionarily and sociologically due to the group cohesion and lack of defecting they inspire.[173] Indeed, Martin Nowak even goes so far as to add co-operation to mutation and selection as fundamental principles of evolution- so morality, as it causes co-operation, is likely to develop.[174] Studying the neurological capacity for morality leads to ideas reminiscent of biological and psychological theories of religion. Penelope Lewis et al investigate the fact that living in groups is more strenuous on the brain's cognitive resources, suggesting that this might be due to having to cope with competing demands from other agents.[175] They emphasise that humans have strong theory of mind capabilities, enabling us to understand what other humans want, and comply with/defect from those demands.

It is possible, therefore, given the benefits of communal life, that morality arose as a necessary means of policing and cohering growing groups together, which eased the cognitive load by removing the constant requirement to assess the intents of others by setting out rules instead.[176] Morality can thus be construed more plainly than religion as a phenomenon that humans acquired and continued due to its functional benefits. Similarly to religious belief, it is straightforward to see that there was no requirement for morals to be true in order for them to be beneficial, or for the factors that caused morality to come about. While I will not venture to offer a combined version of the various accounts I have discussed, empirical explanations are patently useful in discerning why humans engage in moral systems, both initially and in the modern day. For the purpose of later arguments concerning morality in this thesis, establishing that much is sufficient.

Returning to religion, the first theme that was prevalent is the variation in explanandum; different areas of the evolution of religion received different treatment. Anthropological analyses were mainly focussed on how religion spread and persisted. Psychological investigations, however, targetted the neurological tendencies that might cause religious belief to arise initially in an individual. Psychology was thus typically aimed at a prior

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[170] Nietzsche offers his famous explanation of Western morality in his *Genealogy of Morals*, while Yuval Noah Harari's tracking of human history and moral development is a popular work in a similar mould. Friedrich Nietzsche, *The Genealogy of Morals* (2003); Yuval Noah Harari, *Sapiens: A Brief History of Humankind* (2014).
[171] For a valuable viewpoint, see: Michael Tomasello, *A Natural History of Human Morality* (2016).
[172] Marc Hauser, "The Moral Organ: A Prophylaxis against the Whims of Culture" in *Evolution, Games, and God: The Principle of Co-Operation*, ed. Sarah Coakley and Martin Nowak (2013).
[173] Information on the continued development in this field can be found in: Gustavo Carlo et al., "An Evolving and Developing Field of Study: Prosocial Morality from a Biological, Cultural, and Developmental Perspective" in *The Evolution of Morality*, ed. Todd Shackelford and Ranald Hansen (2015).
[174] 'Co-operation' does not translate perfectly to morality, but forms the backbone of many 'moral' behaviours. Sarah Coakley and Martin Nowak, "Introduction" in *Evolution, Games, and God*. p.9.
[175] Penelope Lewis et al., "Higher Order Intentionality Tasks Are Cognitively More Demanding" *Social Cognitive and Affective Neuroscience* (2017).
[176] Ibid. pp.6-8

point in the origins of religion, before considerations of culture. Meanwhile, evolutionary biology works at the level of populations, and so again was concerned mainly with why religion would spread, although in entertaining notions of inclusive fitness biologists were concerned with religion at the level of individuals and small groups too.

Evidently, the three central elements of the evolution of religion that required explanation, as set out in the introduction: why it arose, why it spread, and why it persisted, have each been addressed by this chapter. A major motivation behind my highlighting three types of empirical investigation was to stress that different *kinds* of investigation are necessary for different *elements* of the evolution of religion. The psychology of religion holds the greatest insight into why man began to have religious inclinations; anthropology explains the cultural reasons behind its rise and growth to dominance across human societies; while biology describes the benefits to fitness that religious belief holds and why groups of all sizes might originate and maintain religious structures. Different explananda necessitate different explanations, and by covering a gamut of approaches, a more comprehensive comprehension of the evolution of religion can be (and hopefully has been) achieved.

A further recurrent issue when describing the evolution of religion concerned the tension between explaining religion as a phenomenon unto itself, and explaining religion as an outgrowth of other factors. In the anthropology sub-section, this manifested as a debate between functionalist and non-reductionist perspectives. Psychologists were struck by the same dilemma to a lesser degree- it seemed clear that religion relied upon at least some pre-existing neurological capacities, but there remain questions over the replaceability of religious belief. The most evident expression of the conflict between adaptationist and by-product explanations was found in the sub-section on biological explanations, where debate between the two possibilities stretches well beyond discussions of religion. There is little consensus there on why religion spread, because despite evidence of religion's unique adaptive value, it also seems it could not exist without prior, independently adaptive features of humans and their groups. Therefore, the breadth of fields included in this chapter does not necessarily defuse the potential for conflict in interpreting that array of evidence, especially concerning the precise nature of religion's role in human evolution.

Happily there are several viewpoints and theories that can transcend the adaptation/by-product divide and offer a thorough understanding of the origins of religion. I favoured Bellah's anthropological narrative of religion, because he supplemented a strong grasp of the empirical information with an understanding of the unimaginable complexity of reasons underlying religion's growth, allowing religion both a functional purpose, and a unique role in the story of human history. From psychology, Barrett expressed the most common theme that religion arises from pre-existing neurological tendencies that humans possess, but maintained a keen understanding of the breadth of religious belief beyond the MRI machine, and the psychological benefits associated with religion. Stephen Jay Gould's evolutionary theory of exaptations, developed from spandrels, was powerful because it can be readily applied to religious belief. It cut across the by-product/adaptation divide

effectively, laying the foundations for future explanations that retain the unique role of religion, while appreciating the underlying factors upon which it relies.

In tune with these theories that seek to synthesise several stances on the origin of religion, the abovementioned Richard Sosis offers the most systematic understanding. It appeals due to its ability to blend disparate elements and incorporate empirical evidence from a range of sources. His theory reinterprets religion not only as a functional institution enforcing societal norms, nor as a psychological aberration that may or may not fulfil humanity's quest for meaning, nor even as a biological adaptation arising from other adaptive factors. Instead, he suggests that religion is best construed as a Complex Adaptive System.[177] By 'system', Sosis means that religion is a multifaceted aspect of human society that involves the interplay of multifarious components to generate the larger whole. Those components include: ritual, moral obligation, supernatural agents, myth, and many more.[178] Such elements interact to stimulate individual and group behaviours, which affect reproductive rates, mental and physical health, and most importantly, co-ordinated behaviours. If the positive effects outweigh the negative effects, that then feeds back into the foundations of the system, regenerating motivation for the central features of religious life. The adaptive system is sensitive to the environment, as well as the people in it, and it encompasses a range of religious behaviours and effects.

When Sosis discusses the 'adaptiveness' of religion here he means it in two ways. First, by having religious systems (as long as they are successful), a society and its members are more *adaptive*, i.e. they have greater fitness. Second, religious systems are themselves *adaptable*, meaning that they can, like organisms facing natural selection, adapt to different socio-economic and geographical environments. The Complex Adaptive System is useful for explaining both initial appearance and growth of religion across societies. In Sosis' own words: his theory constructs "a unifying framework that incorporates these insights and provides novel predictions about the success and endurance of religious ideas."[179] As further benefit, Sosis' theory evades several already-encountered difficulties pertaining to definitions, because religion can be broken down into its constituent pieces and a system can be identified with Sosis' only insofar as it matches the components that he describes.

Sosis' theory strikes a unifying tone, of which there has been a remarkable lack on the evolution of religion thus far. Apart from those I have highlighted, many scientific explanations work at the exclusion of other approaches. This is sensible to some extent- science often works best when it knows what it is qualified to say and has a mastery of necessary methods. It does mean, however, that the study of the origins of religion has

[177] Sosis has a useful diagram demonstrating all the elements of religion's complex adaptive system, showing interactions between different elements such as symbol, ritual and doctrine. Richard Sosis, "Four Advantages of a Systemic Approach to the Study of Religion" *Archive for the Psychology of Religion* (2020). p.3.
[178] Sosis, Richard, "The building blocks of religious systems: Approaching Religion as a Complex Adaptive System." In *Evolution, Development & Complexity: Multiscale Models of Complex Adaptive Systems*, ed. G. Y. Georgiev, J. M. Smart, C. L. Flores Martinez, & M. Price (2019). pp.2-4.
[179] Sosis. "Four Advantages…" (2020). p.12.

become somewhat balkanised. Acting as a counter to those forces, Sosis' integrative framework borrows evidence from across anthropology, psychology and biology, as well as other fields as and when they are relevant.[180] This systematic approach has received comment from biologists Martin Lang and Radek Kundt, who echo my praise, in saying: "The complex adaptive systems approach allows for the nestedness and hierarchy of systems and their mutual interactions, which can be studied across various disciplines—from population genetics, over neuroscience, to cognitive and psychological sciences."[181] The pair evidently also see the benefits of Sosis' system in permitting synthesis and complete explanation alongside a fulsome appreciation for complexity.

I dwell on Sosis' theories not just because of their valuable blend of evidence, but also because of their potential. By aiming to predict the future as well as describe the past, Sosis et al make a tentative but serious step towards a falsifiable theory of the evolutionary significance of human religion. Using their model, one can aim to explain what happens within religious systems in the modern day, as one observes that they maintain feedback loops of symbol and socialisation by instantiating concretely, through doctrine, the plethora of possible worlds humans can imagine, to the benefit of adherents. The failure of the feedback systems as living institutions, Sosis reasonably suggests, can help to explain why religions have diminished in relevance as imposers of order across some areas of the modern world.[182] Understanding that lack of adaptivity is not strictly necessary to understanding the evolution of religion, but implicitly speaks to the limits of religion in adapting to contemporary environments. The complex adaptive systems approach might even mean Sosis enables cognitive research of religions, beyond neuroscience, as one could computationally model the energy and activity within such systems.[183] This could prove invaluable for future empirical research into factors that affect the cohesive products of religious beliefs, though with the further step towards reduction comes a need for caution about what may be lost when one utilises modelling explanations.

Uniting the aforementioned most promising attempted explanations of the evolution of religion is eminently possible under Sosis' permissive complex systemic framework. Bellah's observations concerning the human need for play and cohesion can be integrated because they explain the imaginative, meaning-seeking and ritualised elements of religion at scale and across history. Likewise, Barrett's psychological explanations, which couple cognitive neuroscience with holistic appreciation of religion's role in the brain, usefully explain individuals' religious behaviours and belief-formation processes, particularly pertaining to agents and myth. Gould's relevance is plain- the whole framework uses a biological lexicon, wherein adaptivity is understood as fluid and arising from an intermixture of components, both adaptations and by-products. By carefully

[180] Sosis and Jordan Kiper, "Why Religion Is Better Conceived as a Complex System Than a Norm-Enforcing Institution" *Behavioral and Brain Sciences* (2014). pp.9-11.
[181] Martin Lang and Radek Kundt, "Evolutionary, Cognitive, and Contextual Approaches to the Study of Religious Systems" *Method & Theory in the Study of Religion* (2020). p.14.
[182] Sosis. "Four Advantages…" (2020). pp.11-3.
[183] For example: Saikou Diallo et al., *Human Simulation: Perspectives, Insights, and Applications*. (2019).

disintegrating religion into separate parts without removing the potential for meaningful interactions, the three main fields surveyed in this chapter can be incorporated where their revelations are most relevant, while the divides within those disciplines can be dissolved.

From the various roots across several fields thus grows the possibility of religion as something that could not have come about without humanity's immense neurological capacities for agency detection, and selection pressures forcing altruism upon them, but which nonetheless fills its own niche in providing existential satisfaction and nourishing the human transcendent urge, while generating a positive and hard-to-replace feedback loop of pro-social behaviour. Interestingly, such a theory illuminates developments over the last two centuries, when it has often been thought that the existential problems of humanity could be disposed of without recourse to religion, meaning religion would evaporate, but no such disappearance occurred.[184] The initial occurrence of religion can be explained by psychological projections about past humans, while its preliminary spread can be tracked by evolutionary analysis of the fitness benefits that religious belief confers. Finally, the vast cultural impact of religion, and its extraordinary ability to prosper, can be understood through anthropology. Religion occupies an inimitable position in human evolution, culture and psyche, but has also utilised other processes, and its own functional utility, in order to thrive. A systemic approach allows the multifarious explananda to be appreciated by fields appropriate for them, bringing each explanation together in a cohesive whole that describes diverse elements of religion in human evolution.

To conclude, no single empirical explanation of religion suffices alone. Nonetheless, a fusion explanation that combines anthropological, biological and psychological elements within an evolutionary understanding of religion paints a realistic picture of how religion evolved. Religion includes cultural benefits in forming cohesive societies, as well as fulfilling the human neurological urge for meaning. It evolved as a complex, adaptive system involving many components. Therefore, my proposed model of religion, using the work of Sosis and others, would postulate that it is a phenomenon that emerged due to other fitness-enhancing features, but which inhabits an incomparable location, making it uniquely beneficial to humanity and ensuring its continued success. I am aware that I have surveyed only the most significant theories, not every possible alternative, so despite the strength of my synthetic hypothesis it is far from the only option. But the precise details need not be correct in order to evidence the fundamental principles at play. Namely, it is evident that religion is explicable without supernatural justification. Moreover, religion's existence is seemingly unrelated to its objective truth value, with none of the accounts encountered here making such a connection. These conclusions carry significant weight because they answer vital questions of importance in later chapters, and the thesis overall.

[184] For more on the supposition of secularisation and its interactions with CSR, see: F. LeRon Shults, *Practicing Safe Sects: Religious Reproduction in Scientific and Philosophical Perspective* (2018). pp.225-49; Ara Norenzayan, "Theodiversity" *Annual Review of Psychology* (2016). pp.14-5.

Chapter 3:
Justifying Religious Justification

My thesis investigates Evolutionary Debunking Arguments as part of an Evolved Epistemology. EDAs can have powerful consequences but are often stymied by their imperfections. Chief among those is that they pay too little attention to the crucial matter of justification in their attempts to undermine religious belief. Equally, my eventual argument challenges the justification of religious beliefs by utilising lessons from failed debunking arguments and knowledge of humanity's evolutionary history. Hence, due to the future direction of this thesis, it is invaluable and inescapable that the justification of beliefs be discussed in depth. This chapter, by exposing the various models of justification available, will be vital later, when discerning whether EDAs or evolutionary epistemology can succeed (premise 5 of my argument especially). It concludes this first section, in which key semantic, scientific, and now philosophical context has been appreciated.

Before considering religious justification, I will begin with brief, general reflections on the field of epistemology, and its relation and traditional application to philosophy of religion. Then, I will explicate contemporary theories of justification: internalism and externalism. These inform modern religious justification. I will evaluate the consequences of adopting either epistemological model and argue for the usage I pursue in this thesis. This chapter's line of argument is conciliatory, not provocative. Despite comparing relative merits of epistemologies, my aim is not to adjudicate as to which method of conferring justification is the correct one, partly due to space constraints. Rather, the position that I propose and defend is that understanding gleaned from the evolution of religion and EDAs is relevant for the justificatory status of religious beliefs. Most theories of justification ought to worry, to varying extents, about the reliability of belief-forming faculties. While the specifics of one's model of justification are thus ultimately immaterial, one must recognise what justifies a belief to know how, precisely, evolved epistemology affects it. Although I find internalism a preferable model of justification to externalism, the dichotomy is somewhat false for the purposes of this thesis. Therefore, this chapter asserts that different epistemological models require different approaches from theories of belief formation, yet most models are in principle affected by evolutionary insights.

Justification and Knowledge

I discussed epistemology in broad terms in the introduction but certain facts bear repeating, to make plain the focus of my enquiry. Questions of belief are as old as philosophy itself.[185] Historically, much attention has focussed on knowledge particularly- what converts any ordinary, given belief into *knowledge*? Significant contributions were made by Plato, René Descartes, David Hume and John Locke, a veritable who's who of the

[185] Within the opus of western philosophy, Plato, as is often the case, opened much of the discussion on questions of justification and knowledge. Plato, *Theatetus*. Translated by John McDowell (1973). §201-6.

philosophers' hall of fame.[186] In the 20th century the metre of epistemological dialogue changed. 'Knowledge' was problematised in and of itself as a property of beliefs, most notoriously by Edmund Gettier in his short but ground-breaking piece on problems with the classical view that knowledge constitutes 'justified true belief'.[187] The essence of his paper claims that there are certain scenarios (that came to be known as 'Gettier cases') wherein a person can have a justified belief that is also true, but which does not seem to be a case of 'knowing' (these are typically situations when the belief is true by coincidence).[188] Gettier cases prompted plentiful discussion of redefining knowledge, with which this thesis is not concerned.[189] Still, dominant philosophical opinions evidently hold that justification is an important element of knowledge, even if other conditions are required.

Timothy Williamson proposes 'knowledge-first' epistemology, where knowledge is in itself an irreducible mental state that must, due to its *sui generis* nature, be approached directly and uniquely.[190] Typically the conditions for knowledge that Williamson sets out are similar to the conditions for justification that we will examine. Thus, for my purposes, focussing on justification rather than knowledge is sufficient.

One note on truth, before proceeding to justification: one's theories of truth can be realist or anti-realist. That is, what makes a belief true can be mind-independent or mind-dependent. It is popular within natural theological circles to state that truth is real and objective, i.e. there is a state of affairs with which propositions either correspond or not, regardless of the mental states or beliefs of the person who holds them. If this is not the case, then religious realism cannot stand, so there is much utility in such an assumption.[191] Hence, this thesis operates under a realist conception of truth, where an evolutionary epistemology is most likely to have a serious impact. As explained in the introduction, I am concerned, for the purpose of this investigation, with whether a believer's beliefs are *justified*. If a believer is justified in believing whatever he or she believes, then the believer is rational, even if beliefs are not technically 'known' or 'true'.

Justification has been defined, somewhat tautologically, as whatever condition converts a belief into being a justified belief. In the epistemic sense, this typically means the reasons that one might have for being able to defend a belief's rationality. The two major theories of justification focussed on here are internalism and externalism. An historically popular

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[186] René Descartes, *Meditations on First Philosophy* (1986). e.g. p.43; David Hume, *An Enquiry Concerning Human Understanding* (2014). e.g. sections 2 and 3; John Locke, *An Essay Concerning Human Understanding* (1960). Especially book 2.

[187] Gettier. "Is Justified True Belief Knowledge?" (1963).

[188] Ibid. p.2.

[189] For more on this subject, see: Julien Dutant, "The Legend of the Justified True Belief Analysis," *Philosophical Perspectives* (2015).

[190] Williamson. *Knowledge and its Limits.* (2000). Williamson describes "knowledge as a mental state which constitutes the evidential standard for assertion and belief" (p.11), maintaining it is a state of mind that has no more basic concepts contained within it (p.33).

[191] As an example of a religious anti-realist see: Don Cupitt, *Taking Leave of God* (1980). For a response, also see: Rowan Williams, "'Religious Realism': On Not Quite Agreeing with Don Cupitt" *Modern Theology* (1984).

view of knowledge and justification, posited by many of the heavyweight thinkers enumerated above, can be termed 'Classical Foundationalism'. As epistemologist Laurence BonJour describes it, foundationalism is the view wherein: "justification is claimed to rest on a foundation of 'basic beliefs', beliefs that are alleged to be justified or at least epistemically acceptable without that justification or acceptability being itself dependent on inference from other beliefs (or on anything else that would require justification)."[192] All other beliefs then sit upon these sound foundations of basic beliefs, justifying themselves by reference to them. The clearest example of such a theory comes from Descartes, who defeated sceptical doubt by beginning with clear certainties that appeared to be indisputable, before justifying other beliefs in relation to those certainties.[193] G. E. Moore sets out another apparent example of this model when claiming that he can justify with certainty the belief that there is a hand in front of him because such a belief appeared to him without inference or the possibility of doubt.[194]

Classical Foundationalism is an example of internalism. Richard Feldman reasonably defines internalism by saying: "Epistemic justification depends entirely on elements that are internal to the believer's conscious states of mind, where these states are at least in principle accessible to conscious reflection."[195] The key concepts to parse from this definition are that justification of a belief, on internalism, requires something of the internal mental states of the being holding the belief. What is required of these states may vary. The other important point is that the being must have some form of access to the mental states in order to use them as justification. Foundationalism fulfils this definition because the justification of a belief, according to its principles, rests on mental states that are available to a believer's consciousness, which are also entirely internal. Descartes believes '*cogito ergo sum*' because he has the mental state of thinking '*cogito ergo sum'* is indubitable. Moore believes 'I have hands' because he has the mental state of thinking 'I have hands' is certain. And so on.

Thus far, the focus has been on historical examples of justification within the philosophical field of epistemology. Now, however, I turn to see how debates about justification emerge in philosophy of religion specifically. The history is similar, as thinkers such as Plato, Descartes, and others addressed epistemology partly within a context of theism. Internalism and externalism remain the two primary models, as will be seen in depth later. Religious beliefs are largely treated in the same way that other beliefs are treated, but there are certain arguments that apply solely to religious beliefs. The dominant strands of thought are externalist reliabilism of various flavours (from Plantinga, William Alston, and others) or evidentialism (espoused by Richard Swinburne and others).

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[192] Laurence BonJour and Ernest Sosa, *Epistemic Justification: Internalism Vs. Externalism* (2003). p.14.
[193] Descartes, *Meditations* (1986). Second Meditation.
[194] G. E. Moore, "A Defence of Common Sense" in *Contemporary British Philosophy*, ed. J. H. Muirhead (1925).
[195] Richard Feldman, "Bonjour and Sosa on Internalism, Externalism, and Basic Beliefs" *Philosophical Studies* (2006). p.1.

Evidentialism is based on internalist foundationalism and was broadly thought to be the correct manner of treating religious justification until the later 20th century. It begins similarly, with Descartes, whose foundationalism demonstrated to him that God, not just he, exists. Aquinas believed that the justification of some religious beliefs used evidence accessible to a believer's rational mind.[196] Implicitly, many philosophers who criticise theism accept evidentialism, as they assert reasons why one should *not* believe in God.[197] Natural Theology is thus largely based on internalist evidentialism. 'Evidentialism' is a loaded term that requires clarification, however. One possible meaning is that religious beliefs *must* have evidence in the form of rational argument, otherwise one cannot hold them. This meaning affects the roles of faith and reason in religion, but will not be used in this chapter. Instead, I understand evidentialism strictly epistemologically, where it is an internalist, foundationalist position that states evidence is necessary for a belief to be justified; evidence consists of mental states that give an indication of the world.[198] The former kind of evidentialism rejects the notion that a strong sense that God exists is sufficient evidence for His existence, absent rational argument. Epistemological evidentialism accepts that the believer has an internal indication of the state of the world that justifies his or her belief that God exists.[199] One can of course be an evidentialist in both the former and latter senses, as indeed some abovementioned theologians are, but the positions are distinct and should not be confused.

Contemporary Approaches

Due to a number of difficulties with the internalist, foundationalist paradigm, alternative models of justification were proposed, especially in the latter half of the 20th century. This led to the major alternative to internalism, externalism. Externalism, arising as it did in reaction to internalism, could simply be described as 'the negation of internalism'. This partly suffices as a description, implying as it does that the internal is not sufficient (and so something external is needed for justification). Yet Ernest Sosa, one advocate of an externalist position, gives a more precise definition, saying that externalism is the view that "When a belief is epistemically justified, that is because it comes from an epistemically, truth-conducively reliable process or faculty or intellectual virtue."[200] This definition might seem oddly specific, focussing as it does on something reliable producing the belief. The specificity is influenced by the fact that most popular propositions of externalism utilise some form of reliability metric. The important point to note is that, on

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[196] As Brian Davies puts it in describing Aquinas' philosophy: "reason can explain why certain things said of God by believers are true." Brian Davies, "God" in *The Cambridge Companion to the Summa Theologiae*, ed. Philip McCosker and Denys Turner (2016). p.2.

[197] To provide just two examples of this common phenomenon: Nicholas Everitt, *The Non-Existence of God* (2004); J. J. C. Smart and J. J. Haldane, *Atheism and Theism* (1996).

[198] Trent Dougherty, "Introduction" in *Evidentialism and Its Discontents*, ed. Trent Dougherty (2011).pp. 4-5.

[199] For further discussion on the various grounds that evidentialism in philosophy of religion allows, see: Evan Fales, "Making and Breaking Faith" in *Religious Faith and Intellectual Virtue* ed. Laura Frances Callahan and Timothy O'Connor (2014); Michael Bergmann, *Justification without Awareness: A Defense of Epistemic Externalism* (2006).

[200] BonJour and Sosa, *Epistemic Justification. (*2003) p.109.

externalism, whatever justifies a belief is (unsurprisingly) *external* to the believer, meaning there is no reliance on mental states, as in internalism.

Externalism arose specifically because of its potential to offer a more cogent way of justifying beliefs than potentially circular foundationalist logic. Externalists broadly object to the idea of basic beliefs which support the internalist structure but require no justification themselves. One of the major externalist models of justification is reliabilism. Different versions of this are presented by Sosa and Alvin Goldman, but the essence is the same in each case. On a reliabilist picture, justification is conferred to a belief only if that belief is produced by a process that can be termed reliable.[201] There remains an interest in truth, because externalism is concerned with whether external factors reliably produce true beliefs. But that interest is externalist, because the process that produces the belief is outside one's mental states. The nominal strength of this view over internalism is that there is not a potentially problematic chain of justification. One has a far simpler question to ask- is the process that created the belief reliable? By making the subject of justification external, a veneer of objectivity can be given to one's epistemology, as opposed to internalism, which is (often avowedly) subjective.

Contemporary internalists do exist, however, such as Bonjour and Richard Swinburne. Swinburne defends evidentialism over a series of recent works, arguing that introspection based on evidence is what makes beliefs rational or justified.[202] People can of course have different evidence sets, which explains why they have different beliefs, because what they believe based on introspection is different. Swinburne regards the theory of evidentialism as having the important virtue that one can better one's rational position, unlike externalism. Hence, he states: "Any pure externalist theory of warrant or justification makes the particularity of our beliefs something to which we have no access, and so something which we cannot take into account in seeking to improve ourselves."[203] Laura Buchak is another internalist, who adds that rational belief ought to be based on mental states to which one can assign high credence. This means justification of a belief is dependent to some extent upon the situation in which the believer finds him or herself, and the evidence to which he or she has access.[204] A strong audience persists for internalist evidentialism in the wider philosophical field of epistemology, despite internalism's rise.

Modern epistemology of religion displays a symmetry with broader philosophy, as recently forms of externalism have emerged and thrived, in opposition to internalism. Evidentialism, by adopting the internalist position, must accept the various problems attendant with that worldview. Indeed, the most influential philosopher of religion proposing an externalist position, Alvin Plantinga, posits that "CF [Classical Foundationalism] seems to be self-referentially incoherent", because there are no

[201] Goldman, "Reliabilism." (2012).
[202] Richard Swinburne, *Faith and Reason* (2005). p.43.
[203] Ibid. p.75.
[204] Laura Buchak, "Rational Faith and Justified Belief" in *Religious Faith and Intellectual Virtue* (2014). pp.6-10.

propositions that justify it, which pass the test that it itself sets.[205] This is the classic externalist challenge against the alleged circularity of foundationalism. Plantinga dismisses the need for evidence, as any attempt to use it will result in an incoherent epistemic position. Instead, Plantinga proposes that reliable processes suffice for justification of religious beliefs.

The manner in which Plantinga defends his reliabilist position is somewhat unique and cannot be separated from his theology. The first key point is that Plantinga believes theistic beliefs of the kind 'God exists' or 'God loves me' are properly basic beliefs.[206] They are basic because they do not need to be justified by relation to other propositions, and are properly so because Plantinga believes if God exists, He would instigate basic beliefs about Himself in humans- they thus stem from a reliable external process. Plantinga introduces the concept of 'warrant'- a belief has warrant if it is the product of a faculty functioning in its proper way. Warrant is for Plantinga what distinguishes knowledge from true belief.[207] For our purposes, warrant can be treated as equivalent to justification. This definition of warrant is notably focussed on the correct functioning of a belief-producing faculty. For Plantinga, then, justification is a reliabilist matter, meaning that religious beliefs do not need internal, evidential justification dependent upon states of mind, as long as they are produced by a properly functioning faculty.

The main difference between a basic belief and a properly basic belief is in the reliability of its production. Plantinga contends that religious beliefs such as 'God exists' are *properly* basic because if God exists, then He would give us a faculty to produce true religious beliefs. This means that if theistic beliefs are true, they are necessarily properly basic. Plantinga achieves basic religious beliefs through the use of a notion borrowed from the influential protestant John Calvin- the *sensus divinitatis* (literally, 'sense of divinity'). The sensus divinitatis is specifically designed by God to furnish theists with their strong intuitions that God exists. To give an idea of how the sensus divinitatis fits with other, more traditional faculties, Plantinga states that "the sensus divinitatis resembles the faculties of perception, memory, and a priori knowledge" in the way that it produces basic, unquestionable beliefs.[208] Despite that apparent similarity between Plantinga's epistemology and foundationalism (both utilise unshakeable, foundational beliefs), Plantinga's epistemology differs insofar as it is focussed on the production of beliefs rather than their results. The key term in the prior quote is "faculties", stressing that faculties of perception, etc. are reliable and thus can justify. The same applies to production of religious beliefs, which if generated by the sensus divinitatis are properly basic, as the key indicator of justification is production by a reliable faculty.

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[205] Alvin Plantinga, *Knowledge and Christian Belief* (2015). p.15.

[206] Ibid. pp.31-9

[207] Plantinga, *Warrant and Proper Function* (1993). Plantinga explains that beliefs have warrant if they have been produced by properly functioning, often-successful faculties. He views justification as a concept that is typically ascribed to people rather than beliefs. pp.46-7.

[208] Plantinga, *Knowledge and Christian Belief*. p.35.

Building upon this area of thought in a subtly different way, William Alston is another member of the Reformed Epistemology movement who asserts the basicness of religious beliefs. The key difference between his and Plantinga's models is that Alston is less reliant upon a sensus divinitatis, taking a more holistic approach to justification. He surveys various 'doxastic practices', his term for human belief-forming domains. Examples of doxastic practices he considers are perceptual faculties and Christian Mystical faculties. A doxastic practice is a common method people use to form beliefs, and Alston holds that they are central to justification. Hence his statement that "a mode of forming beliefs is only justificatory if it is reliable".[209] Perceptual doxastic practices form perceptual beliefs, while Christian Mystical doxastic practices form what Alston terms M-beliefs- these convey the appearance of God to a believer; they refer generically to any subject's immediate and convincing perception of God.[210] Alston's objective is to show that the doxastic practices that form M-beliefs are reliable, so that M-beliefs themselves can be said to be justified.

Alston's epistemology relies upon successfully drawing a parallel between the way in which perceptual beliefs are formed and the way in which M-beliefs are formed. He assumes that our beliefs based on the senses are reliable, because if we lose such beliefs our scepticism becomes overwhelming. That assumption is then used to investigate whether the perceptual doxastic practice can be non-circular. His central argument is that without independent grounds for justifying perceptual beliefs, to which we do not have access, any means of claiming that they are reliable will be epistemically circular. He argues this on the basis that to ascertain that a doxastic practice typically produces truths, one must assume the reliability of perceptual beliefs in the first place.[211] Alston then argues that, despite circularity, "for any established doxastic practice it is rational to suppose it is reliable, and hence rational to suppose that its doxastic outputs are prima facie justified."[212] This leads him to his ultimate flourish, claiming that if one wants to attack the doxastic practices that produce M-beliefs, one is bound to attack the practices that generate perceptual beliefs too. Given that the latter beliefs seem to be justified, the former form are also, by the same logic, justified. In terms of epistemology, religious beliefs (at least those that fit within what Alston would call M-beliefs) are justified because they are produced by a reliable process, though that process is not explicitly a sensus divinitatis.

To distil the thesis of Reformed Epistemology to a singular proposition about how religious beliefs are justified is possible, given the verisimilitude between Alston's and Plantinga's projects. Reformed Epistemology is decidedly externalist, and in particular reliabilist. In opposition to evidentialist models of religious justification, the mental states of a believer are not a relevant concern for a belief's justification. Hence, a religious belief is justified according to Reformed Epistemology only if it is produced by a process that reliably produces religious truths, whichever form that process might take. This model stands in contrast to the evidentialist position, under which a belief is justified only if a

[209] William Alston, *Perceiving God: The Epistemology of Religious Experience* (1991). p.6.
[210] Ibid. p.3.
[211] Ibid. pp.103-7.
[212] Ibid. p.183.

believer's mental states supply him or her with evidence to believe it. The debate over justification of religious beliefs clearly mirrors the ongoing debate over other classes of beliefs in wider epistemology, but the possibility of God creating humans, and causing our knowledge of Himself, does alter the traditional internalism/externalism dichotomy. This dichotomy itself emerged largely since the second half of the 20th century, overhauling previous models and making justification a much-disputed area of philosophy.

Debates between Internalism and Externalism

Having provided an approximate summary of the state of epistemology, including the way it pertains to religious beliefs, both historically and to this moment, I will now entertain major arguments from internalists and externalists that their model of justification is superior at capturing what it means for any class of beliefs to be 'justified'. The major problems of the traditional model, internalist foundationalism, are that the basic beliefs used as foundations seem to be difficult to justify in and of themselves, and a coherent path to justify the whole system of internalism by appeal to foundational beliefs is unclear.[213] Nonetheless, there remain certain philosophers who are keen to preserve and defend the traditional model, including the aforementioned Laurence BonJour.

BonJour's defence is based first and foremost on the lack of plausible alternatives, he says "neither of the two main dialectical alternatives to traditional internalist foundationalism is acceptable as the most basic account of the justification of empirical beliefs" (BonJour and Sosa focus on empirical beliefs in their work to be discussed here, but the arguments are transferable). Indeed, BonJour's primary critique of externalism, to which he returns repeatedly, is that it does not answer the fundamental question of what it is that allows a believer to say his or her belief is justified. Externalism, for BonJour, does not answer individual scepticism any person might have: "The basic question is whether *I* have good reasons for thinking that *my* beliefs are true (and, if so, what forms those reasons take)."[214] By outsourcing whatever confers justification from the believer's mind, it seemingly becomes impossible to say one has individuated justification for one's beliefs.

As a result of his counter to externalism, BonJour attempts to rehabilitate internalism, in particular by finding a solid foundation upon which it can rest. The dilemma that he needs to avert is that if basic beliefs (those that form the foundations) are propositional (i.e. take the form of a statement that says something is the case), then they would seem to need justification, whereas if they are not propositional then they do not need justification, but are ineffective as foundational building blocks. The manner in which he seeks to do this uses Kantian and Humean notions of perception. Treating a belief such as 'there is a tree', formed by looking at one, as a first order belief, BonJour postulates we have non-propositional second order beliefs *about such a belief*.[215] One thus believes something about

[213] BonJour and Sosa, *Epistemic Justification.* (2003). pp. 15-7.
[214] Ibid. p.174. Emphasis BonJour's.
[215] BonJour and Sosa. *Epistemic Justification.* (2003). p.69.

the existence and content of the belief 'there is a tree' in a non-propositional way. That second order belief can be used as justification for the first order belief such that, though one's perceptual beliefs are not themselves basic, they can be founded upon basic beliefs. This may seem at first a blatant attempt to cheat the prohibition on basic, propositional beliefs, but it has merit. BonJour claims everyone has these so-called basic apperceptions (perceptions about other perceptions), without questioning them. BonJour's use of apperception could do the necessary work of justifying our propositional beliefs, thus circumventing rather neatly the problem of grounding basic beliefs of foundationalism.

There are numerous objections to this new development of internalism. Ernest Sosa's critique of BonJour's foundationalism has two prongs: 1) that BonJour fails to avoid the incoherence suffered by previous iterations and 2) that we cannot know when basic beliefs are unjustified on a foundationalist model. The first relies on the notion that apperception itself does not help BonJour, because if it carries the necessary information then it must be propositional in order to do so. Thus it would require some justification, so fails to escape from the coherence trap.[216] The second argument uses a popular '48 speckles' example: if you see a speckled hen for an instant, do you see that it has 48 speckles? More to the point, are you justified in saying that the hen has 48 speckles, even though you are uncertain, despite having had the visual stimulus (albeit briefly)? Sosa uses this counter-argument to the internalist model by stating that whatever mental state one gleans after seeing the hen is likely to remain, despite it being unlikely to be true (one will most likely decide on a number of speckles between 40 and 55, but no more accurate than that).[217] He prefers a theory of justification that has more sensitivity for providing true outcomes, because then one's educated guess of how many speckles the hen has is not justified, without evidence that the correct answer has been given. The debate on BonJour's new foundationalism continues, with potentially serious consequences for internalism or externalism.[218]

Believing he has defeated BonJour's internalist model, Sosa presents a form of virtue epistemology, whereby one's beliefs are justified if they are produced by a process that is epistemically worthy, which typically means that it produces truths reliably.[219] 'Reliable' here means that the process tracks truths accurately. Virtue epistemology is a form of reliabilism. Another noteworthy defence of this model can be found in Goldman's 'process reliabilism'. He sets out consistent rules for justification so that it is clear when any given belief might be justified or unjustified.[220] For him, to do so is far more coherent under externalism, because internalism cannot be entirely internal. By this, Goldman means that external states of affairs always influence whether a belief is justified.[221] The constitution of a person alters his or her ability to justify certain beliefs- a person with a nose can justify

[216] Ibid. Chapter 7.
[217] Ibid. pp.214-6.
[218] For a sample of further debate on the subject see: Feldman, "BonJour and Sosa on Internalism, Externalism, and Basic Beliefs" (2006); Earl Brink Conee and Richard Feldman, *Evidentialism: Essays in Epistemology* (2004).
[219] BonJour and Sosa. *Epistemic Justification.* p.169.
[220] Goldman, "Internalism, Externalism, and the Architecture of Justification." (2012) p.100.
[221] Goldman, "Internalism, Externalism, and the Architecture of Justification." p.108.

scent-based beliefs where a person without one cannot. Moreover, for Goldman the actual state of affairs of the world ought to have an impact on whether a belief is justified. These are necessarily external to the believer's mental states. The main advantages of externalism, then, are that they avoid the issues arising from the foundationalist project, and they seem to recognise the important, external elements at play in justification.

Just as I expounded key counters to the internalist viewpoint, so I will espouse two major lines of attack on reliabilist externalism. The main difficulty that many philosophers express is that reliabilism does not seem to care for *evidence*. If one asks a person what justification he or she has for a belief, under reliabilism the best that he or she can say is 'my belief was formed by a reliable process', rather than espousing a convincing reason specific to the subject matter in question. By shifting the source of justification outside the mental states, externalism seems to take away the possibility of the individual believer finding specific evidence.[222] This difficulty links to the second problem, that externalism may not defeat scepticism about circular foundations any more effectively than internalist foundationalism. The sort of scepticism that demands every source of justification be itself justified, which faces internalism, can also address externalism- what justification does one have for knowing that the processes that produce one's beliefs are reliable? And what reliable or virtuous process would justify beliefs about one's belief-producing processes? Externalism, by removing recourse to internal mental states, faces difficulty if the reliability of a believer's faculties is unknown.[223] Although there are several replies from externalists to these problems, neither side clearly dominates, as both face serious issues.

Both major models have the advantage of providing justification in most instances where one intuitively feels belief ought to be justified. The main differences arise when looking deeper, either at what justifies basic beliefs, or at edge cases where a person seems justified despite an unreliable process. I believe internalism offers a compelling case, thanks to BonJour's fundamental point that externalism fails to address whatever individual unease one might have when questioning the justification for one's beliefs. Nonetheless, I stress that the reader need not be convinced one way or the other by this brief overview of internalism and externalism; both philosophies serve later purposes.

Disputing Religious Justification

Having set out the two most influential strands of thought in general epistemology, it is now worthwhile to look in more depth at religious justification. The above debates importantly influence religious epistemology, which is itself key to later chapters. It is thus crucial to address the matter of religious epistemology for the sake of the thesis, so I will bring it into sharper focus in this sub-section, especially assessing whether any model of justification is in the ascendancy.

[222] Feldman, "BonJour and Sosa on Internalism, Externalism, and Basic Beliefs" (2006). p.5.
[223] BonJour and Sosa, *Epistemic Justification.* (2003). p.28.

Much of the debate on justification of religious beliefs centres on how disagreement ought to be treated. Plantinga argues that a Christian believer has warranted, properly basic theistic beliefs if God exists. To this, Swinburne responds that Plantinga has focussed too much on warrant/justification, forsaking the possibility of saying anything useful in the face of disagreement. He claims: "we cannot in any interesting sense ask whether it is rational to believe that Christian belief has warrant" because for any individual with a strong conviction that God exists, his or her belief is warranted, if God exists.[224] Since the question of God's existence is not one that a person can immediately approach without recourse to the sensus divinitatis, the presumption is in favour of the believer, absent any defeaters. This means that whenever a theist expresses his or her belief that God exists, it will necessarily be justified *for him or her*. Swinburne is dissatisfied with this, because it uninterestingly forbids disagreement concerning whether a believer's conviction is justified. Therefore, the key strength of evidentialism, which Swinburne asserts over Plantinga's reliabilism, is that the evidence believers use to justify their beliefs can hopefully be used to convince others of the veridical nature of those beliefs, leading to justification that expands beyond the personal and deals with differing views.

Besides the generic attack against foundationalism that may trouble Swinburne's position, with which we shall not re-occupy ourselves, Plantinga counters the above criticism specifically. Positive arguments for God's existence, which Swinburne defends, can still be useful under Plantinga's model of justification. A theist can initially have properly basic, warranted belief that God exists, but such belief is not impervious to defeat. Indeed, Plantinga does address numerous possible 'defeaters' for theistic belief formed under reformed epistemology.[225] Defeaters are beliefs, generated by other reliable faculties, which speak against the justification of the basic belief. Arguments for God's existence, Plantinga posits, are useful as 'defeater-defeaters', which restore warrant to the initial belief in God's existence. In this manner, reformed epistemology is not as rigidly hostile to disagreement and counter-argument as Swinburne attests. Nevertheless, it should also be mentioned that Plantinga sees the fact that his model of justification does not rely upon evidence as a strength. It is a feature of the system he has created, not a bug, because Plantinga finds the "best arguments for the public rationality of Christian belief are not particularly successful".[226] He seeks to turn his epistemology's limitations into strengths.

The problem of disagreement is, at its heart, about epistemic irresponsibility- if one believes something due to what one believes is a reliable process, despite disagreement from others, is one being epistemically responsible? This issue is best expressed by what is commonly known as the Great Pumpkin Objection (henceforth GPO). Plantinga himself invented this objection, imagining that it might arise in response to his reformed epistemology.[227] The idea behind the GPO is that if a Christian believer is warranted in

[224] Richard Swinburne, "Plantinga on Warrant" *Religious Studies* (2001). p.4.
[225] Plantinga, *Knowledge and Christian Belief*. (2015). Especially pp.68-121.
[226] Plantinga. "Rationality and Public Evidence: A Reply to Richard Swinburne" *Religious Studies* (2001). p.6.
[227] Plantinga. "Reason and Belief in God" in *Faith and Rationality*, ed. Plantinga and Nicholas Wolterstorff (1983). pp.60-4

believing in God, then a non-Christian could be warranted in believing that 'a Great Pumpkin exists', as long as the Great Pumpkin was imagined to have given humans a faculty for forming true beliefs about it.[228] Thus, if the system Plantinga proposes for adjudicating on justification permits 'silly' beliefs, such as 'a Great Pumpkin exists', then the system is too permissive and should be discarded in its entirety.

The GPO is an intuitively appealing critique of theological reliabilism- it really does seem as though reformed epistemology allows one to believe anything, as long as one can tell a sufficiently convincing story about a reliable process that forms that belief. Plantinga's initial defence against the GPO is that there is a difference between beliefs like the Great Pumpkin belief and beliefs about God, even if it is not explicitly clear what that might be. In the same way that one intuitively can know when a sentence has meaning or does not have meaning, even absent clear reasons to say so, Plantinga argues that theists can intuitively say that a Great Pumpkin belief is not properly basic, while a belief that God exists is.[229] Similarly, the sort of response that Alston would propose to the GPO would be to argue that whatever process formed the Great Pumpkin belief is not a proper doxastic practice, as it is not commonly established in the way that Christian Mystical practices or empirical belief-forming are.[230] This more explicitly distinguishes beliefs about a Great Pumpkin from beliefs about God, which could be an effective strategy for defending reliabilist justification of religious beliefs from the charge of epistemic irresponsibility.

Alston's response works to some extent but unduly seems to privilege methods of forming beliefs that are old over those that are new. One need only peruse any history book to discover countless examples of 'traditional' beliefs that are well-established across many cultures, yet are nonetheless found later to be inaccurate.[231] Plantinga's defence might have greater difficulty in adequately countering the GPO though, averse as it is to comparisons between the sensus divinitatis and other faculties. As Michael Bergmann points out, if one is permitting processes that produce beliefs largely on the basis of how intuitively correct one feels them to be, then one can admit guesswork as a 'reliable' belief-forming faculty.[232] The problem seems to persist that although theists might have an inarticulable distinction between their sensus divinitatis and someone else's guesswork, it is difficult to persuade someone who is unconvinced of that difference, without a specific reason, *why* the GPO fails to mimic the faculties it is meant to defeat. Andrew Moon defends Plantinga on the grounds that the GPO, or attacks like it, must make a normative criticism against the

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[228] Andrew Moon, "Recent Work in Reformed Epistemology" *Philosophy Compass* (2016). p.9.
[229] Plantinga, "Reason and Belief in God." p.66
[230] This sort of defence to the GPO is common, and can also be found in: Kyle Scott, "Return of the Great Pumpkin" *Religious Studies* (2014).
[231] The belief that the Earth was at the centre of the Universe is a classic example, where an entire doxastic practice (for forming astronomical beliefs) was faulty, despite fulfilling the same conditions as modern Christian Mystical Practices, by being well-established and commonly held. Alston would have further objections here, perhaps stating that scientific doxastic practice actually worked as planned, eventually rejecting false beliefs, but we cannot delve further here, as it is ultimately irrelevant to the task at hand.
[232] Michael Bergmann, "Evidentialism and the Great Pumpkin Objection" in *Evidentialism and Its Discontents* (2011). p.7.

whole externalist, reliabilist style.[233] This is a worthy clarification, but for an evidentialist not a daunting prospect. They are content to argue the epistemological norm is flawed, though to do so is admittedly a far more extensive project than many account for, as they must argue against externalism generally, rather than positing a singular objection.

A further point in defence of evidentialism in philosophy of religion is presented by John Greco and Patrick Lee. They see reformed epistemology's merits, but are dissatisfied by its seeming disregard for actual evidence available to a believer. Lee puts the evidentialist counter to reliabilism succinctly, in stating:

> "Epistemic warrant, according to Plantinga, is the proper functioning of cognitive faculties (when their design is aimed at truth and in an appropriate environment). But reflecting on one's beliefs is part of proper functioning. And a belief reflected on cannot have epistemic warrant unless it has evidence for it (not necessarily propositional). Thus, proper functioning implies believing through evidence."[234]

This is rather a clever attempt from Lee to include evidence-gathering within externalism. Likewise, Greco stresses the need for evidence, particularly as modern philosophy of religion is not conducive to asserting one's religious beliefs with certainty- "coherence is needed in 'epistemically hostile conditions,' defined as conditions where one has grounds for doubting the reliability of cognitive faculties".[235] Thus, if a theist thinks his faculties provide reliable theistic beliefs, the secular state of current western society alone ought to give pause for thought, meaning that "it looks as if the use of natural reason is the only thing that *could* improve [a theist's epistemic] position."[236] The challenge is for reliabilism to permit a theist to be justified despite counters, without resort to evidence.

A wholly externalist theory does not seem viable in the face of serious concerns. Equally though, evidentialism may not fully conform to religious epistemology. Notwithstanding issues about coherence that are as applicable here as they were earlier, philosophers of religion raise difficulties with internalism as it applies to theology specifically. John Zeis argues against the comparison between perceptual beliefs and theistic beliefs that some evidentialists draw, pointing out that empirical beliefs have public confirmation criteria.[237] If I say 'there is a wall in front of me', the confirmation of the truth of that belief comes when people see me walk into the wall. There is no such public criterion for adjudicating on the truth of most religious beliefs. Likewise, Linda Zagzebski favours a virtue epistemology view of justification of religious beliefs.[238] She supports this view because she agrees Plantinga has usefully highlighted that: "Our confidence in any suggested

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[233] Moon. "Recent Work…" (2016). p.9.
[234] Patrick Lee, "Evidentialism, Plantinga, and Faith and Reason" in *Rational Faith: Catholic Responses to Reformed Epistemology*, ed. Linda Zagzebski (1993). p.10.
[235] John Greco, "Is Natural Theology Necessary for Theistic Knowledge?" in *Ibid* (1993). p.21.
[236] Ibid. p.24. Emphasis Greco's.
[237] John Zeis, "Natural Theology: Reformed?" in *Ibid* (1993). p.10. Although Zeis, a Thomist, sees importance in evidence justifying religious beliefs, he is somewhat persuaded by Alston's account of the basicness of M-beliefs, though he also extols the virtues of showing that beliefs formed by reliable processes are true (p.19).
[238] Linda Zagzebski, "Introduction" in *Rational Faith: Catholic Responses to Reformed Epistemology*. (1993). p.9.

account of the criteria for justification or warrant or rationality can be outstripped by our confidence that we are rational or justified or warranted in certain particular beliefs." [239]

Ultimately, the question of how religious beliefs *ought* to be justified remains open, and it cannot be settled adequately here. I find evidentialism the stronger thesis of the two options presented, though I can also see the benefits of externalist components within a synthetic framework.[240] The obvious weakness to internalism is in how one justifies its foundations. Equally though, externalism struggles with disagreements and the GPO, which should make some believers uneasy that it is far too permissive an epistemic theory for religious beliefs. As a result, interest in some form of synthesis is keen, with Jeremy Koons an example of this strain of thought. He finds Plantinga's theory lacking insofar as it attempts to make the non-inferential products of the sensus divinitatis properly basic.[241] Koons agrees that having a reliable framework of the world helps one to produce true beliefs, but argues one cannot say that there are properly basic beliefs prior to establishing a theory.[242] This applies to any perceptions that cannot be grounded without a broader theory into which to fit (this somewhat Kantian notion is reminiscent of his transcendental deduction of the categories).[243] For Koons, religious beliefs cannot be properly basic solely due to their origins, so combination of internal evidence and external sources is necessary. Furthermore, from the opposite direction, Laura Callahan and Timothy O'Connor present a virtue-based externalism, but temper this by stressing the importance of evidence.[244]A believer can trust that his or her initial intuitions are reliable, but when beliefs produced by other reliable processes come into conflict with those intuitions, reconsideration is also valid. Justification is thus not a constant property for a belief- once acquired, it can be lost.

The examples in the prior paragraph show that the dichotomy between internalism and externalism is to some extent a false one. Justification can in certain circumstances be more appropriately understood as conferred by a reliable process, while in other situations by

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[239] Ibid. p.12. For more on Zagzebski's well-developed discussion of the justification of religious belief by virtue epistemology, see: Zagzebski, "First Person and Third Person Reasons and Religious Epistemology" *European Journal for Philosophy of Religion* (2011); for more on the complex relationship of faith with justification, see Basil Mitchell's discussion of faith and trust. Mitchell illustrates the tension between faith and evidence extensively and persuasively. He uses the example of theory choice in science, accepting that the analogy will never be perfect, but stating that when there are conflicting scientific paradigms one is forced to choose on the basis of non-evidential reasons (p.74). For that reason, he claims that debate in the Philosophy of Religion is "not amenable to demonstrative argument or appeal to strict probabilities" (p.84), showing the limits of evidential reasoning when justifying religious beliefs in particular. Basil Mitchell, *The Justification of Religious Belief* (1973).

[240] Evidence that there might be compatibility between the two opposing views can also be seen in Matthias Steup's work: Matthias Steup, "Internalist Reliabilism" *Philosophical Issues* (2004); Steup. "Evidentialist Anti-Skepticism" in *Evidentialism and Its Discontents* (2011).

[241] Jeremy Koons, "Plantinga on Properly Basic Belief in God: Lessons from the Epistemology of Perception" *The Philosophical Quarterly* (2011). p.2.

[242] Ibid. pp.9-10.

[243] Immanuel Kant, *Critique of Pure Reason*, translated by Norman Smith (1965). pp.129-75.

[244] Laura Frances Callahan and Timothy O'Connor, "Well-Tuned Trust as an Intellectual Virtue" in *Religious Faith and Intellectual Virtue* (2014). pp.19-20.

internally available evidence for the believer. The discerning factor might often be one's views on natural theology, or even one's theological anthropology (for example if one does not believe in a sensus divinitatis then one is far less inclined to be externalist). While I find defences of evidentialist internalism more convincing, albeit with some externalist additions, there are indubitably serviceable defences of reliabilism too, though again some internalism is often required. The important points to note are that models of religious justification are divided into two main streams, each with numerous proponents and opponents, but the two theories are not necessarily mutually exclusive, and a synthesis view also has its significant supporters.

The Relevance of Justification for EDAs

I have in this chapter expounded the various viewpoints available on justification. I began the endeavour by surveying the broader context of epistemology, including themes pertaining specifically to religious justification. I noted the latter's historical similarities to philosophical ideas, before explaining the current status of debate in contemporary philosophy and theology. After this, I examined some of the strongest arguments for and against the two main theses- internalism and externalism- marginally preferring internalism, despite good arguments on both sides. Plantinga's reliabilist reformed epistemology acted as a contrast to evidentialism, but is also ultimately found wanting. The justification of all beliefs, including religious beliefs, might be best served by some synthesis between dominant theories, though all the major proposals have substantial proponents and arguments in their favour.

The opinions I have stated are not meant to be indisputable, because I appreciate that prior beliefs will significantly affect which theory one prefers. Moreover, there are many elements of the debate which, due to space, I have been unable to cover to the extent that would be required to express an authoritative view. While I prefer internalism with some externalist components, the reader need not agree with my judgement to follow my argument. In concluding, I will indicate where this chapter fits in the framework of the thesis, and why it does not matter which model of justification one prefers when considering evolution's effects upon religious and other metaphysical beliefs.

As will be seen, some evolutionary debunking arguments, and later my argument based thereupon, utilise the notion that the process or faculty that forms a belief ought to be reliable for that belief to be justified. This seems to be a classically externalist position. As mentioned, it is rare for EDAs to state their epistemological standpoints openly before deploying their arguments, but an implicit externalism is evidently popular. If EDAs directly target the reliability of whichever process an externalist uses to justify his or her belief, then it would seem that externalism would be especially vulnerable to attacks from debunkers. It remains to be seen (in chapters to come) whether EDAs can in actual fact target the faculties that externalists utilise as justification *effectively*, but their style of argument is theoretically well-poised to undermine beliefs justified via externalism.

Nonetheless, EDAs, and my own argument inspired by an evolutionary outlook on the generation of beliefs, need not be epistemically one-dimensional. For internalist justification, mental states that can provide evidence are of paramount importance. Yet internalism cannot afford to ignore the provenance of beliefs either. The statement 'my faculties for producing X beliefs are unreliable' can be evidenced internally. It ought then to be used in combination with other mental states to assess the justification of beliefs produced by faculty X. Although the statement is more familiar to externalism, it becomes a (very significant) piece of evidence for internalism too, as it tells an internalist (based on internal mental states) that faculty X beliefs are unjustified, due to being undermined by other internally held beliefs. In future chapters, when evolutionary arguments critique the faculties that form beliefs, they will thus retain relevance for internalism, albeit for a different reason than for externalism. As long as an internalist believes, reasonably, that faculties or processes that produce certain classes of beliefs exist, the assessment of the reliability of these faculties ought to become a key part of his or her internal evidence base. Therefore, the revelations that evolutionary arguments produce about the sources of beliefs ought to interest internalists too.

The reliability of religious, ethical and perceptual belief-forming faculties is directly relevant for justifying beliefs as long as the faculties humans use to form beliefs affect the veracity of the beliefs they produce. I take the latter to be an uncontroversial point- my faculties of sight may be either faulty or reliable (or somewhere in between), as might be my faculties of arithmetic or morality. In all three cases, if the faculties that produce the beliefs malfunction, then I am highly likely to develop false beliefs, whether these are false beliefs about what I see, false beliefs about maths, or false beliefs about morality. There should, thus, be some consideration given to the reliability of faculties, regardless of one's model of justification. Questioning the reliability of faculties is more obviously pertinent to an externalist, but with only a small extra step is just as pertinent to internalists too.

In conclusion, this chapter has explained the dominant trends in epistemology and justification, with the goal of improving the suitability of discourse surrounding evolutionary epistemology. By getting the measure of models of justification, I can tailor the arguments in chapters to come to be well-suited for fitting the epistemologies they target, and point out where models of justification are insufficiently comprehended. The primary conclusion from this chapter is that any dominant theory of justification that does indeed want beliefs to be justified ought to care about the faculties that produce beliefs. Hence, both internalism and externalism will find themselves susceptible to queries about faculty reliability, though for different reasons. That conclusion will be essential, particularly in evidencing premise 5 of my argument in chapter 7, which demonstrates the scope of evolved agnosticism. Appreciating what makes a belief justified has thus given encouragement to the view that evolutionary arguments have valuable insights to offer into whether certain beliefs can be justified, regardless of one's prior beliefs about the exact epistemological criteria at play.

Section 2

Evaluating EDAs

Chapter 4:
Aetiological Evolutionary Debunking Arguments

Finding a natural explanation of religion is no simple task. As described in chapter 2, despite numerous attempts from the fields of psychology, biology and anthropology there is no definitive account. Still, many philosophers of religion do not let that uncertainty perturb them and happily assess the potential consequences of natural explanations of religion. Indeed, given that groundwork established earlier, it seems perfectly reasonable to move to questioning the philosophical effects of evolution on religion. Philosophers who do so tend either to assume that eventually an approximately complete version of events will emerge, or they base their arguments on the most well-evidenced components already available. Those options seem sensible, especially in light of the strength of evolutionary accounts of religion detailed in chapter 2, and the clear epistemological interest in the origins of belief discerned in chapter 3. Beginning this second section of my thesis means entering the realm of EDAs against religion, which I will evaluate in turn. First, I will address those arguments most reliant upon natural explanations of religion. These are what I term Aetiological Evolutionary Debunking Arguments and many of them have similar structures and goals.

To begin, I present a sample structure of Aetiological EDAs:

> Premise 1) It is possible to explain religion naturalistically.
> Premise 2) If religion has a naturalistic explanation, then religious beliefs are unlikely to correspond with supernatural reality.
> Premise 3) For religious beliefs to be justified, they must accurately correspond with supernatural reality.
> Conclusion) Religious beliefs are unlikely to be justified.

The most controversial element of this argument is premise 2, because the conclusion follows logically from the premises; premise 1 is at least worth entertaining as a possibility; and premise 3 is a fairly uncontroversial epistemic premise that ensures the focus is on the justification of religious beliefs, as maintained earlier. There are different methods of motivating the second premise, but all presentations of Aetiological EDAs resemble this broad structure to some extent.

In this chapter, I will consider the strongest Aetiological debunking arguments against religion, looking at the key formulations of such EDAs. I will then show where each type of argument has faults, before drawing broader conclusions from their failure to the fate of EDAs overall. The major forms of Aetiological EDA that will be discussed in this chapter are those that look at religion as 'projections', those that primarily utilise 'explanations', and the more recently developed arguments based on 'sensitivity'. All Aetiological EDAs are overly simplistic and afflicted by many similar problems, but it is nonetheless

instructive to guide oneself through each of them to learn what useful points are made. I will tackle questions towards the end of the chapter concerning whether the nature of explanations is related to the viability of EDAs, and what links have been revealed between truth-claims and origins.

Before addressing the specifics or assessing the merits of Aetiological EDAs, it must be clear what is to be discussed. This is particularly important here, as novel research means different scholars use different terms to refer to similar things. The types of debunking arguments to be covered in this chapter include those that are based on naturalistic explanations of the causes of religion, which move from such explanations to debunking religion's truth. There are numerous ways of doing this, but they all have in common a necessity to explain religion in some way. The term I have chosen to describe this family of arguments is 'Aetiological'. This is not a common term in EDA scholarship (some prefer 'explaining-away', others 'undermining'), but it captures the essence of a range of opinions. This is because 'Aetiology' refers to the attribution of causes, especially expressed as an explanation. It should be clear when going through the Aetiological EDAs that each relies upon a specific aetiology of religion, thus my umbrella term is useful. Moreover, one of the landmark papers on the subject of EDAs, by Kahane, uses the word 'aetiological', so there is precedent behind the usage of the term.[245] Aetiological EDAs are common but are proposed in numerous ways, and do not all fail for the same reasons. I plan to examine how different forms within the broader heading fare under scrutiny.

'Projections' Aetiological EDAs

As has been charted well by Helen De Cruz and others, EDAs, particularly Aetiological ones, have a long history.[246] Two major proponents of 'projections' Aetiological EDAs are David Hume and Sigmund Freud. These arguments foreshadowed later attempts at debunking religion but were not developed in a sophisticated way. In fairness to both Hume and Freud, neither placed especial weight upon their Aetiological EDAs. Yet each presented the ideas that formed the beginnings of Aetiological EDAs and wished them to be taken seriously. Furthermore, New Atheists such as Richard Dawkins and Daniel Dennett have outlined arguments that mirror this style in their efforts to attack religion.[247] Hence, we cannot permit these views to go unchallenged. I have focussed on the former two thinkers as their presentations are more substantial, but will also briefly show the parallels with the New Atheists' later attempts.

[245] Kahane, "Evolutionary Debunking Arguments" (2011). p.3, 6.
[246] Helen De Cruz, Martin Mahner, and Johan De Smedt, "Evolutionary Approaches to Epistemic Justification" *Dialectica* (2011). p.5; De Cruz and De Smedt, *A Natural History of Natural Theology* (2015) Ch. 9.
[247] Dawkins, *God Delusion*. pp.139-44. Dawkins argues that knowledge of evolution of religion essentially makes the supernatural explanation of religion superfluous and as such, wrong. Daniel Dennett, *Breaking the Spell: Religion as a Natural Phenomenon* (2006). As implied by the title, Dennett's work aims to show that religion is natural and, from that evidence, demonstrate its falsehood. p.17.

The influential psychoanalyst Sigmund Freud's writings on religion perfectly illustrate the essence of this type of EDA. Freud wanted to fit religion into his broader psychological analysis of humanity and did so over a number of works, often polemical in their derision for religion.[248] The light-hearted thoughts underpinning his overall theory were that life is hard and man is violent. Accordingly, for Freud religion remedied both of these problems, by giving ultimate meaning to the difficulty of life and restraining the more violent excesses of mankind. Religion also causes conflict, however, because it brings civilisation while increasing misery due to the overbearing sense of guilt that every person feels.[249] One illuminating remark by Freud is: "the religions of mankind must be classed among the great mass delusions".[250] Throughout his writings it was made intensely clear that religion is certainly not *true*, but occupies an important place in the human psyche in providing wish-fulfilment and civilisation.[251]

Another who offered similar theories of human invention in his work is Scottish Enlightenment thinker David Hume, who attended to this matter in *The Natural History of Religion*. He first provided empirically doubtful theories of the genesis of religion, such as the necessary development of monotheism from polytheism, and the universality of human conceptualisations of an invisible, powerful deity.[252] Alongside these, he added broader statements concerning the emotional, irrational nature of religion. In a similar way to Freud he was clear that religion was practically useful and was also aware that religion could for that reason continue to be held for the sake of community cohesion, regardless of truth. Indeed, Hume seemed fairly convinced that his natural history was a rationale for rejecting religion's truth, partially because of the variety of religious beliefs held through time, but more due to his belief that "Ignorance is the mother of Devotion".[253] By claiming to find the origin of religion in ignorance and projection of desires onto an ambiguous world, Hume postulated that his causal explanation made religion less likely to be true.

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[248] Sigmund Freud, *Moses and Monotheism,* translated by Katherine Jones (1967). p.91.

[249] Freud, *Civilization and Its Discontents*, translated by Joan Riviere (1994). p.41, 110, 131.

[250] Ibid. p.51

[251] Ibid. p.39, 148. Freud drew many of his ideas concerning wish-fulfilment from Ludwig Feuerbach's work. Feuerbach was a 19th-Century German writer who argued that to study theology is to study anthropology, as religion is a man-made phenomenon. He also posited that religion came about as wish-fulfilment. Although he does not precisely spell out an EDA based on this, Feuerbach certainly implies that this wish-fulfilment is *all* that religion can be taken to be. He states: "what is prayer but the wish of the heart expressed with confidence in its fulfilment?", demonstrating that idea, later taken up by Freud, that religious belief is based on the fulfilment of wishes and the projections of mankind. Ludwig Feuerbach, *The Essence of Christianity*, translated by George Eliot (2008). p.178. See Part 1, Sections XI-XV for theories of wish-fulfilment. For more on Feuerbach, see: Marx Wartofsky, *Feuerbach*. (1977). Especially Chapter IX for 'religion as self-alienation'. Karl Marx toyed with similar ideas, though he did not write systematically on religion as Feuerbach did. He proclaimed that religion was a misguided protest against suffering. For Marx religion is a false coping mechanism that represents potential good. For more on Marx, see: Karl Marx, *Marx on Religion*, ed. John Raines (2002). Especially part IV.

[252] David Hume, *The Natural History of Religion* (1976). p.34, p.64.

[253] Ibid. p.86.

The key point to draw from writings by these two great thinkers on the origins of religion is that they are not merely poor naturalistic explanations. Freud and Hume's claims are not equivalent to claims that humans are religious because they have ten fingers and ten toes. That is merely a poorly evidenced claim (with which Freud and Hume are unfortunately replete). But the philosophical addition that both make to their natural histories is what constitutes the Aetiological EDA. That philosophical claim is based in the notion that, having now explained religion, the explanation in itself shows the untruth of its subject matter. Robert Nola describes this form of argument as "projectionist", because religion is equated with a projection of other factors in the mind and its truth value is thus dismissed.[254] The critical move made by both Freud and Hume is from the scientific claim 'religious beliefs are a projection of the mind' to the epistemic one 'religious beliefs are unjustified'. This requires the intervening step claiming that projections of the mind, particularly religious ones, are often unjustified. Both offer, as primary defence, that religious beliefs resemble psychological fantasies, and need not be true to be so prevalent; therefore their rationality can be discarded, because we now know better why they persist.

The simplest way to dismiss such theories would be to attack their scientific validity. After all, if an argument explicitly requires a viable naturalistic explanation to function, then removal of that explanation is a perfectly apt response. Insofar as Freud's and Hume's theories are empirically untrue (or, being generous, need major development), then, their EDAs collapse from the outset. Still, the 'projectionist' Aetiological EDA that they propose is not really dependent upon the exact scientific explanation *they* proposed. As aforementioned, Freud and Hume go beyond scientific exposition, to philosophical argument. Given developments in fields studying evolution of religion since Freud's and Hume's times, it is likely that modern scientific explanations are more suitable for explaining religion than anything the two thinkers speculated. At this chapter's beginning I made clear that many of the arguments to be considered would require the assumption that a natural explanation is possible or available. The arguments that Freud and Hume set forth can now be evaluated in the context that there is or could be an explanation of religion that fulfils the requirements of their EDAs, regardless of the specific theories they propose. One can still deny this antecedent premise, but I will now accept it for the purposes of considering in greater detail other challenges.

To underline the importance of pursuing this line of enquiry, both Dawkins and Dennett mount similar, projectionist charges against religion, with better scientific evidence. I focus on Freud's and Hume's versions due to their explicit expositions, but the more recent iterations serve as a reminder that the same questions retain relevance. Dawkins attempts to explain religion in *The God Delusion* and implies that this explanation makes religious beliefs false, without explicitly telling the reader why.[255] Likewise, Dennett, though he

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[254] Robert Nola, "Do Naturalistic Explanations of Religious Beliefs Debunk Religion?" in *A New Science of Religion*, ed. Gregory Dawes and James Maclaurin (2013). p.2.

[255] Dawkins, *The God Delusion*. Chapter 5 investigates the "Roots of Religion". These are unveiled under the assumption that religion is a purely natural, false phenomenon, with the demonstration of the former attribute supplying evidence for the latter.

focusses in his book more on political themes rather than philosophical, presumes that by investigating "religion as a natural phenomenon" and as an "invention", its untruth will be obvious.[256] When discussing the 'stories' that build religious myths, he implies that religion's truth is improbable given the naturalistic explanation, in an echo of the above Aetiological EDA structure- "The story doesn't just get better – it *happens* to get closer to the truth. A lucky break?".[257] Hence, looking beyond poor naturalistic explanations of religion to the structure of the Aetiological argument is advantageous. Otherwise, the only thing preventing a successful debunking of religion would be an incomplete scientific understanding of the origins of religion, which could be remedied by future investigation.

In order to clarify the philosophical argument, let us return to the broad outline above. 'Projections' debunking clearly accepts premises 1 and 3 wholeheartedly. The second premise is defended in this case by saying that the natural explanation not only removes the requirement for a supernatural explanation, but also demonstrates the falsehood of the supernatural reality. This is because, by demonstrating that religious beliefs are 'projections', the supposed corollary is that they are unjustified, as typifies 'projections'. This is how both Hume and Freud wish to put their natural histories of religion to work, and it fits well into the general schema of Aetiological EDAs.

Even under the assumption that such natural histories are in fact correct, this style of EDA remains fundamentally flawed. The main problem is that the scientific claim is not clearly related to the philosophical claim, and the philosophical claim that projections tend to be untrue is a weak one. There is no clear reason provided for why religious projections cannot be true, beyond probabilistic analogies. For example, I might imagine a lion sitting on my desk. This projection is unlikely to be true, because I know, from external sources, that lions don't reside in England outside zoos, and it is very unlikely that one made it on to my desk. If I imagine a pen on my desk, however, one could not so easily dismiss this as a projection, because a pen is a perfectly reasonable thing to find upon one's desk. The problem for Freud and Hume's argument is that they equivocate all projections with the former kind. Of course, some projections are obviously ludicrous and thus we can say they are unjustified. But the reason we can say that they are unlikely to be true is because of factors external to their being a projection (such as, knowing lions are uncommonly found on desks in England helps us discern my projection to be false). Beliefs that are projections of my mind are not necessarily false *by virtue of being projections*. One cannot say whether religious beliefs are a ludicrous or a sensible projection of the mind (i.e. whether it is equitable with the pen projection or the lion projection) unless one has external reason to do so. The naturalistic explanation is just one possible explanation, but is not exclusive, so the possibility of religious beliefs being true projections is not dismissed.

Essentially, these simple 'projections' Aetiological EDAs rely on a fantasy justification of religious beliefs. Such arguments' insistence that a naturalistic explanation of religious beliefs is sufficient to debunk requires that religious beliefs are based on a supernatural

[256] Dennett. *Breaking the Spell*. (2006). p.24, 175.
[257] Dennett. *Breaking the Spell*. (2006). p.192.

explanation. It may of course be true that believers offer a supernatural explanation of why they are religious, perhaps in terms of God making a covenant with humans, or Buddha being inspired to teach others how to reach ultimate enlightenment. But providing an alternate explanation does not remove the beliefs or make them inaccurate projections. It is inconceivable that a meaningful number of religious believers would say that they believe purely due to the lack of a naturalistic explanation of religion. To say, for example, the belief that 'God exists' relies on a certain aetiology of religion, is fanciful. If this were indeed the case, then Freud and Hume's Aetiological EDA would hold more sway. The justification of religious beliefs, however, almost never rests upon the specific history of those beliefs, and so these arguments are attacking an unreal position.[258]

Understanding the fantasy on which projections Aetiological EDAs are based leads us towards the genetic fallacy, which is rarely far from relevance here. The genetic fallacy is described by John Whittaker as: "the fact that it is a fallacy… to infer the truth or falsity of a belief from a knowledge of its origin, cause, or function."[259] This fallacy is a general one that applies across many branches of philosophy, pointing out that just because a 'genetic' or Aetiological explanation is given of why something is the case, the nature of that thing is not altered, without a reason why the explanation bears relevance.[260] The 'projections' Aetiological arguments utilise a deceptive comparison with ordinary consideration of truth-claims. Although it may seem unlikely that my projections happen to be true, there may be a good, non-genetic explanation of why this is the case. In this instance, although an evolutionary account of religion seems to explain it fully, another explanation can be true simultaneously that leaves room for the supernatural truth of its subject matter. For example, stating that religion arose due to evolutionary forces is not incompatible with stating that God gave humans religion, because God might have used evolutionary forces to do so.[261] The genetic fallacy applies here because debunkers clearly assume that their genetic explanation alone suffices to remove the need for, and thus debunk, the truth of the phenomena that it explains. But in calling a belief-forming process 'projectionist', they do not sufficiently detail why the results of that process are inaccurate. Hence, even permitting the possibility of a complete empirical explanation of religion, this form of Aetiological EDA does nothing to debunk religion, because it fallaciously connects the origin of beliefs with their irrationality, without reason.

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[258] Mawson gives a useful account in his chapter of the demographics of theism and polytheism, which also considers the reasons why believers opt for one or the other. Shermer's article provides empirical evidence on the reasons that Christians cite as underlying why they believe- they are overwhelmingly not origin-dependent (p.6). Both thus support the sensible intuition that religious believers use reasons to justify their beliefs that are separate from the natural history of religion itself. T. J. Mawson, "The Rationality of Classical Theism and Its Demographics" in *Scientific Approaches to the Philosophy of Religion* (2012); Michael Shermer, "Why People Believe in God: An Empirical Study on a Deep Question" *Humanist* (1999).

[259] John Whittaker, "Causes, Reasons, and the Genetic Fallacy" *Journal of American Academy of Religion* (1978). p.1.

[260] Simon Blackburn, "Genetic Fallacy" in *The Oxford Dictionary of Philosophy*, ed. Simon Blackburn (2016).

[261] As argued by, for example, Justin Barrett and Ian Church, "Should CSR Give Atheists Epistemic Assurance? On Beer-Goggles, BFFs, and Skepticism Regarding Religious Beliefs" *The Monist* (2013). pp.9-12.

Comprehending the catastrophic failure of Hume and Freud's simpler, 'projections' Aetiological arguments will be useful when surveying other EDAs. Similar elements are to be found repeatedly in more sophisticated Aetiological arguments, though this means that many of the same counter arguments will also reoccur, especially the genetic fallacy and the possibility of concurrent, valid explanations. The real legacy, though, of the 'projectionist' EDAs put forth by Freud and Hume is to be found in the arguments still to come, which developed and strengthened key features of their debunking arguments.

'Explanations' Aetiological EDAs

One key thread running through the projectionist EDAs concerned explanation, a thread that gains additional significance in the light of the naturalistic explanations of religion described in the previous chapter. Robert Nola is a philosopher of religion who concentrates on this element in forming his own Aetiological debunking argument. Indeed, he is the only major debunker who utilises this 'explanations' style of enquiry.[262] Nola argues that the 'folk' explanation of religion (which holds that God or another analogous supernatural force causes religious beliefs) and the naturalistic explanation both explain the same facts, "but they adopt incompatible hypotheses about what is to do the explaining".[263] Thus, Nola attempts to motivate the second premise of the Aetiological EDA by stating that religious beliefs are dependent upon supernatural explanation (and not naturalistic explanation) for their truth. That is, for Christianity to be true it must be true that God exists and guides us to know Him (as an example of a supernatural explanation).[264] Seeing as the supernatural explanation has been out-competed (according to Nola) by the naturalistic one, the truth value of religion is undermined and debunked.[265]

Nola somewhat brushes over his key assertion of incompatibility, as if it were blatant, before establishing why one ought to favour the naturalistic explanatory hypothesis over the 'folk', religious one. Yet for religion to adopt an incompatible hypothesis it would have to contradict explicitly the empirical account of religion. For example, one can at least imagine an inflexible Christian viewpoint that asserted, uncompromisingly, that religion is God-given and came about not because of its evolutionary benefit but through God's supernatural intervention alone. This view would certainly be 'debunked' by a Nola-esque argument. The exact genesis of religion is not a dogmatic concept though, e.g. theists tend to believe God provided them with religion, but rarely cling to specific details on how this occurred. Indeed, from an Abrahamic perspective whereby humans are favoured among God's creation, the evolutionary standpoint is logical. If God indeed chose humans to

[262] Daniel Lim does also address CSR from a similar perspective, but does not promulgate an EDA. Daniel Lim, "Cognitive Science of Religion and Folk Theistic Belief" *Zygon* (2016).
[263] Nola, "Do Naturalistic Explanations…" (2013). p.6.
[264] A sample Christian thinker using this sort of argument is John Calvin, who believed that all humans have a *sensus divinitatis* that gives them knowledge of God. This is thus simultaneously an explanation of the existence of religion and epistemic justification of belief in God. Paul Helm, "John Calvin, the 'Sensus Divinitatis', and the Noetic Effects of Sin" *International Journal for Philosophy of Religion* (1998). pp.5-6.
[265] Nola. "Do Naturalistic Explanations…" p.8.

relate to Him, then it seems reasonable that He would make religion advantageous to human development, rather than destructive or useless.

Either Nola's explanation of religion is in some way uniquely objectionable for believers compared to other naturalistic explanations, or there is no incompatibility. The evidence he provides as explanations varies. But two of his major theses are that religion arose due to a Hyperactive Agency Detection Device in the human brain, which led us to intuit agency where there was none, or the Humean theory that religious beliefs are a "projection" that fulfils what we want to be true, in response to the evils of the world.[266] It seems at least hypothetically true, however, that the 'hyperactive' device may only be hyperactive in its detection of agency in the world, while in fact being perfectly attuned (perhaps by God) to allow us to know God, so a religious believer would not find these explanations especially problematic. As J. R. R. Tolkien poetically puts it: "the heart of man is not compound of lies, but draws some wisdom from the only Wise".[267] Nola's explanations are not incompatible with a religious viewpoint such as Tolkien's, and are certainly no more so than other explanations considered previously.

Moving beyond Nola's speculations, it is difficult even to imagine an empirical theory of religion that is 'incompatible' with its subject. There are only two such obvious cases. As mentioned, if a religion explicitly and inflexibly has its own origin story that contradicts the empirical picture, then there is incompatibility. If an evolutionary theory about religion openly rejects the possibility of a religious/supernatural explanation, then again there is incompatibility. The first is very rare: individual religions tend to tell a tale about their own origin, but not religion-in-general's origin across humanity. None of the major world religions adheres tightly enough to specific enough doctrine to contradict a natural explanation. Moving to the second possibility, evolutionary explanations necessarily operate as explanations within the physical world. Religion operates not just within the physical world but also in a transcendent realm. Even when atheists like Dawkins propose evolutionary explanations of religion, this cannot rebuff the possibility of a non-physical religious explanation, due to the limitations of methodological naturalism. While Nola states that theological and evolutionary explanations of religion are incompatible, this is not true, barring exceptionally rare circumstances.

The genetic fallacy has again been committed, albeit more subtly. Nola does not specifically contend that possessing a naturalistic explanation of religion makes religion untrue. Instead, he focusses on how religion is explained, and sets up two competing explanations, in which one is obviously to be crowned the winner. This still falls afoul of the fallacy though, because Nola's argument would have no debunking power if it were not for the unspoken premise that only one explanation can be true. For this form of explanations-focussed debunking to succeed, it must be the case that the naturalistic explanation is the only possible explanation. Yet that is an almost archetypal example of the genetic fallacy, because it conflates an origin story with an epistemic claim about what

[266] Nola, "Do Naturalistic Explanations…" (2013). p3

[267] J. R. R. Tolkien, "Mythopoeia" in *Tree and Leaf, Including the Poem Mythopoeia*, ed. J.R.R.Tolkien (1988). p.2.

can possibly be known. Explanations of the naturalistic origin of beliefs do not by themselves make a belief unjustified, because explanations operating on different levels can co-exist. Moreover, it should be needless to say that even if the religious (or 'folk') explanation of why religion came about is incorrect, or if religion offers no plausible story at all, Nola's argument still would not debunk. The naturalistic explanation cannot speak to the metaphysical justification of the matter it describes, and any attempt to use it to do so is doomed to failure. Hence, Nola's efforts to motivate the key second premise of the Aetiological EDA are utterly unsuccessful.

Nola's argument also utilises the principle of parsimony, as he wants to say an outcompeted explanation is unnecessary and should be discarded.[268] The principle of parsimony is valuable within science, to prevent unnecessary theory overcomplication. The principle states that the least complicated theory ought to be accepted, all else being equal. E. O. Wilson delivers an interesting twist on applying this principle for Aetiological EDAs. He argues not only that we should favour the empirical explanation because it is simpler, but also because it describes its explanatory 'competitor', religion, and as such, choosing it removes the need for extra explanation.[269] This reasoning may initially seem shrewd, and it certainly is a better attempt at debunking from parsimony than Freud's or Hume's. Nonetheless, it avoids the genetic fallacy no more effectively than Nola's argument. We don't know that parsimony applies here as a principle because we don't know that 'all else' is indeed 'equal'.[270] Indeed, Wilson's position seems self-referentially incoherent too, because biology explains its own existence, yet we are presumably not meant to draw from this that biological explanations are worthless. A theory explaining a belief does not make the belief unjustified. Hence, explanations based Aetiological EDAs, regardless of their usage of the principle of parsimony, take us no closer to evidencing the second premise of Aetiological arguments as stated above.

'Sensitivity' Aetiological EDAs

By surveying two significant examples of Aetiological EDAs, we have so far seen that attempted debunkers have endeavoured repeatedly and fallaciously to link explanations with truth. There is, however, a third major branch of Aetiological EDAs. Just as Nola's explanation-focussed EDA stemmed from one component of the Freud/Hume-style debunking argument, so the 'sensitivity' arguments develop another part. They are most interested in the idea that religion is a projection of the human mind, or of society as a whole. Aetiology retains its importance, because by examining the causal explanation of religion, 'sensitivity' EDAs typically reject the possibility that the way humans form

[268] Hans van Eyghen, "Two Types of 'Explaining Away' Arguments in the Cognitive Science of Religion" *Zygon* (2016). p.8

[269] Wilson, *On Human Nature*. (1978). p.191.

[270] Furthermore, we might not even know what 'all else' and 'equal' mean in this context! In science it typically means all other potentially causally relevant factors are controlled but here we might instead say that for all else to be equal both theories must offer equally satisfactory explanations across all possible realms of enquiry- a strong claim.

religious beliefs is sensitive to truth. I have labelled them thusly because they defend premise 2 of the outlined Aetiological argument by arguing that natural explanations of human religion demonstrate specific *insensitivity* that makes religious propositions unlikely to correspond with truth, and so unjustified.

A number of philosophers of religion and theologians have set forth some version of a sensitivity EDA. Michael Murray provides a succinct summary of the foundational premise of 'sensitivity' arguments: "religious belief would, it seems, exist whether or not there is any supernatural reality".[271] From here, the debunking argument is directed towards the falsehood of religion by arguing that human religious beliefs are not sensitive to truth, so it would be a coincidence if indeed they were true, given that was not why they developed.[272] The central point is that the evolutionary explanation supposedly shows religious beliefs are insensitive to supernatural reality. 'Insensitive' here means, in essence, 'not altered or caused by the truth or falsehood of their subject matter'. If indeed the debunkers' aetiology does imply insensitivity of religious beliefs, then it would seem difficult to defend their justification and debunking is plausible.

A fundamental premise of sensitivity EDAs is that religion can be explained without resort to supernatural truth (satisfying premise 1 of the generic structure). This is not an entirely uncontroversial claim, yet the foregoing discussion of the evolution of religion showed the possibility of succeeding in this endeavour. In any event, it is useful, as aforementioned, to give science the benefit of the doubt and operate with the assumption that a naturalistic explanation will at some point be possible. If that were the case, then it is fair to say that supernatural truth, by the same token, would not figure in that explanation. Some sensitivity debunkers utilise specific elements of the Cognitive Science of Religion when developing theories to fit their arguments, but specifics need not detain us further.

An archetypal example of this Aetiological EDA is set out once again by Robert Nola. Alongside his attempted debunking based on quality of explanation, he also looks at 'sensitivity' style arguments in his attempt to "demystify" religious belief.[273] Building on possible naturalistic explanations of religion, Nola argues that if our religious inclinations are given to us by a part of the brain that is *hyper*active, that part of the brain "is not reliable in what it indicates as existing", because it provides all sorts of false beliefs, such as that the rustling of leaves is a leopard rather than the wind.[274] Hence, Nola believes he has managed to debunk religious beliefs, because they are based upon a faculty that is, in the natural world at least, unreliable, and so should be disregarded.

The problem with this most basic form of the argument is that it does not provide any truly compelling reason for a debunking. It can be granted that religious beliefs are not

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[271] Murray. "Scientific Explanations of Religion…" (2009). pp.174-5.
[272] Erik Wielenberg, "Evolutionary Debunking Arguments in Religion and Morality" in *Explanation in Ethics and Mathematics: Debunking and Dispensability*, ed. Uri Leibowitz and Neil Sinclair (2016). p.6
[273] Nola, "Demystifying Religious Belief" in *New Developments in the Cognitive Science of Religion* (2018). p.1.
[274] Ibid. p.14.

caused by the truth of their subject matter. It is also true that the HADD, within the natural context, provides false positives. Yet these two facts together do not make religious belief one iota less justified. Here, the genetic fallacy continues to linger. 'Sensitivity' EDAs attempt to draw an ultimately unsustainable link between why we have beliefs and their justification. The fact that religious beliefs are insensitive means that it is possible they are not true. But we knew that all along! Moreover, where Nola's argument was stricken with problems over simultaneous explanations, this 'sensitivity' EDA performs no better under the same strain. The HADD might seem to us to be hyperactive, because we can only verify its natural results. But if it is the same faculty that provides us with religious beliefs, that faculty might be neither hyper-, nor under-active, but in fact perfectly attuned to the signals it is meant to process from the supernatural realm. Knowing that the HADD is unreliable within a *physical* context tells us nothing of its reliability in a *meta*physical context. As was described in the 'explanations' sub-section: what seem at the natural level to be hyperactive false positives may be well-attuned true positives at the supernatural level. Thus, to argue that the insensitivity of HADD leads to the irrationality of religious beliefs fails as an attempted debunking, still not escaping the genetic fallacy.

Another philosopher considering this issue is Matthew Braddock, who postulates a slightly altered version of a sensitivity EDA. He, too, focusses on the HADD and HADD-like faculties that science has shown are likely to produce god-beliefs. He begins by claiming, supported by evidence from CSR, that humans are pre-disposed to develop beliefs in polytheism and finite-gods, which, he asserts further, are untrue.[275] Braddock adds the premise that theists' own god-beliefs stem from these same CSR mechanisms that provide polytheists with their false beliefs. Ultimately, Braddock concludes that this ought to lead rational people to suspend judgement on the reliability of CSR mechanisms, because they have a track record of leading us astray.[276] Any beliefs for which we rely upon CSR mechanisms for justification would thus be unjustified, thereby motivating premise 2 and 3 of the generic Aetiological EDA. Braddock's argument debunks by linking CSR explanations of human god-belief-forming mechanisms to insensitivity to supernatural truth, through examining their previous failures.

One response to Braddock is to argue that we cannot know that beliefs such as those about polytheism or finite Gods are false. This would mean that one cannot know that humans are predisposed to false beliefs, and would be a strong defence. Of course, if one took up this line of defence one might find that one had ceded so much ground to build an impregnable fortification that there was little of value worth fortifying. Ideally, the theist wants to be able to state both that polytheism/religious beliefs that contradict their own are unjustified, *and* that their own beliefs are justified, which the 'deny falsehood of polytheism' defence does not do.

[275] Matthew Braddock, "Debunking Arguments and the Cognitive Science of Religion" *Theology and Science* (2016). pp.2-3.
[276] Ibid. p.4

There are far better ways of responding to Braddock's EDA that do not throw the theistic baby out with the debunking bath water. Looking at the final propositions Braddock adds to make his argument debunk, he requires that theists' religious beliefs are based on the CSR mechanisms that he deems oft-mistaken. This is a doubtful claim at best. I cannot imagine a religious adherent stating that he or she believes because of his or her HADD, or because doing so creates helpful oxytocin in the brain. It is not controversial to assert that such believers are rare or non-existent. Significantly, they would be the only type of religious believer whose beliefs are in fact debunked by Braddock's argument. Believers in general have reasons resembling arguments for God's existence, which motivate their beliefs.[277] Those reasons may often be imperfect, but they *are* external to the question of why religion exists in humans, and by retaining them, one can rob Braddock's argument of its debunking power.

To return to a considerable, recurring critique of Aetiological EDAs, Braddock himself has not skirted around the genetic fallacy as nimbly as he hopes. His purported link between the origins of beliefs and their rationality does not hold, since religious beliefs can and do derive their justification from many sources that do not include their origin. Braddock's argument also draws a parallel between polytheistic beliefs and monotheistic beliefs that suffers the same flaws as Nola's earlier parallel. We may be able to conclude that CSR mechanisms are unreliable for producing *poly*theistic beliefs, but this tells us nothing concrete about their reliability in providing *mono*theistic beliefs. Braddock's false equivalence is based upon a faulty connection between origin and belief.

In support of this critique, Hans van Eyghen points out that Braddock does not sufficiently evidence his link between unreliable polytheistic-belief mechanisms (highlighted by CSR) and beliefs held by monotheists. The mechanisms that CSR reveals "from a monotheist perspective… occasionally produce true god beliefs, namely monotheistic beliefs".[278] This is very significant because now, rather than religious belief being based on mechanisms that rarely, according to Braddock's tale, provide supernatural truth, there are some beliefs (including monotheistic ones) that might be based on these mechanisms that are true, and some (particularly polytheistic beliefs) that are false, along with a host of beliefs that are not related to HADD or any other CSR-mechanism at all. It becomes evident, from this angle, that although Braddock has done well to demonstrate some unreliability in our religious faculties, he has ultimately been unable to link these unreliable origins to the actual beliefs he seeks to debunk, so provides no argument against religion.[279]

Another common variety of 'sensitivity' argument takes the form of this statement: 'people's religious beliefs are influenced by their cultural environments. Therefore, their beliefs are more sensitive to environments than actual truth'. A version of this argument is

[277] To consider evidence of what religious adherents state as reasons for beliefs, see earlier footnote referencing Mawson and Shermer, addressing the reasons that believers cite for holding their beliefs.
[278] van Eyghen. "Is supernatural belief unreliably formed?" (2018). p.17.
[279] Glass. "Explaining Away…" p.15.

presented by Jon Marsh and Jason Marsh.[280] The argument is that one's religion is to a large extent based on the way one was brought up, the prevailing culture, and other similar factors, all of which are seemingly irrelevant to their truth value. Yet there are very few conversions and people typically retain their culture's faith, implying that the real determinant of belief is not whether it corresponds with objective truth, but whether it corresponds with the environment in which we were raised.[281] The naturalistic portion of this argument is sound. It is true that there are few conversions, and thus the seemingly predominating factor in what a person believes is his or her environment. This style of argument has built on the other sensitivity arguments, and is in my view the strongest version, because it paints a convincing picture of the insensitivity of specific religious beliefs to truth. Thus, this version demands an answer for why religious beliefs are so environmentally dependent, lest their insensitivity to truth infer their debunking.

In tackling this form of debunking argument, I enlist philosopher Roger White's superb paper '*You just believe that because…*', which dismantles many Aetiological EDAs. White uses the example of philosophical schools of thought within institutions, where philosophy graduates from Oxford commonly happen, en masse, to endorse the analytic/synthetic divide, while graduates of Harvard equally unilaterally oppose any such distinction.[282] Ought we therefore to question the validity of either school of thought (that expression gains deeper meaning- perhaps schools are unitary imposers of thought under this model)? One helpful way to exemplify this notion is through friendships. I am friends with a person only if we happen to meet. This meeting might happen due to a career plan, or due to a chance encounter on the street. Even with my closest friends this holds true: had a set of obviously contingent factors (such as university admission or lifestyle choices) been altered, we would not be friends. The analogy to religion is plain- if religion were not evolutionarily beneficial (a seemingly contingent possibility), then humans would not be religious, or if Pope Benedict XVI had been born in Saudi Arabia not Germany, he might not have been Catholic. White usefully distils the 'sensitivity' difficulty to the unease that even "if p were false, I would still believe p", due to external, contingent factors.[283] The Marshes' interpretation of facts towards a 'sensitivity' EDA, elucidated by White, is the strongest so far at evidencing this uneasy claim.

Having now clarified where exactly the challenge lies and found an EDA to evidence that issue best, this concern based on insensitivity must be assuaged. White provides a modest dismissal- the unease is no more than general anxiety that there are other clever people in

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[280] Jason Marsh and Jon Marsh, "The Explanatory Challenge of Religious Diversity" in *Advances in Religion, Cognitive Science, and Experimental Philosophy*. (2016). p.3.

[281] Robert Barro, Jason Hwang, and Rachel McCleary, "Religious Conversion in 40 Countries" *Journal for the Scientific Study of Religion* (2010). Barro et al provide an imperfect but useful overview of statistics on conversions and their interactions with pluralism. While they admit their analysis has flaws, it usefully illustrates that typical conversion rate is c.5%, and rarely surpasses 10%, easily sufficient to demonstrate that conversions are rare, even without considering the causes of conversions.

[282] Roger White, "'You Just Believe That Because…'" *Philosophical Perspectives* (2010). p.2.

[283] Ibid. p.9

the world who disagree.[284] It is naturally concerning when one learns there are perfectly reasonable people in the world, some who are even cleverer than oneself, who have come to different conclusions based on similar evidence. But this discouragement should not be taken to heart as evidence against one's beliefs. As long as one has good reasons behind one's beliefs that are normally admissible, the fact that things could be different should come as no surprise and not worry one unduly. If such strict criteria were applied to all beliefs, then it would be almost impossible to believe anything at all, because clever people disagree on a wealth of matters. Such scepticism is not practical, White argues, preferring instead to retain normal justification of beliefs, not worrying why we hold them.

This defence can be used more broadly against sensitivity EDAs and has returned time and again in this chapter. Beliefs can have an origin and a truth value; as seductive as it can be to connect the two, to do so accurately is a different matter. William James states this simply: "By their fruits ye shall know them, not by their roots".[285] I agree with his sentiment that beliefs ought to be judged on their merits rather than their backgrounds. Returning to the analogy of a friendship: a friendship is made no less 'true' by the fact that it might not have occurred, nor are beliefs less justified because different circumstances might alter them. The Aetiological EDAs have not been any better supported, as no link between causal factors and justified beliefs is established even by arguments that succeed in showing insensitivity. This means 'sensitivity' EDAs cannot evidence premise 2 of the generic Aetiological EDA, because explanations that demonstrate insensitivity in our religious views do not equate to beliefs being unjustified or debunked.

Once again, the only way this sort of argument could be convincing would be if people were to base the truth of their beliefs on the specific accounts of how religious beliefs arose. If religious believers said that their beliefs are true because the wonderful CSR mechanisms they possess are sensitive to truth, then evidence of insensitivity is indeed troubling. This was touched upon when looking at Braddock's argument, and even moreso in previous sections, but it bears repeating- *religious believers have bases for their beliefs that are external to their origins*. The religious response to this form of argument is an obvious one- maintain the importance of non-CSR reasons to hold religious beliefs.[286] 'Sensitivity' EDAs stem partly from a recognition that the genetic fallacy must be overcome somehow. But the correct method of escaping the fallacy's clutches does not lie in merely (and falsely) claiming that justification is based upon a particular tale of origin; Aetiological EDAs necessitate fallacious connections between roots of justification that go well beyond what is necessary for either internalism or externalism. CSR mechanisms may constitute a valid naturalistic explanation of religion, but they do not alone tell us about the strength of the reasons that believers use as justification.

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[284] White, "'You Just Believe That Because…'" (2010). p.36

[285] James, *Varieties of Religious Experience.* (2011). p.21.

[286] A theistic response is given by Jonathan Jong and Visala, who point out religious beliefs can be justified with grounds external to those debunkers target. Jonathan Jong and Visala, "Evolutionary Debunking Arguments against Theism, Reconsidered" *The International Journal for Philosophy of Religion* (2014). p.6.

Lessons Learnt

The three Aetiological EDAs discussed so far constitute the bulk of common attempts. None succeeds. Preliminary attempts at using evolution to debunk religion have failed resoundingly. Nevertheless, this chapter was worthwhile and necessary in displaying obvious progression and development in Aetiological EDAs; those considered later were more formidable than the earlier, 'projections' versions. This suggests growing awareness of what might and might not debunk religious beliefs. With this goal in mind, I monitor what lessons potential debunkers and defenders of religion might learn from Aetiological EDAs, many of which will be brought to future chapters to demonstrate where yet more progress can be made in linking the evolution of religion with its epistemology.

What consequences do Aetiological EDAs hold for religious beliefs? Certainly, if religious beliefs are justified by resort to their origin, EDAs are very effective at dispelling that possibility. Given, however, that religious believers ordinarily have completely independent justifications for their beliefs, or at least could have such a thing, Aetiological EDAs should not reduce confidence in the truth of religious beliefs. It would be foolish and hasty, though, to think that in deflecting the efficacy of Aetiological EDAs there are no repercussions for religious belief, or future debunking.

Religious belief must, in the face of EDAs, be reinforced by justification based on reasons external to a specific tale of causation. Arguably this is not tremendously noteworthy, because very few theologians would assess that 'I believe in God because I live in a society that makes it beneficial to believe in God' is a valid defence, but Aetiological EDAs underline its importance. They can play a useful role in reaffirming the need for beliefs to be well-justified and rationally validated. Furthermore, such EDAs attempt to reveal where pernicious faculties or processes have led to the genesis of religious belief, and rightly attack those cases. Though those arguments were insufficient to debunk religion meaningfully, it is important for believers to recognise where any beliefs they hold might have been caused by a "sinister" CSR mechanism, to borrow a term used by De Cruz, and consider whether that ought to affect confidence in such beliefs.[287] Hence, it seems that the role Aetiological EDAs play for religious beliefs is in issuing a clarion call for a renewed focus on justification, rather than undermining or debunking as they initially aimed.

Regarding EDAs and the evolution of religion, one question to consider is: does the type of explanation have any bearing upon debunking? Immediately, certain attempted explanations of religion present themselves as being posited with a view towards undermining their subject matter. Thinkers such as Freud and Dennett are good examples of this.[288] Anthropological explanations, on the other hand, particularly non-reductive ones, are plain about their lack of explanatory power, and the importance of not

[287] Helen De Cruz, "Etiological Challenges to Religious Practices" *American Philosophical Quarterly* (2018). p.5.
[288] Freud. *Moses and Monotheism*. (1967). Freud claims that "religious phenomena must of course be regarded as a part of mass psychology" (p.9), immediately subjugating explanation to the purely natural realm. Dennett's explanations of religion are similarly subversive. Dennett. *Breaking the Spell.* (2006) e.g. p276.

diminishing religion's validity by giving it a causal explanation. Meanwhile, psychological and CSR explanations are often more reductive and have a tone of 'explaining away', seeming to claim that explaining religion psychologically invalidates the possibility of it also being true.[289] Despite this slight evidence to the contrary, I do not agree that different kinds of explanation of religion have different debunking consequences. There may have been some coincidental correlations between psychological explanations and debunking, and the attempted completeness of such explanations might tempt one more towards debunking. Yet ultimately the explanation is separate from the purpose which it is given. One can spark a debunking argument from an anthropological analysis just as one would spark one from psychological explanations. Thus, the type of natural history of religion does not have any bearing on debunking based thereon.

One of the key findings discerned from Aetiological EDAs, aside from their ineffectiveness, has been their propensity for the genetic fallacy. Janet Richards remarks pithily, describing EDAs on altruism: "explaining how altruism comes to exist no more shows that it is not real altruism than explaining how a cake was made shows it is not a real cake".[290] To know something's origin does not eliminate the possibility of other causal factors, or make it false. Even though an empirical explanation of religious belief is possible, this does not preclude the prospect of a non-competitive theological explanation at work in a way that is not empirically discernible. Even the sensitivity EDAs found themselves plagued by this problem, because they can provoke unease about the origins of belief, but do nothing at all to show that religious beliefs are debunked. Hence, if there is any common theme and central lesson to come from this chapter, it is that to succeed, EDAs against religion must be able to demonstrate a connection between a truth claim and how one comes to know it. They must not rely upon the erroneous tactic of winking and gesturing seductively, attempting in vain to connect their brute explanation of religious belief with their epistemological claims to debunk.

To close the chapter, let us return to the original structure of an Aetiological argument as laid out at the beginning. The problematic premise was the second, and despite attempts from 'projections', 'explanations' and 'sensitivity' EDAs, none contrived a way for that premise to convey one from explanation to supernatural reality. Thus, although the first and third premises are defensible, the second premise of the Aetiological debunking argument is defeated comprehensively. Hence, we can state confidently that in this effort the debunkers were themselves debunked. Consequently, aside from lessons learned, an evolutionary epistemology is unaffected by Aetiological EDAs, as the link between cause and truth has not been established and religious justification remains untarnished. Merely focussing on the cause of religious beliefs, as such EDAs do, is evidently insufficient for debunking religious belief. That requires a sharper focus upon why the origin of a belief is relevant for its justification, as we will see in the chapters to come.

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[289] For example, in explaining why large religions came from smaller religions, Norenzayan suggests that in the modern day, thanks to atheism, 'Big Gods' are not required. Norenzayan. *Big Gods.* (2013). Chapter 1

[290] Janet Radcliffe Richards, *Human Nature after Darwin: A Philosophical Introduction* (2000). p.180.

Chapter 5:
Faculties-Focussed Evolutionary Debunking Arguments

1220. Bukhara, jewel of the Khwarezm Empire. Genghis Khan strides into the freshly conquered city's central mosque, where its most influential men are assembled. This is possibly the first time in the Khan's life that he has set foot inside any building, let alone a religious establishment. With aplomb, he informs the assembled imams and merchants that "you have committed great sins".[291] What makes him so sure? "Heaven has promised me victory."[292] If the Khwarezmians had not sinned, then God would not have sent Genghis to punish them. The Khan attributes his success to the fact that he is correct about religion- utter self-confidence that allows Genghis and his descendants to conquer an Empire stretching from Japan to Hungary. This anecdote is highly pertinent to the philosophy surrounding Evolutionary Debunking Arguments against religion. Genghis held that the *truth* of his religious beliefs was key to Heaven granting him victory. At the time, it must have been hard to dispute that history's greatest conqueror had supernatural power on his side. Religious truth begat success in battle.

Now we assume we know better. Yet potential links between pragmatic success and true religious beliefs are highly consequential for evolutionary epistemology. Instead of concentrating on aetiology, faculties-focussed Evolutionary Debunking Arguments emphasise human capacities as they endeavour to undermine religious belief by reference to its origins. In so doing, they necessarily make claims about how the truth of religious beliefs relates to their evolutionary fitness. They have a more complex structure than Aetiological EDAs that accordingly makes them more defensible. In this chapter I continue the second section of the thesis by laying out these debunking arguments, unveiling their foundations and how they apply to religious belief, while aiming to find the strongest possible version. Ultimately, Faculties EDAs have significant potential to disrupt science-religion dialogue through altering religious epistemology, and ought to be taken seriously. By analysing these EDAs, I lay much important groundwork for my own argument to come, while addressing a branch of arguments that are significant in their own right.

I outlined the basic structure of faculties-focussed debunking arguments in the introduction, but I shall reiterate it, for the sake of lucidity. All Faculties EDAs share a structure that approximates to this one, though their intricacies vary beyond this:

> Premise 1) Religious belief is explained by the faculty X
> Premise 2) X is not a reliable faculty for justifying beliefs
> Conclusion) Religious belief is not justified.

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[291] Jack Weatherford, *Genghis Khan and the Quest for God: How the World's Greatest Conqueror Gave Us Religious Freedom* (2016). p.200.
[292] Paul Ratchnevsky, *Genghis Khan: His Life and Legacy*, translated by Thomas Haining (1991). p.109.

Premise 1 is empirical and evidence was put towards it when considering the evolution of religion- I will argue that, given my definitions of faculty and religious belief, it is not arduous to evidence this first premise. Just as with Aetiological arguments, it is certainly possible to attack the empirical case or the idea of 'explaining' religion, but it is more interesting to view the first premise as established, or at least as something that ought to be establishable by science eventually. The more visibly controversial questions here are the philosophical ones: whether the argument overall is valid and whether premise 2, which is epistemic in nature, is sound. Faculties EDAs of this structure can be applied against myriad beliefs; I intend to focus on religion, but later will consider applications of such an argument to other spheres of human understanding.

One preliminary is the definition of a 'faculty'- key points from chapter 1 bear repeating here. When 'faculty' is used to refer to religious beliefs, it sometimes refers to that which science can tell us about religion- the physical process from which religion arises. Still, I am keen not to dissuade readers who might object to usage of the term 'faculty' due to their prior theory of mind. I am not assuming that cognitive science or materialism are accurate models of the human mind, in fact the Faculties argument would survive if a faculty were a purely non-physical, mental property. A 'faculty' therefore, amounts to whatever mental function produces beliefs, and it may be physical or non-physical.

Faculties arguments must still evidence their first premise. 'Explain', means that the existence of religious belief is caused by a faculty (or group of faculties). Claire White has done useful work here, considering what it is precisely that CSR informs us about religion, which signals caution on the extent to which it is meaningful to say science 'explains' religious belief-forming faculties.[293] EDAs largely justify this premise by using scientific evidence to mark a specific faculty as producing belief. Chapter 2 should convince one that an explanation of the faculties that cause religious beliefs is *possible* (or even likely). Such an explanation might not explicitly use the word 'faculty' or utilise a singular cause of beliefs, but it would describe, usually in evolutionary terms, the source of religious beliefs. Given this plausibility, premise 1 is sufficiently satisfactory that it would be foolish not to assess the potential consequences of the Faculties EDA, given its reasonable foundations.

Although they are not entirely successful, Faculties EDAs pose a serious threat to the justification of religious beliefs that must be answered. They also introduce a major means of connecting the evolution of religious belief to its truth value. The Milvian Bridge epistemic test, by offering a good reason why beliefs ought to depend somewhat for their justification on their origins, is integral to the third premise of my argument in chapter 7. After explicating precisely how Faculties EDAs debunk religious belief, I then defend them from self-defeat, and dedicate the rest of the chapter to demonstrating that the Milvian Bridge principle, with its significant part in evolved epistemology, is sound and coherent, even if Faculties EDAs fail in their definitive task.

[293] Claire White, "What Does the Cognitive Science of Religion Explain?" in *New Developments in the Cognitive Science of Religion* (2018).

Focussing on Faculties

One of the earliest proponents of a faculties-focussed debunking argument is, curiously, Alvin Plantinga. The prominent theist's EDA was not deployed against religion though. His Evolutionary Argument Against Naturalism (EAAN) intends to prove that naturalism is a self-defeating thesis, and thus that theism (its counterpart, at least in his view) is more correct. He states that scientific beliefs are justified by resort to mental faculties, which were provided to humans by evolution. By this he means that justification of any scientific belief is underwritten by the implicit recognition that the mental processes that produce human beliefs (which evolved just like every other facet of humanity) are accurate indicators of truth. But evolution rewards fitness not truth- "all that's required for survival and fitness is that the neurology causes adaptive behaviour".[294] So Plantinga believes he has debunked naturalism, because if naturalists hold that evolution is an accurate theory of human origin, it follows that they are unable to ground the empirical claims of science (including evolution) due to their evolved faculties, forming a vicious circle.

It is worth investigating Plantinga's argument in greater detail, as it raises valid questions that continually reappear. The first consideration is the definition of naturalism he uses. Plantinga's definition of naturalism is akin to a hard form of ontological naturalism, as described in the introduction. Naturalism is constituted by, for Plantinga, materialism, godlessness (or no causally efficacious God) and outright rejection of supernaturalism.[295] From this, Plantinga argues that the probability of human faculties being reliable is low, given one believes one's cognitive faculties arose via evolutionary processes, and that naturalism is true. This tiny probability ought, Plantinga alleges, to act as a defeater for the belief that our cognitive faculties are reliable. [296] Hence, if one believes that human faculties evolved naturalistically, one is left unable to state that one's faculties are reliable, thus making naturalism incoherent. There are externalist overtones here, but as discussed in chapter 3, an internalist has just as much cause for concern if faculties are in doubt.

In order to explain what makes the probability of reliable faculties low, given that they evolved in a naturalistic way, Plantinga provides a hypothetical example. The example is reductionist, but illustrates his point adequately. Imagine a creature with evolved faculties living in a world where ontological naturalism is true. As this creature's mind is entirely physical, the creature's beliefs are thus also entirely physical. These physical beliefs have a causal effect, most relevantly on the behaviour of the creature.[297] If it believes that there is food in its hand, it will try to eat the food. Plantinga points out, entirely correctly, that natural selection selects for behaviours. Natural selection does not care about beliefs, except insofar as they have physical effects, just as natural selection does not technically

[294] Plantinga, *Where the Conflict Really Lies* (2011). P.327
[295] Ibid. circa p.300.
[296] Ibid. pp.330-48
[297] Alvin Plantinga, "Content and Natural Selection" *Philosophy and Phenomenological Research* (2011). p.2.

select for genotypes in individuals, but phenotypes, which typically happen to be correlated with genotypes, leading to the phenomenon of apparent gene selection.[298]

Plantinga uses this biological fact intriguingly, arguing that because the behaviour is what natural selection 'considers' (though this language over-personalises a blind process), the content of the belief is unimportant. The hypothetical creature can have adaptive behaviour without correct beliefs, hence disconnecting *adaptive* faculties from *reliable* faculties. The probability that the creature's faculties are reliable is low because its faculties would have to be coincidentally reliable, as the behaviour they cause is what counts, not the beliefs they produce.[299] This move fits into the EAAN, allowing Plantinga to say that if one believes that we live in the world that the hypothetical creature lives in, then one is probably mistaken. This is because the chance of the creature's faculties (and by extension, our faculties) being true is very low, so one couldn't possibly know about evolution or naturalism in the first place.

While Plantinga's EAAN is not an attack on religion, it clearly fits the faculties EDA structure by explaining a certain faculty (albeit a hypothetical one), stating that that faculty is unreliable, and concluding that beliefs based on that faculty are unjustified. His was among the earliest arguments to utilise this structure rigorously. Plantinga primarily attacks naturalism, but also highlights one of the key problems of this style of EDA- limits. The moment one puts forth an EDA against one form of belief, the question arises as to how one prevents defeat of all forms of beliefs, which would bring with it self-defeat of the EDA. Hence, attacking certain classes of beliefs while defending others (particularly those required to establish the argument in the first place) is a severe challenge. Plantinga highlights this challenge well, as his faculties-focussed EDA against naturalism, intended to support theism, results ultimately in a similar style of argument against religious belief. For now, I focus on responding to his critique of naturalism, which frames Faculties EDAs.

Building a Milvian Bridge

If Faculties EDAs against religion are to gain any momentum at all, they must first ensure that naturalism and evolution are coherent propositions, and they must avoid the self-defeat to which Plantinga condemns them. There are plentiful naturalistic defences against his EAAN, many of which are not at all interested in reversing its polarity to criticise Plantinga's own religious beliefs. John S. Wilkins and Paul E. Griffiths, on the other hand, are two intriguing thinkers who together do try to invert the intention of a faculties-focussed argument so that they not only defend naturalism but also attack religion. The intriguing manner in which they do so is the subject of this sub-section.

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[298] This is of course true of Darwinian evolution as understood in chapter 1. Moreover, it is difficult to find examples of beneficial belief adaptations that are an inaccurate guide to the world. Ryan McKay and Dennett, "The Evolution of Misbelief" *Behavioral and Brain Sciences* (2009). pp.16-7.

[299] Plantinga, "Content and Natural Selection." (2011). p.3.

Before that though, one simple way of side-stepping Plantinga's argument, for current purposes, would be to reiterate that this thesis focuses on methodological, not ontological, naturalism, and so the assumptions Plantinga alleges to form the basis of his attack on naturalism do not hold. Plantinga targetted ontological naturalism, which is a worldview that makes metaphysical claims concerning non-empirically accessible objects. The particular metaphysical claims that Plantinga attributes to it concern the purely physical nature of the mind and the non-existence of God. Methodological naturalism, however, explicitly avoids controversial metaphysical propositions, as was seen in chapter 1. Michael Ruse is one stout defender of that position. He states coherently the case that in order to 'do' science, and certainly to theorise Darwinian evolution, methodological naturalism suffices.[300] Despite dissidents, I mostly agree that the scientific method can be carried out meaningfully, leading us to evolution, from methodological naturalism. This assists attempted debunkers, and indeed all evolutionary biologists, because their work, insofar as it is methodologically naturalist, is not directly susceptible to Plantinga's EAAN.

Yet his argument retains relevance because even under methodological naturalism, there are presuppositions of godlessness (inasmuch as God does not intervene in natural laws) and physicalism (supernatural causality is ignored). They arise as a consequence of the scientific worldview that expects uniformity and causal closure. As discussed in the introduction, and as Plantinga could plausibly argue, EDAs themselves make practical assumptions, by relying upon evolutionary science. The key propositions Plantinga took to be part of naturalism, which coaxed the worldview into a quandary, were assumptions that God does not play a causal role in the evolutionary process, and that beliefs can be equated to physical processes. As these propositions do somewhat underly the arguments that are to come, a form of methodological naturalism coherent in the face of Plantinga's EAAN must be found before religion can even begin to be debunked. Furthermore, even if one maintains that naturalism carries no problematic metaphysical assumptions there is still cause for concern. Plantinga's sort of scepticism, echoed by philosophers such as Stephen Stich, that evolution does not produce truth-tracking faculties as it is concerned only with fitness, is common. If true it could mean that any EDA is self-defeating, because relying upon evolution damages confidence in necessary faculties.[301]

Wilkins and Griffiths are not only alive to the danger of self-defeat, but believe a Faculties EDA can be turned from a weakness into a strength. They posit the concept of a 'Milvian Bridge' in response. The Milvian Bridge is an epistemic principle stating that true beliefs, by virtue of their truth, must carry evolutionary benefit, otherwise we cannot know the faculties that produce them are reliable.[302] Wilkins and Griffiths base the principle on the

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[300] As discussed in the introduction, critics such as Griffin and Mahner make valid points, but Ruse shows methodological naturalism remains sustainable, partly by responding directly to Plantinga's attacks. Michael Ruse, "Methodological Naturalism under Attack" *South African Journal of Philosophy* (2005); Griffin, *Religion and Scientific Naturalism.* (2000). ch.1; Mahner, "The role of Metaphysical Naturalism in Science." p.22.

[301] Stich states outright that "natural selection does not care about truth" Stephen Stich, *The Fragmentation of Reason: Preface to a Pragmatic Theory of Cognitive Evolution* (1990). p.62.

[302] John S. Wilkins and Paul E. Griffiths, "Evolutionary Debunking Arguments in Three Domains: Fact, Value, and Religion" in *A New Science of Religion*, ed. Gregory Dawes and James Maclaurin (2013). pp.2-3.

Battle of the Milvian Bridge, during which the soon-to-be Roman Emperor Constantine used Christianity to inspire his troops to victory over their pagan opponents thanks to a last-minute conversion, claiming Rome shortly thereafter. This is dubious history: contemporary evidence cannot prove Constantine was yet Christian at the time of battle.[303] But the intended meaning remains and may yet be good philosophy. The supposed meaning is that it was Constantine's noble Christianity that allowed him to win the battle, because God delivered triumph to his soldiers, as believers in true religion. Thus, true religion, *owing to its truth*, conferred benefit in the form of victory in battle. This is also Genghis Khan's view, familiar from the chapter's outset. By equating evolutionary benefit and victory in battle, Wilkins and Griffiths' epistemic principle is exemplified.

The Faculties argument, when it is later used to attack religion, hangs largely on the notion that Constantine and Genghis are incorrect, and "no Milvian bridge is available for religious beliefs".[304] Hence, they can debunk religion, because truth and evolutionary success are unconnected, so the faculties that provided us with religion need not be truth-tracking, making them unsuitable for justifying religious beliefs. The expression 'crossing the Milvian Bridge' means finding a connection between a faculty's ability to track truth and its evolutionary success. This is necessary because, according to the principle, faculties whose truth was unnecessary for their evolutionary development are unlikely to be reliable. As already established, the process of natural selection does not consider how well faculties track truth, so it is only when fitness and reliability are clearly linked that a faculty can pass Wilkins and Griffiths' test, and produce justified beliefs.

Defending Science

The Milvian Bridge (henceforth MB) is first put into service by Wilkins and Griffiths as a tool to stymie evolutionary scepticism against commonsense and empirical facts. They build an MB to connect evolutionary success of empirical facts and commonsense beliefs with their reliability. By displaying the reliability of faculties such as these, they aim to ensure the coherence of the entire scientific project. This is because science, as Wilkins and Griffiths (plausibly) conceive of it, depends upon reliable faculties of inference, sense and mathematics. They believe their epistemic principle articulates a tenable link between these faculties' evolutionary success and their tracking of truth, which would defend science by demonstrating that humans have evolved to have reliable 'scientific' faculties.

Their defence applies to all organisms with complex sensory organs and mental abilities. It is best demonstrated through an example. Imagine a roadrunner bird (*Geococcyx californianus*) is being chased by a coyote, a natural predator, towards a tree. The roadrunner has climbed this tree before to escape, but must approach it from a specific angle at a specific speed in order to do so. Firstly, the roadrunner must spot the coyote and the general surroundings, including the tree. This is not much use, though, without the

[303] Ross Cowan, *Milvian Bridge A.D.312: Constantine's Battle for Empire and Faith* (2016).p48.
[304] Wilkins and Griffiths, "Evolutionary Debunking Arguments…" (2013) p.10.

corresponding recognition that 'coyote = threat = enact flight response'; this is evidence of inferential reasoning. Next, the roadrunner must remember previous occasions in which the 'climb the tree to survive' hypothesis was tested and found to be successful. Of course, I am imposing over-rigorous scientific language on the thoughts of the roadrunner, but there must be memory, and a recognition that this is a similar situation in which similar rules apply, just as when scientists seek to repeat experiments. Finally, the fleeing bird must calculate how fast it needs to run and at what angle, which involves rudimentary mathematical calculations.

Only if all these thought processes are completed in a way that tracks the objective truth of the world around the roadrunner will it survive. The empirical faculties must accurately represent the way the world is. The inferential logic must correlate to the reality (i.e. if the flight response gives the best chance of survival then inferential logic must take the bird's thoughts from danger to flight). The scientific logic must correlate with what has in fact happened before and what is likely to happen again. And the mathematics of the required velocity and angle must correlate with the correct angle and speed that permits climbing of the tree. Reliable faculties in certain domains are likely, due to natural selection, because they promote adaptive behaviours. That is the fundamental notion underlying the Milvian Bridge principle, which undergirds a naturalistic defence of scientific faculties.

Although there needn't be a totally perfect mapping from truth to faculty product, the better the correlation the better the chances of survival (up to a point). One can formulate a feasible story about a roadrunner that has faulty faculties in one or more areas and yet survives coincidentally because its mistakes cancel out or were not costly, but on a consistent basis it is only when these faculties approximately track truths about the world that they provide pragmatic advantages. While there is a (minimal) chance that the roadrunner will be able to climb the tree by luck, over several variations on this scenario and many years of potential evolution, faculties that accurately relay information about the world will prove more beneficial than those that do not. Belief-forming faculties whose object is the world were not developed to provide inaccurate information, because that would be a maladaptive waste of energy.[305] Accordingly, Wilkins and Griffiths can cross the Milvian Bridge and assert the reliability of faculties grounding scientific beliefs.

As already discussed, evolution is a complex theory that requires some non-empirical principles to maintain integrity, such as uniformitarianism. Nevertheless, it is constructed from evidence of how organisms interact and develop, and how they did so historically. Moreover, the non-empirical propositions are inferential beliefs, which could be selected for, as such faculties increase fitness meaningfully (for example, knowing events occur uniformly allows a hunter to error correct if he misses his first shot at prey). Thus, the main notions of the theory of evolution can plausibly be known using faculties that pass Wilkins and Griffiths' test. The MB principle secures the reliability of scientific faculties.

[305] For more on selection of belief-forming faculties, see: Stephen Downes, "Truth, Selection and Scientific Inquiry," *Biology & Philosophy* (2000).

The simple example of the roadrunner and the coyote applies to almost any given organism across evolutionary history. Though it is truncated, it is sufficient to demonstrate that, notwithstanding improbable situations, there is a Milvian Bridge to connect reliable 'scientific' faculties with evolutionary success. That MB disrupts Plantinga's attempt at debunking because it undermines his premise that evolution is a process that *only* brings about fitness, even when it comes to belief-forming faculties. Fitness is indubitably the main driver of evolution by natural selection, but the MB shows mathematical, empirical and other key faculties must be approximately accurate to be produced by Darwinian evolution.[306] Plantinga stated that a belief-forming process could be adaptive and yet unreliable. For the faculties that have been specified, Wilkins and Griffiths show such a thing is highly improbable. The Milvian Bridge principle implies certain world-involving faculties *must* be truth-tracking if they are to have evolutionary value, and thus persist. Hence, the fact that humans possess such faculties all but necessitates that they reliably provide us with truths about the world. Therefore, EDAs reliant upon evolved faculties seem initially resilient to the allegation that they cut off the branch on which they sit.

Debunking Religion

Having repelled Plantinga's attack on their foundations, debunkers can use the same structure in their EDAs *against* religion, turning Frankenstein's monster against him. After using the MB to mitigate the possibility of self-referential incoherence, Wilkins and Griffiths turn to religion, where the principle can fulfil the second premise of the structure enumerated above. It is still true that the primary purpose of Darwinian evolution is to increase fitness.[307] Hence, the pair maintain that the MB principle applies to all classes of beliefs. Despite its protection of natural facts, there is no guarantee that religious faculties will be found reliable. For a faculty to be termed reliable, given the typical results of natural selection, it must be obvious that its truth-tracking nature is adaptive. Wilkins and Griffiths significantly assert that there is no connection between the evolution of religious faculties and their ability to track truth reliably, because religious beliefs could have come about without any requirement of their truth value. Hence, religious faculties fail the test prescribed by the MB principle and religious beliefs thus spring from an unreliable source, so are allegedly unjustified, meaning they are debunked.[308]

Wilkins and Griffiths, in common with other Faculties debunkers, thus use CSR not only to support the first premise of the argument, but also as evidence pointing towards the second (that religious faculties are unreliable) too. The key point of note for thinkers using the evolution of religion in this way is that there is no *need* for religion to be true in order for it to emerge and persist (this is not equivalent to Aetiological EDAs stating explanation supplants truth of religion).[309] To fail the Milvian Bridge test, one need not assume that

[306] Wilkins and Griffiths, "Evolutionary Debunking Arguments…" (2013) pp.5-6.
[307] This notion, and its limitations, are discussed by: A. W. F. Edwards, "Maximisation Principles in Evolutionary Biology" in *Philosophy of Biology*, ed. Mohan Matthan and Christopher Stephens (2007).
[308] Wilkins and Griffiths, "Evolutionary Debunking Arguments…" p10.
[309] Wielenberg. "EDAs in Religion and Morality". (2016). p.8.

religious beliefs are false (which would of course be question-begging), only that their truth or falsity is separate to the reasons for their evolution. Given the definitions of 'faculty' and 'explain', chapter 2's evidence on the origins of religion is encouraging for the possibility of explaining how religious faculties are formed without recourse to reliability.

That empirical support functions as Wilkins and Griffiths' validation of premise 2 of the Faculties EDA. Consider some key explanations of religion. The biological version of events presented by Crespi and Summers treats proliferation of religion as a consequence of the inclusive fitness it provides. Meanwhile, the Barrett-esque psychological view explained religion's origin by talking about niches and mechanisms in the mind that produce it. The Sosis-style explanations of religion refer to a multi-level matrix of factors, but certainly do not include objective truth in their models. These are approximately representative of a range of scientific explanations, and none talks about the truth of religion. In fact, no naturalistic explanation that deserves serious scientific consideration, i.e. none of those that were discussed in chapter 2, discusses truth. All scientific explanations refer to material factors such as fitness or neurology, rather than metaphysical truth, so it seems reasonable to say, at least initially, that explaining the origin of religious faculties, and thus religious beliefs, does not necessitate their veracity.

The extent to which it is meaningful even to discuss 'religious faculties' is controversial. We considered earlier that a faculty is a mechanism or process that produces beliefs. But many, such as Dawes and Maclaurin, would point out the absurdity of arguing religion stems from any singular process or mechanism.[310] The idea of a religious faculty as a HADD in the brain, or as a singular module that outputs solely religious beliefs, is indeed ridiculous. It is perfectly sensible, however, to use 'religious faculty' to refer instead to whatever mixture of causes happens to result in religion. Just as Aetiological debunkers need not be committed to a singular explanation of religion, so long as religion is explicable, so too Faculties debunkers need not pick out a specific faculty, given it is plausible that religious beliefs are produced in an explicable way by some faculty (or faculties), which in turn influences human behaviour. To my mind, this is uncontroversial, because even if a *sensus divinitatis* is what causes religious belief through an entirely non-physical process, that sense could still be described as a religious faculty and would influence behaviour, making it nonetheless susceptible to evolutionary forces.[311]

The salient point for an EDA is that whatever bestows religious beliefs upon humans must have evolutionarily meaningful effects. Seeing as religious beliefs are a major driver of behaviour, like empirical beliefs are, and that behaviour can be adaptive or maladaptive, it is thus entirely reasonable to discuss 'religious faculties' in the context of evolution. The same also applies for 'moral faculties' or 'metaphysical faculties', where it might initially seem ridiculous to distil a complex phenomenon to something that sounds as reductive as a 'faculty'. But equally, by understanding that 'faculty' here stands in for whatever physical or non-physical combination of factors work together to produce beliefs, moral

[310] Dawes and Maclaurin. "What is Religion?" (2013). pp.4-7.
[311] As argued by, for example: Alston, *Perceiving God* (1991).

and metaphysical faculties can be referred to as meaningful, extant mechanisms/processes. Given what has already been said about the way in which terms like 'religious belief' are being used in this thesis, it would be foolish to suggest that religious beliefs do not affect behaviour. Thus, they are sensitive to the forces of natural selection, as different religious beliefs may have different fitness outcomes. Since that is the case, Wilkins and Griffiths' wish to discern the ramifications of evolved religious faculties is entirely legitimate.

The lack of a Milvian Bridge to connect the truth of religious faculties with their evolutionary success is the vital view that validates Wilkins and Griffiths' attack on religious beliefs. This is how they evidence the second premise of the generic faculties EDA set out above, because any faculty that fails the MB test is an unreliable guide to truth; beliefs based on it are unjustified. Wilkins and Griffiths take the first premise of their EDA to mean that religious belief can be explained by faculty X without resort to faculty X's truth-tracking ability. So, accepting that the MB epistemic test is sound, one must retread the explanations of religion in search of evidence. If, for example, my synthesis explanation of religion given in chapter 2 is deemed adequate, then religion's truth is not required for its evolution. The closest one *could* get to such an explanation might be to say that only true religion could perfectly fill a niche in the human mind. But this is unscientific conjecture without evidence, and it is certainly possible for directly contradictory religious beliefs to fill the niche equally well in the human mind, further suggesting that truth is irrelevant. Religious belief certainly seems to be, on the whole, fitness-enhancing (apart from in certain fringe scenarios where it causes conflict, or makes people act more dangerously/abstain from reproducing) but its fitness-enhancing nature cannot easily be linked to its truth, so religious faculties do not cross the Milvian Bridge.

Wilkins and Griffiths apply their argument to the domain of value as well as the domain of religion. That is, they believe that the same faculties-based EDA that they use to debunk religion can also be used against morality, an area of philosophy in which EDAs are commonplace. Beliefs based in moral realism typically grasp at metaphysical subject matter in the same way as religious beliefs do. In another similar stroke, one can explain the human propensity to hold moral beliefs without needing to state that they are true, as was seen in chapter 2. For example, it is beneficial for humans to hold moral beliefs that predispose them towards co-operation and against violence, because that increases their inclusive fitness. But that does not in any way suggest that the moral beliefs towards which we are driven by selective forces are veridical. There is no *prima facie* MB to connect the pragmatic success of moral beliefs and faculties with their objective truth. Hence, using an almost identical argument, Wilkins and Griffiths can turn their debunking force on the domain of real ethical values as well as religious doctrine.[312] Indeed, there may be many other realms of enquiry affected by Faculties EDAs, but these two major metaphysical faculties are the first targets of Wilkins and Griffiths in their debunking attack.

[312] John Wilkins and Paul Griffiths, "Crossing the Milvian Bridge: When Do Evolutionary Explanations of Belief Debunk Belief?" in *Darwin in the Twenty-First Century: Nature, Humanity, and God*, ed. Phillip Sloan, Gerald McKenny, and Kathleen Eggleson (2015). p.22

The Milvian Bridge test, having grounded the justification of scientific beliefs, informs Wilkins and Griffiths' claim that "religious beliefs emerge as particularly vulnerable to evolutionary debunking arguments".[313] Religious faculties are not known to be truth-tracking, making religious beliefs unjustified by either externalist or internalist models of justification. While "debunking is not disproving", Wilkins and Griffiths blatantly believe their EDA ought to undermine religious believers' confidence in their beliefs.[314] Indeed, Wilkins states that "We can therefore conclude that religious belief qua religious belief is debunked by EDAs in the absence of good reason to think otherwise."[315] Therefore, it is imperative that anyone who wishes religious beliefs to be justified answers the EDA. No MB connects religious truth-tracking with evolutionary success to show that evolved religious beliefs must, or even might, be truth-tracking. The Milvian Bridge principle will be subject to closer examination later in the chapter but for now is crucial in defeating self-defeat and securing premise 2. It appears, therefore, that Wilkins and Griffiths strive beyond avoiding self-referential incoherence. They also fortify both premises of the Faculties EDA, meaning that the debunking of religious belief proceeds, as the faculties that produce religious beliefs are shown to be unreliable guides to justified belief.

Other Variants

John Wilkins and Paul Griffiths are not the only philosophers to present a faculties-focussed evolutionary debunking argument against religious beliefs. This and next chapter concentrate on their argument because I believe it is the strongest version available, skirting potential self-defeat and posing problems for metaphysical beliefs. Other variations on the theme of Faculties EDAs do exist and merit discussion though, to broaden the conversation beyond the two philosophers described so far. These other debunkers are all contemporary thinkers, who have largely proposed arguments within the last decade or so, demonstrating the novel and growing nature of the field. Their attacks fit the generic style of argument set out above, but each has a different manner of championing it, especially the second premise of the argument, in their efforts to debunk.

A 'De Jure' criticism of theism, one that rules out knowledge of religious beliefs as a possibility rather than arguing against specific aspects, is proposed by philosopher Liz Goodnick. Her criticism can partly be understood as a response to Plantinga's reformed epistemology, which explicitly self-identifies as a De Jure argument *for* the warrant of religious beliefs, but her critique also serves as a Faculties EDA. Goodnick posits that faculties that have evolved, like the ones we possess, did so primarily for the purpose of increasing fitness rather than producing truths.[316] She then argues religious faculties evolved due to natural selection under those conditions. This leads her to conclude that religious faculties were selected due to their ability to increase fitness, rather than to

[313] Wilkins and Griffiths, "Evolutionary Debunking Arguments…" (2013). p.12.
[314] Wilkins and Griffiths, "Crossing the Milvian Bridge…" (2015). p.26.
[315] John Wilkins, "Is Religion or Science Debunked by the Evolution of Cognitive Faculties?" in *Advances in Religion, Cognitive Science, and Experimental Philosophy*. (2016). p.15.
[316] Liz Goodnick, "A De Jure Criticism of Theism" *Open Theology* (2016). pp.5-8.

produce truths, making them unreliable and beliefs based on them unjustified. She therefore believes that she has debunked religion by exposing the unreliability of the faculties that underly its beliefs.

Goodnick's argument is an almost archetypal example of a Faculties EDA. It fits the generic structure nearly perfectly by using evolution to question the reliability of religious faculties. It lacks the finesse of Wilkins and Griffiths' proposal, however, and commits some of the same crimes that Plantinga's EAAN did. Goodnick's central claim is that mechanisms that did not primarily arise for the purpose of supplying truths are unreliable, due to the focus of natural selection.[317] Her claim resembles Plantinga's (in reverse) and is as general as his. Thus, it can be applied to empirical and inferential faculties just as his was. Hence, Goodnick's argument is self-defeating- she cannot form premises about evolution if her own argument succeeds, and cannot even use the commonsense logic that she requires to debunk religion. As seen, the solution to this problem is to edit Goodnick's premise about faculties arising from natural selection being selected primarily for their fitness rather than their truth. By postulating an epistemic principle to arbitrate on evolution's effect on faculties, Wilkins and Griffiths show it is beneficial for certain faculties to be selected for their truth-tracking capability, such as empirical faculties. This crucial alteration prevents self-referential incoherence. Hence, while Goodnick produces a fair attempt at debunking, Wilkins and Griffiths' version is a stronger iteration of an EDA focussed on faculties.

Robert Nola returns to relevance here, as he sets out a further attempted debunking of religion from a fresh, faculties angle. Nola again utilises HADD theories to proclaim that due to error management theory, it is beneficial for humans to have religious faculties even if they are false.[318] Additionally, he argues religious faculties do in fact produce many false beliefs. Nola then argues that the simplest explanation is therefore that religious faculties are "off-track".[319] This has echoes of Braddock's sensitivity Aetiological EDA. Nola's position is too much like those arguments in not providing strong reason to move from an explanation to falsehood. Nola's claim that faculties are off-track requires further support, because without knowing what religious beliefs would look like if true, one cannot begin to call the faculties that produce them off-track. Furthermore, Nola discusses in detail specific cognitive mechanisms that might have resulted in the origin of religion. This leaves him rather susceptible to changes in the scientific facts that are likely, and overly attached to a specific, somewhat reductive model of the production of religious beliefs. For these reasons, despite Nola's support for the general idea of Faculties EDAs, he will not be specifically brought into dialogue.

It would be remiss to survey the expansive and expanding genre of EDAs without consideration of its effects in other fields. Analysing the way other spheres of thought posit and attack EDAs supplies useful notions that can be transferred to philosophy of

[317] Ibid. p.6.
[318] Nola, "Do Naturalistic Explanations…" (2013). p.7.
[319] Ibid. p.8.

religion. The field of moral philosophy has faced the consequences of evolution since Darwin, but not until recently did the discussion reach maturity. Sharon Street's 'Darwinian Dilemma' is an influential faculties-focussed attack on moral realism (approximately, the view that moral values are 'real', i.e. objectively, metaphysically extant). The dilemma that she points out is between evolution and realist values. Street argues that realists must "either accept or deny a relation" between selective forces and real, normative truths, given the strong scientific evidence that evolution has influenced human evaluative judgements of that kind.[320] If the realist denies a relation, saying that evaluative truths are objective and not in any way influenced by natural selection, then the fact that Darwinian selection is in reality a major factor altering our evaluative judgements means that humans must have distorted faculties of moral knowledge, whose reliability can be called into question.

The other horn of the dilemma is to argue that there *is* a relation between selective forces and evaluative truths, perhaps by saying that humans have over time developed to track moral truths. Such an argument is in essence a claim that moral faculties cross the Milvian Bridge, because by virtue of their truth they are adaptive. Street finds this uncompelling, stating that an attempt to escape the dilemma in this way necessitates an empirical claim about why humans evolved in the manner that they did.[321] This claim is less strong than the standard evolutionary story, so fails on evidential grounds. There is also a significant epistemic gap between the assertion that humans have evolved to track moral truths and a compelling reason to understand exactly why tracking moral truths is beneficial. As has been remarked upon repeatedly, the process of natural selection selects based on physical characteristics and behaviours rather than metaphysical values. Hence, the moral realist is trapped on the horns of Street's dilemma, unable either to accept or deny the link between faculties and pragmatic success that would enable him or her to escape.

The relevance of the Darwinian dilemma for religion is blatant. What Street mentions with respect to moral judgements and evolutionary forces applies for religious judgements too, inasmuch as they purport to rationality. The defender of rational religious belief, when faced with Street's argument, is posed the same question that Wilkins and Griffiths posed- either evolutionary forces do not have a causal impact on the production of beliefs or evolutionary forces mould metaphysical truth (or vice versa). Both conclusions are unsavoury as one must deny science or doctrine respectively to hold them, so a response is necessary to defend the justification of religious beliefs. I find Wilkins and Griffiths' presentation more rigorous and useful for our purposes, as I think the epistemic test they set clearly avoids potential problems of self-referential incoherence and consistency across belief classes, while specifying how religious belief is affected. Nevertheless, their style of argument owes much to Street's attack, and we will consider objections to Street from moral realists when looking at potential flaws of Faculties debunkers.

[320] Sharon Street, "A Darwinian Dilemma for Realist Theories of Value" *Philosophical Studies* (2006). p.13
[321] Ibid. p.21.

Each of these Faculties EDAs has its own individual quirks and novel suggestions that develop the overall programme. The reason I have primarily focussed on Wilkins and Griffiths' argument, despite the relative brevity with which they set it out and aside from advantages already mentioned, is because I find their argument to be the most compelling in clarifying a consistent vision. They do not merely attack religion and morality, they also set an epistemic test that protects naturalism from self-defeat and that can be used in various epistemological scenarios. Alongside the strengths of MB-based arguments, there are a few errors made by other similar debunkers that were detailed above and which I think Wilkins and Griffiths are most effective at avoiding. For these reasons, while elements from other presentations of Faculties EDAs will be addressed, the principal focus in future sections will be on Wilkins and Griffiths' version.

No True Debunking?

Theologians and philosophers who contest Wilkins and Griffiths' dismissal of their beliefs based on unreliable faculties have several lines of defence. In this sub-section, I will interrogate the most immediate possibilities- particularly addressing whether a Faculties EDA of this kind does in fact present a debunking threat to religious belief. Chapter 6 will survey a gamut of counter-arguments to EDAs but before viewing those, it is helpful to assess whether arguments such as Wilkins and Griffiths' coherently achieve their goals, on their own terms. One prominent possibility is to argue that, semantically speaking, the Faculties EDA does not in fact debunk religious beliefs as it aims to. A defender of religion might argue that the implication behind the use of the term 'debunking' of religion is that religious beliefs must become untenable. Wilkins and Griffiths' argument does not do any such thing. All it states is that religious beliefs are unjustified and likely false. Beliefs that do not require justification, then, are unaffected by this Faculties EDA, which cannot give a believer a compelling reason to reject beliefs that were formed without justification.

This initial defence is too clever for its own good. The definition of debunking is key here- *debunking is exposing the falsehood or irrationality within an idea or belief*. If there are certain religious beliefs that do not aspire towards truth, justification or rationality, then those beliefs cannot be debunked. But as was made clear in the introduction, this thesis' concern is beliefs that at least to aim to be justifiable and thus debunkable. The real question is- what more could an EDA possibly do to debunk? Wilkins and Griffiths' argument aims to expose the falsehood of religious beliefs by virtue of their unreliable faculties. It fulfils the generic argument cited above well enough that there is a meaningful challenge to the rational status of religious beliefs. So it suffices as motive to say that there is a threat of debunking of rational religious beliefs. Beliefs might still be tenable if one does not wish to admit rational counter-evidence, but such a defence need not trouble this enquiry.

Furthermore, the attempted debunking from Wilkins and Griffiths surpasses Aetiological attempts in important ways that distinguish and strengthen it. A structural problem that plagued Aetiological arguments, moving from premises to an actual debunking of beliefs, is not an issue for Wilkins and Griffiths. Rather than using explanations of religion as

evidence alone of its untruth, the MB style applies a sound epistemic principle that beliefs ought to be based on reliable faculties to be trusted, with evolutionary justification for their epistemological test. This convincingly escapes the genetic fallacy by providing a superior argument for specific reasons *why* the cause of a belief affects its truth value.

Another potential structural problem with Wilkins and Griffiths' faculties-based attack is admitted by the duo themselves. They say: "if there are independent reasons for religious belief, their cogency is not removed by the fact that religious beliefs have evolutionary explanations".[322] One could mount a theistic response that aims to work within this quasi-loophole in the Faculties EDA. We have already seen that there is no obvious Milvian Bridge for religious beliefs inasmuch as a demonstrable link between the truth of religious beliefs and their evolutionary benefit would provide. Yet natural theology holds promise for constructing a more sophisticated, evolutionarily justifiable, route to religion. Just as Wilkins and Griffiths shored up some complex scientific concepts by founding them upon known reliable faculties, a defender of religion may be able to do the same.

Natural theology aims to use reason and evidence from nature to prove God's existence. Evidence from nature is typically empirical, and the reasoning is inferential in a similar way to reasoning that can lead one to posit scientific principles. Hence, natural theology utilises faculties that pass the MB test. The extent to which God's existence can be 'proven' by natural theology rather than simply made more probable varies with its application. For example, Aquinas' Second Way tries only to increase the likelihood that God exists, in the light of evidence, while René Descartes' meditation is meant to be demonstrative proof of God's existence. These two monumental Christian philosophers posit just a few of the multifarious natural theological arguments for God's existence. I use these two arguments as case studies, not because they are necessarily the most convincing, but because they occupy opposite ends of a spectrum of arguments, from the a posteriori and probabilistic, to the a priori and certain. If a defence of religion wishes to work within the MB system, looking to natural theology might present the best possible chance of doing so.

Aquinas' Second Way, a cosmological argument constituting one of his five paths to God, was not intended as demonstrative proof of God's existence. It ought, however, to give one some justification for belief.[323] The argument states that: 1) there is an ordered series of efficient causes; 2) nothing can cause itself; 3) there cannot be an infinite series of causes.[324] Therefore there must be a first efficient cause, which cannot be self-causing, so is uncaused. An uncaused cause is what we call God, so God exists. In his own words, Aquinas says: "There is no case known (neither is it, indeed, possible) in which a thing is found to be the efficient cause of itself; for so it would be prior to itself, which is impossible... Therefore it is necessary to admit a first efficient cause, to which everyone

[322] Wilkins and Griffiths, "Evolutionary Debunking Arguments…" (2013). p.12
[323] Karen Kilby, "Philosophy" in *The Cambridge Companion to the Summa Theologiae* (2016). p.9.
[324] This formalisation is adapted from: Timothy Pawl, "Aquinas' Five Ways" in *Just the Arguments: 100 of the Most Important Arguments in Western Philosophy*, ed. Michael Bruce and Steven Barbone. (2011). p.5.

gives the name of God."[325] It is fair to say that from faculties that pass the MB test, we could infer all three premises, and the first conclusion. The problem comes in stating that an uncaused cause is God. Part of the strain with Aquinas' ways is that though the first steps are elementary and based in the world, one must eventually reach God. This leap relies on faculties that are not discernibly truth-tracking, because the statement 'a first efficient cause is God' is a metaphysical one- knowing its truth value does not have a discernible adaptive advantage. Thus, Aquinas' Second Way cannot ground itself fully within the framework provided by Wilkins and Griffiths, and so does not offer hope for Christians defending themselves from EDAs.

Descartes' ontological argument starts from the premise that God is a perfect being. A perfect being, he asserts, must have every possible perfection. It is more perfect for such a being to exist than not, so the perfect being must possess the perfection of existence. Therefore the most perfect being, God, must exist.[326] Descartes' argument is analytic and necessary, i.e. by pure analysis of the concept of God, the result of God's existence happily emerges, and nothing could change that conclusion given the premises. One problem with using this argument as the basis for natural theology post-EDAs is that many religious believers dislike it, and it has been riddled with difficulties as an argument throughout its history.[327] That aside though, the viability of the ontological argument as a response within the Milvian Bridge framework raises the question of whether semantic concept analysis is a faculty which, if found to track objective truth, would enhance evolutionary fitness.

The matter at stake here is related to the nature of religious language. If it is cognitive (aiming to represent the world accurately), then concept analysis can be evaluated like an empirical or inferential faculty. If it is non-cognitive, then there is no attempt at truth to be considered.[328] This contrast relates to whether the subject of religious beliefs is real (as was made clear earlier, this thesis broadly assumes that it is). Regardless, it is adaptive to be able to understand and manipulate mutual definitions accurately, in order to ease communication and sociality. But as Ludwig Wittgenstein might suggest, such concept analysis is useful only within certain language-games and cannot express anything meaningful outside its form of life.[329] The nature of Darwinian evolution is such that it would not select for external meaning, but rather internal coherence. Hence, considered under the conditions of the MB test, the non-cognitive model of religious language is the one that matches the activities of natural theology best. Semantic concept analysis is a faculty that could track truths, but only truths as they are commonly understood within a context. Knowing that religious language refers accurately to metaphysical objects outside

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[325] Thomas Aquinas, *Summa Theologica*, edited and translated by Fathers of the E.D.P. (1981). I.2.3

[326] *Descartes. Meditations* pp.31-33

[327] For example: Smart and Haldane, *Atheism and Theism* (1996). pp.36-8

[328] For these definitions and further discussion of the cognitive/non-cognitive distinction in religious language, see: William Alston, "Religious Language" in *The Oxford Handbook of Philosophy of Religion*, ed. William Wainwright (2005); Michael Scott, "Realism and Anti-Realism" in *The Routledge Handbook of Contemporary Philosophy of Religion*, ed. Graham Oppy (2015).

[329] Ludwig Wittgenstein, *Philosophical Investigations*, trans. G.E.M. Anscombe, P.M.S. Hacker, and Joachim Schulte (2009). e.g.§7,§133,§353

that social context (which one would need for the cognitive model) is not a faculty that crosses the MB. Given that natural selection is focussed on providing benefits within this world, without external reference, and the ontological argument relies upon the transcendent reference of the terms it analyses, the ontological argument cannot be constructed solely from beliefs that pass Wilkins and Griffiths' epistemic test.

The totality of natural theology is struck by this difficulty so long as a believer tries to fit within the framework of selected-for truth-tracking faculties, while also accepting that his belief refers to an objectively extant being or phenomenon. The MB, as established earlier, is based in empirical fact, evaluating only on what we know for sure grants fitness in the physical world. This pivotal point of the meta-epistemic principle stymies natural theology. We cannot know whether our faculties for tracking metaphysical truths, such as the existence of God, are reliable.[330] Hence, although the abovementioned arguments can be perfectly sound while building on solid evidence from faculties that are not debunked, the moment they attempt to make the step to God a metaphysical statement is necessary. In both observed arguments that statement involved a definition of God that had to correspond with objective reality. But to confirm that would be to rely on a process that cannot be verified as truth-tracking, because metaphysical faculties telling us about God evolve for numerous non-truth-related reasons.

Attempts to construct a religion within the bounds of EDAs are holed below the water-line by this impossibility of crossing the Milvian Bridge. But with what sort of limited religion would they provide us, even if they succeeded? Working within Wilkins and Griffiths' framework, religion would have to be largely based upon material facts stemming from reliable faculties. This would leave no room for spirituality or mysticism, which would have to be denounced as unjustified. Indeed, very little that most believers would recognise as religion would survive. One could have a mere community of 'believers' who very carefully construct bare beliefs about God's existence but little else, with most religious doctrines discarded for not crossing the MB. Hence, working within the Faculties debunkers' framework is a fatally flawed scheme, which falters on its merits and fails fundamentally. Aiming to find a structural problem in order to accept Wilkins and Griffiths' argument but claim that they don't actually debunk religion has ultimately demonstrated the validity and threat of their EDA. Counter-arguments to it may of course be possible, but at the very least it does seem as though the argument, if accepted as sound, debunks religious beliefs in a meaningful way on its own terms.

Given that the EDA proposed by Wilkins and Griffiths does indeed present an initial debunking challenge to religious beliefs, if it succeeds, it merits further investigation. These initial sub-sections have allowed me to unpack and expand the motivation behind Faculties EDAs, and their machinations. This included Plantinga's early attempts, moves from there to secure naturalism and then on towards debunking religion, and various alternative arguments that fit the same, broader structure. Although there are a number of

[330] Or other metaphysical beliefs, as detailed in the introduction. Although the focus has been on Christianity, these points hold true for other faiths.

ways of positing these types of arguments, I have settled on John Wilkins and Paul Griffiths' version due to its cogency and fluency in positing weaknesses in the reliability of religious faculties. Their portrayal of an EDA focussed on faculties lays secure foundations and consistently builds from them to destabilise religion.

Defeating Self-Defeat

Prior to assessing counter-arguments that target specific premises, or the entire structure of the Faculties EDA, I shall complete one final, key preliminary. If the argument that Wilkins and Griffiths advance is self-defeating, then it is nearly worthless. I thus seek in the coming sub-sections to deny detractors who allege that the argument (or, more specifically, the Milvian Bridge principle) is self-referentially incoherent. I do so not merely because by highlighting the strength of the Faculties EDA I heighten the need to address it. Additionally, the Milvian Bridge principle is an intriguing and important means of epistemologically adjudicating between beliefs based on the evolutionary history of the faculties that produce them. It is crucial to the argument that I postulate in chapter 7, and so by considering objections to its coherence and validity here I build further foundations for my own evolved epistemology, in particular premise 3.

As earlier explicated, the keystones upon which Wilkins and Griffiths depend for evading Plantinga's EAAN and defending their principle's coherence are 1) that certain human faculties arose to track truth, and 2) that it is possible to know 1) from identifiably truth-tracking faculties. So the MB principle indubitably requires that evolution functions in a Darwinian manner, causing humans and other organisms to have truth-tracking faculties in specific circumstances. Moreover, humans must be able to use those faculties to ascertain the basics of Darwinian evolution by natural selection. Then, we must have inferential faculties to move from that statement to a principle such as the MB accurately. There are several potential issues arising here, the most pressing of which is that Plantinga and others think it impossible to evidence statement 1 (or, by the same token, 2), without assuming the existence of God (and some of His attributes and actions). If they are correct, then Wilkins and Griffiths' idea loses its argumentative force because in order to found it, one must assume God's existence. It would then be nonsensical to claim that due to that same argument humans are unable to justify belief in God. The Faculties EDA Wilkins and Griffiths propose must answer attacks on the coherence of naturalism to defeat self-defeat.

There is much afoot in Plantinga's arguments that naturalism is incoherent, including the broader Reformed Epistemology he wishes to propound, which was discussed in chapter 3.[331] The portion most relevant at the moment, and which ought to stand independent of the success or failure of Reformed Epistemology, is the EAAN that we considered as a starting point for Faculties EDAs earlier. While the Milvian Bridge principle seemed to

[331] Plantinga, *Where the Conflict Really Lies*. (2011). pp.8-12.
Plantinga, *Knowledge and Christian Belief*. (2015). pp.31-37.

counter it, Plantinga marshals more sophisticated arguments against a connection between evolved faculties and reliability, in defence of his EAAN.

Plantinga presses his attack against naturalism in his 2011 article 'Content and Natural Selection'. He denies that one can know a priori that true beliefs cause more adaptive behaviour than false ones. It is convenient to consider this matter a priori, so as to show that, as long as the evolutionary system is Darwinian, certain principles concerning organisms will hold true. Plantinga defines a belief as a mental structure with properties and content.[332] The neurophysical properties of the belief are what play a causal role in stimulating behaviour. Plantinga's attack is premised on his view that beliefs cannot "enter that [causal] chain *by virtue of their content*", because that content is separate from the properties and so does not fit within the frame of a belief's causal consequences.[333] This suits Plantinga's goal of decoupling belief content from the fitness it might provide, as content cannot be adaptive if it does not influence behaviour. He uses the example of a man fleeing from a tiger. What is adaptive is the behaviour of fleeing, not the belief 'there is a tiger, which is dangerous, so I should flee'- to exemplify this Plantinga points out that the adaptive behaviour could still come about if a person thought that the tiger was cute and thought the best way of petting it was to run away- the fitness outcome is the same.

The slightly odd example serves Plantinga's point well, that the content of the belief can be incorrect while still providing the desired behavioural outcome. He considers two potential theses of the machinations of human faculties that might offer the naturalist an escape from the EAAN. The first is the proposition that beliefs' content and properties are identical and physical (reductive materialism or RM) and the second is the proposition that properties differ from, but supervene on, content (non-reductive materialism or NRM). He believes neither works, and utilises a thought-experiment touched upon above to demonstrate as much.

Still considering matters a priori, Plantinga urges the reader to imagine the first creature ever to have beliefs. It is likely to have a mutation that distinguishes it from its fellows, permitting it to do so. These beliefs would have a content that makes them either true or false and properties that cause behaviour. Ultimately, Plantinga contends, whether this mutation is passed on to the next generation relies upon whether or not the behaviours caused by its properties are adaptive.[334] The process of natural selection is not one that is sensitive to belief content. The content of a belief is somewhat 'invisible' to the natural selection process (as genotypes are), what is 'visible' is the potentially adaptive behaviours caused by properties of beliefs (akin to phenotypes). Even if, as the reductive materialist claims, belief content is identical to its properties, both being the same physical structures, it is not the content portion for which natural selection selects. Thus, there could be a false belief with adaptive neurophysical processes attached to it. This would be replicated and passed on to future generations despite its falsehood. Hence, Plantinga states that RM

[332] Plantinga, "Content and Natural Selection." (2011). p.2.
[333] Ibid. p.2. Emphasis Plantinga's.
[334] Ibid. p.7.

does not show that belief content meaningfully influences belief properties. By the same token, Plantinga argues that NRM offers no better escape.[335] If there is a supervenience relation offered between content and properties rather than an equivalence relation, as with RM, then the critique he posits still applies. The fundamental point that Plantinga repeatedly states as the crux of his argument is that the belief's content is not what is adaptive or maladaptive, but rather its neurophysical properties.

Plantinga's point is a valid one, insofar as natural selection certainly has no sensitivity towards truth vales/reliable faculties in and of themselves. It becomes obvious how important it is to have consensus on the functions and teleology behind evolution. Both Plantinga and naturalists agree natural selection aims primarily at fitness. But Plantinga believes that, as a corollary, under naturalism it is impossible to state that evolution can generate anything other than fitness.[336] What naturalists must do to defeat his argument is find convincing reason why, given Darwinian evolution, natural selection can select for reliable faculties. Developing the argument in the direction that Plantinga has done means that simply asserting the connection between behaviour and beliefs, as Wilkins and Griffiths do in building their Milvian Bridge, is insufficient. Without a feasible connection between belief content and behaviour, the entire evolutionary investigation of epistemology must be sacrificed as self-defeating.

Responding to Plantinga

To escape Plantinga's attack relatively unscathed, naturalists must expand the concept of natural selection to include goals beyond mere fitness. This entails a relation between properties of beliefs and content of beliefs. Broadly, the correct strategy rejects Plantinga's accounts of RM and NRM, substituting in a different theory, which is sensible on its own terms and which permits naturalists to argue that natural selection does not produce just fitness, but also (in niche circumstances) furnishes organisms with reliable faculties.

Maarten Boudry and Michael Vlerick offer the first suitable rebuttal. The pair reject both reductive and non-reductive accounts of the link between belief content and properties. Instead, they draw a conceptual link between the two, noting that as a matter of course the two are intertwined.[337] This link is a little weak but is supplemented with the notion that properties of beliefs are irretrievably connected with the state of the world. They give the example of a human seeing that there is a bear in a cave, forming the belief 'there is a bear in a cave', and thus choosing not to enter that cave as a result, meaning the human is not eaten by a bear. Whether or not the behaviour 'don't enter the cave' (and thus the properties of the associated belief) was adaptive depended on the state of the world- only if there is a bear (or another danger) in the cave was the behaviour adaptive.[338] What will

[335] Plantinga, "Content and Natural Selection." (2011). p.9.
[336] Ibid. p.24.
[337] Maarten Boudry and Michael Vlerick, "Natural Selection Does Care About Truth" *International Studies in the Philosophy of Science* (2014). pp.6-7.
[338] Ibid. p.8.

be selected for, then, is possessing correct neurophysical properties to drive adaptive behaviour at the right time, which is dictated to the organism by circumstance. Properties match the environment, which drives content, embellishing the conceptual link. Boudry and Vlerick can remove the notion of 'content' altogether and still provide a schema that upholds a connection between reliability and fitness. Utilising the selective forces provided by the environment, they argue that because behaviours and properties must be adaptive for their environments, organisms' faculties must generate beneficial neurophysical properties in the relevant circumstances, which will inevitably cause correct content. Hence, Boudry and Vlerick assert a firm connection between the fidelity with which a belief (or a faculty) tracks its environment and the behaviours it causes.

The two philosophers also attack Plantinga's example of the first organism with beliefs. What seems at first to be a neat illustration of the primacy of properties over content in fact misunderstands the variant needs of organisms that don't have beliefs and organisms that do have beliefs. An organism that does not have beliefs, such as a daffodil, may not benefit from having true beliefs. The daffodil can be perfectly adapted to its environment without them. But once the first organism arose that had action-driving beliefs, it was imperative that those beliefs were accurate. This is because "action-directing beliefs, once adopted, are adaptive if true and harmful if not".[339] So Plantinga's example of the first organism to hold beliefs having inaccurate beliefs but beneficial neurophysical properties is impossible for Boudry and Vlerick. The first organism with mutations that permitted it to form action-driving beliefs would have died if those beliefs drove it to do things that were inappropriate for its environment, so for that adaptation to linger it must have been accurate. Additionally, Boudry and Vlerick firmly assert that the beliefs that humans (and most other animals that possess 'beliefs') have are "action-directing". That is, they cause actions to occur. For example, the human who sees a cave believes the cave provides shelter and acts on that belief. This key assertion makes their argument relevant for human knowledge, defending naturalism by stating that once organisms have belief-forming systems that drive actions, those beliefs must allow organisms to survive and reproduce their belief-forming systems, by causing behaviours that improve the organism's fitness.

Overall, Boudry and Vlerick's criticisms of Plantinga's EAAN are valid, if incomplete. They provide a useful defence of the coherence of empiricism in the face of attack. Given the costs of an organism having belief-forming systems, it makes sense that once it has such a system, the beliefs produced must be beneficial. Nevertheless, relying upon merely a conceptual link between belief properties and belief content is not ideal. Still, it has its strengths- due to the influence of the environment, it is not necessary for content to be an adaptively relevant factor, because the properties themselves must be appropriate for the situation, which means that the truth of beliefs matters for natural selection, de facto. As long as beliefs are driving actions, the actions that are driven accurately will tend to be more fit than those driven by wrong information. The most significant addition that Boudry and Vlerick bring to the debate is to focus on the primacy of the environment. For

[339] Boudry and Vlerick "Natural Selection Does Care About Truth." (2014). p.5.

evolutionary biologists the environment is a central focus, and that is no different for belief-forming faculties. Realigning the discussion towards the influence of environments on the development of organisms makes it clear that the production of beliefs is an activity whose reliability (matching the surrounding environment) has consequences for fitness. This in turn means that Boudry and Vlerick support the idea that it is a priori reasonable for an organism with beliefs (such as humans) to have largely reliable belief-forming faculties, when those beliefs drive behaviours that affect fitness in one's environment.

The 'conceptual link' that Boudry and Vlerick postulate between belief properties and content does substantial work to defeat Plantinga's EAAN, so it is essential that it be strengthened by more substantive argument to show that humans possess action-directing beliefs. Stephen Law does this in providing a further direct response to the EAAN, which does address the link between actions and beliefs. In a similar way to Boudry and Vlerick, Law postulates that "natural selection need not be blind to belief content".[340] Law uses the example of a human who believes he or she must walk 5 miles to collect water. Unlike other beliefs typically used as examples this is a belief that must be held continually and acted upon continually. It is easier for Plantinga to separate the behaviour of fleeing from the belief 'there is a tiger in front of me' than it is to separate the persistent behaviour of walking 5 miles in a specific direction, from the belief that doing so will provide benefit. This is because the former behaviour could happen coincidentally in isolation, but it is hard to imagine the latter happening without the belief's content causing it. In this way, Law fervently defends the real causal powers of content on actions and behaviours in which the organism then engages.[341] He posits that there are examples of behaviours that would not happen without corresponding belief contents, and therefore the neurophysical properties and behaviours of a belief should not be separated from its content.

Even if the link that Law believes to exist between properties and content is untenable, he nonetheless posits that the strength of natural selection will ensure that true beliefs are very likely to be selected for in any case. Along similar lines to Boudry and Vlerick, he offers the notion of "conceptual constraints"- the conceptual content of a belief is in fact constrained by the environment of its organism and its causal effect.[342] Behavioural outputs of organisms are constrained by the environment, as they must be adaptive. Given this indubitable fact, Law adds that a world-involving belief will thus almost certainly have the correct content. He argues that it makes little sense, given what we know of the behaviours of organisms, for them to act in ways that are consistent with the holding of certain beliefs, while believing something completely different. In Law's view, a human that repeatedly walked five miles in one direction for water, even if it began to do so for a reason completely separate to having a belief 'there is water five miles in that direction', will begin to hold that view nonetheless. Law aims to reverse the causality to demonstrate that Plantinga is wrong not only in his view that belief content and properties should be separated, but also in his view that doing so is a mortal blow for reliable faculties. By

[340] Stephen Law, "Naturalism, Evolution and True Belief," *Analysis* (2012). p.4.
[341] Ibid. p.5.
[342] Ibid. p.6.

arguing that one can work backwards from adaptive behaviour to likely reliable beliefs, Law believes he has shown that one need not even connect properties and content, but that reliable faculties arise inevitably for organisms with beliefs and adaptive behaviours.

Philosopher of religion Calum Miller responds to Law's rebuttal. He finds that "Law's objection is impotent against the EAAN" because it postulates unjustified and implausible auxiliary hypotheses to defend naturalism.[343] By this he means 'conceptual constraints' are additional evolutionary accounts that require evidence. Otherwise, one can posit endless examples and counter-examples of possible evolutionary behaviours, overcomplicating the issue without advancing further towards an answer. Miller then states that to posit the conceptual constraints thesis, Law is committed to arguing that it is impossible for certain adaptive behaviours to be associated with false beliefs.[344] To continue the example of the human walking five miles in one direction, Law would need to state that it is impossible that a human would walk five miles in search of water *without* also holding the belief that doing so would bring him/her benefit in the form of hydration. Such a stance is, according to Miller, implausible. Hence, Miller believes that Law's attack on the EAAN fails due to its reliance upon the auxiliary hypothesis of conceptual constraints. While conceptual constraints would do the work that Law requires, they must be established as certain on their own terms to add usefully to the discourse, which Miller says they are not.

Miller's counter asserts, correctly, that Law is still relying upon a connection between the content and the properties of beliefs. Without such a link, his argument attempting to reverse causality between belief and behaviour does not function at all, because there is no forwards direction for the causality, let alone a backwards one. Hence, Miller succeeds in this point. As well as that, Miller is right that Law is vulnerable to the adjunct hypothesis fallacy. He would likely admit that what he proposes are additional hypotheses, which if true bolster his central argument based on conceptual constraints. Law's defence of evolutionary epistemology, like Boudry and Vlerick's, is imperfect.

At some point the defender of evolution's influence on epistemology must bite the bullet and defend his or her stance warts and all. This is that point. The power of Miller's main counter to Law lies in the supposed implausibility of the conceptual constraints thesis, making *that* the crux of the issue defining any possible chance of connecting the reliability of faculties with their adaptive fitness. Both Law's, and Boudry and Vlerick's, papers give reasonable defences of the conceptual constraints imposed by the environments. These to a large extent successfully demonstrate that the properties and contents of beliefs cannot be demarcated as Plantinga requires. In Boudry and Vlerick's case, they highlight the causal influence of the environment, and the fact that the environment exerts selection pressures towards beliefs that lead to adaptive actions, for any organism with action-directing, world-involving beliefs. Thus, the properties of a belief must fit the environment at any given time, which means that content is de facto selected for. Likewise, Law's

[343] Calum Miller, "Response to Stephen Law on the Evolutionary Argument against Naturalism," *Philosophia* (2015). p.6.
[344] Ibid. p.5.

explicit assertion of the conceptual constraints imposed by the process of natural selection stresses that organisms often behave in incredibly specific ways that can't seem to be explained without resort to the content of beliefs. Together, these two defences are compelling in demonstrating that organisms with beliefs do act in a manner that is *at least correlated* with the content of their beliefs. Thus, the content of those beliefs whose truth or falsity has adaptive consequences can itself be dictated by natural selection.

The most successful defence of naturalism from the EAAN is indeed, therefore, to propose an auxiliary hypothesis. This complicates matters, but if that hypothesis can be defended as probable then there is no intrinsic problem with doing so. In-keeping with this effective naturalistic strategy, I disagree with Miller's objection to 'conceptual constraints'. Precisely, I take issue with his assertion that for a naturalist to maintain the validity of conceptual constraints, he or she must establish that it is impossible for certain behaviours to occur without beliefs driving them. Rather, the naturalist need only maintain that it is significantly *more likely* for certain behaviours to occur if belief content matters in some sense. This would be an inference to the best and most likely explanation, i.e. if there is a human who walks five miles in one direction, the best and most likely explanation is that that human does so because it believes it will find water. The conceptual constraints hypothesis stands on its own merits because it seems more plausible, on balance of probabilities, than the notion that belief content bears no relevance for natural selection. One cannot rule out entirely the possibility that organisms with beliefs act purely based on the properties, as opposed to the content, of their beliefs. Yet it seems more justified to believe that behaviours are impacted by beliefs' veracity (in the ways that Boudry, Vlerick, and Law spell out) than that truth has no adaptive importance.

In this case, it would suffice for the naturalistic or theistic hypotheses to be equally plausible. For the sake of the foundations of EDAs, there is no need to say that the naturalistic explanation of why certain faculties arise is *better* than the explanation afforded by theistic, guided evolution. All I am aiming to demonstrate is that justifying belief in unguided, naturalistic evolution is not an inconsistent proposition. I can now answer the a priori question of the nature of belief under natural selection. Given that an organism evolved by unguided natural selection, there *would* be an association between an organism's beliefs' content and properties. Hence, for any organisms with beliefs that *did* in fact evolve under unguided natural selection, it is coherent to claim that the content of their beliefs has a causal impact upon their properties.

Naturalist philosophers Boudry, Vlerick, and Law provide convincing arguments that, due to the conceptual constraints imposed upon organisms by their environments, it is very likely that the content of a belief affects the properties that it has, or that the properties of a belief are not wholly separable from its content. This in turn means that organisms who have beliefs are liable to be driven by those beliefs to various actions, so it is coherent to state that organisms with content-relevant, action-driving beliefs could evolve, without theistic influence. Plantinga's EAAN is finally dismantled by the notion that organisms would not develop action-driving belief systems if they did not provide

somewhat accurate information to improve fitness. The link between the content of beliefs and the behaviours that they cause was central to the Milvian Bridge's adjudication of whether faculties could be known to be reliable, under natural selection. Consequently, the Milvian Bridge epistemic test avoids this initial allegation of self-defeat and remains useful for discerning when belief-forming processes are reliable.

Kyriacou's Critiques

In spite of defusing Plantinga's attack on naturalism, there are still other critiques of the coherence of the Milvian Bridge principle. Christos Kyriacou considers that EDAs of the kind proposed by Wilkins and Griffiths are self-defeating because in attacking certain epistemic principles, they are left without stable grounds for justification of any beliefs at all. This is a real and pervasive problem across EDAs, which Kyriacou is right to raise. He sees the considerable virtues of the Milvian Bridge principle in avoiding typical self-defeat concerns, but argues that it is nonetheless self-debunking.

Kyriacou raises several related reasons why the MB is self-defeating, which I will address individually, though related themes between them will emerge. The first is that the MB uses certain normative facts that it would later debunk. The second and third refer to supposed "self-debunking", with Kyriacou claiming that one cannot derive the principle itself from faculties that pass its test, and that due to the irreducibility of evaluative facts the MB is ad hoc.[345] Other concerns Kyriacou has are related in spirit to these three, which are his strongest propositions, so if they can be overcome, then EDAs will have survived a stern test and I can maintain the Milvian Bridge principle's coherence. I focus on Kyriacou's critiques because he targets the Milvian Bridge specifically, but this style of attack is common, with Uri Leibowitz an example of another recent thinker who argues for a self-defeating dilemma for Faculties EDAs, in the realm of moral realism.[346]

I shall address Kyriacou's least compelling allegation of self-debunking first. He asserts that the MB takes among its founding premises principles such as 'we ought to seek truth and be intellectually consistent', as well as other epistemic norms.[347] This is mistaken, in his view, because beliefs in such norms would not cross the MB. Kyriacou describes the issue in terms of truth, but what he says applies equally well to justification too. I propound two responses to Kyriacou's attack here. The first is somewhat speculative- one might utilise *evolutionary* norms to provide argument for the goodness of the *epistemic* norms. To do so, one would state that truth, particularly in certain matters, tends to have survival value for humans. The notion that truth is good could stem from this, as it has been selected for. This defence is something of a minefield, which could raise as many issues as it defuses. In particular, the naturalistic fallacy seems to be a serious problem, because humans' pursuit of truth need not be correct. For the defence to succeed, one would thus have to assume that survival *ought* to be sought. This seems a somewhat

[345] Christos Kyriacou, "Are Evolutionary Debunking Arguments Self-Debunking?" *Philosophia* (2016). pp.11-12.
[346] Uri Leibowitz, "A Dilemma for Evolutionary Debunking Arguments" *Philosophical Studies* (2021). pp.8-9.
[347] Kyriacou, "Are EDAs Self-Debunking?" (2016). p.12.

reasonable assumption for a host of reasons, but it is tricky to ground those reasons such that they are not debunked by the MB test. Nonetheless, arguments of this sort have been posited by Ruse and Oliver Curry, who happily embrace the naturalistic fallacy and argue that survival is good, so truth is good insofar as it enables that.[348]

If this intriguing yet controversial first response is unsatisfying, my second defence is less contentious. One can claim, very simply, that EDAs such as that set forth by Wilkins and Griffiths do not actually assume the norms that Kyriacou posits they do. The EDA might seem at first to rely upon the premise that truth is good, and indeed much of its power does stem from that assumption. Still, it is not necessary to posit the value of truth to establish the Milvian Bridge. One can judge the premise 'truth is good' on its own terms (one can even subject the MB test to it, if one so desires) but it is not a part of the MB's premises. What Wilkins and Griffiths do is provide an epistemic test for considering how an evolutionary understanding of epistemology affects justification, *given that we assume truth or rationality is good.* Only after one has established that truth (or justification) is worth seeking need one consider how to adjudicate on it. As described in the introduction, this thesis operates under the assumption that rational justification is a desirable property for a belief, and so we need not subject that assumption to Wilkins and Griffiths' EDA. Hence, it is not necessary or logical to use the MB test on the notion that justification or truth is desirable, as that is taken for granted by this entire investigation.

In his second allegation of self-defeat, Kyriacou questions whether the MB is an internally coherent meta-epistemic principle by saying that one cannot derive the principle itself from evolved faculties. He argues there is no evolutionary benefit to the ability to derive the MB principle- "the Milvian Bridge fact itself is not prima facie related to the evolutionary success in a way that is reasonable to accept and act upon this belief produced by our evolved cognitive faculties".[349] This line of argument attempts to implode the MB by arguing that it excludes philosophical reasoning if true. Kyriacou claims that "by the principle's own light we should not believe the principle", seeing as faculties that cross the Milvian Bridge don't allow justified belief in the Milvian Bridge- hence producing the most obvious potential example of self-debunking.[350]

Beyond retreading above debates on how evolution can be known to provide humans with reliable belief-forming faculties, let us address specifically how central aspects of the MB (and philosophical reasoning) can stem from naturally selected faculties. The claims required to justify Wilkins and Griffiths' test can be distilled as: 1) Darwinian evolution by natural selection provides us with organisms that track fitness primarily, irrespective of truth; 2) if a faculty did not evolve for tracking truth, it is unreliable; 3) only faculties for whom tracking truth causes enhanced fitness can thus justify beliefs reliably. Can each of these statements pass the MB test? Organisms typically focus only on increasing fitness,

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[348] See: Oliver Curry, "Who's Afraid of the Naturalistic Fallacy?" *Evolutionary Psychology.* (2006); Michael Ruse and Edward O. Wilson, "Moral Philosophy as Applied Science" *Philosophy* (1986).

[349] Kyriacou, "Are EDAs Self-Debunking?" (2016). p.11.

[350] Kyriacou, "Evolutionary Debunking: The Milvian Bridge Destabilized" *Synthese* (2017). p.5.

except when cognitive faculties provide fitness-enhancing beliefs about the world by being accurate.[351] To defeat self-defeat, each claim must be based on faculties that cross the MB.

Claim 1) is empirical, based on Darwinian evolution, and as seen, empirical faculties are reliable, on Wilkins and Griffiths' test. Claim 2) is commonsense inference, gauging that faculties that did not evolve for truth-tracking are unlikely to produce truths. It is based on the probability that a faculty that needn't be or hasn't previously been truth-tracking will not commonly produce truths, a reasonable notion using induction that would serve a human well if accurate. Claim 3) is a logical deduction leading from the first two- logical reasoning is also a faculty that would be beneficial only if truth-tracking. The faculties used to establish the major claims of the MB (empirical faculties, commonsense inference and logical deduction) are thus all evolutionarily beneficial only if approximately truth-tracking and so pass the test of which they form a part.[352] Kyriacou does not contest the reliability of any of the above faculties. Thus, the principle can be derived from faculties that cross the Milvian Bridge, allowing some philosophical reasoning, so Kyriacou's second effort to defend religious beliefs from EDAs by alleging self-debunking fails.

Kyriacou attempts to destabilise the MB principle from yet another angle, by arguing that it is too ad hoc for arbitrating between different beliefs.[353] Gaining knowledge of natural facts requires weighing of probabilities. As a simple example: if I see a tree a metre in front of me, I am almost certain it is a tree, whereas if I see an object that seems to be a tree far away I must account for the possibility that the object is not in fact a tree. Life contains countless more examples of empirical knowledge that requires probabilistic interpretation. Kyriacou advances the claim that "calculation of prior probabilities seems to involve irreducible epistemic normativity".[354] While probabilities supervene on natural facts, they are not themselves natural facts, so beliefs in them cannot be secured as empirical beliefs were.[355] In order to gain accurate beliefs about probabilities, humans must utilise some norms (about what level of probability is acceptable, what evidence counts towards weighing of probabilities, etc.). Thus, humans could not have survived without the ability to engage in an irreducibly normative epistemic practice. Other normative epistemic practices include religion and morality, which are supposedly debunked. So, Kyriacou concludes, if EDAs critique religious norms, then they damage their own internal logic by removing the justification for many probabilistic beliefs essential to their structure that require normativity. Kyriacou seeks to destabilise the Milvian Bridge by exposing that any distinction between the normative faculties it debunks and those it does not is ad hoc. In so doing he denies that Wilkins and Griffiths can maintain claim 2 of the MB, which will either debunk scientific facts *and* religious facts, or neither.

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[351] Peter Godfrey-Smith, "Signal, Decision, Action" *The Journal of Philosophy* (1991). p.14.
[352] Wilkins and Griffiths, "Crossing the Milvian Bridge…" (2015). Especially pp.18-23.
[353] Christos Kyriacou, "Evolutionary Debunking: The Demarcation Problem" *Logos & Episteme* (2019). p.6.
[354] Kyriacou, "Evolutionary Debunking…" (2017). p.14
[355] Kyriacou, "Evolutionary Debunking…" (2017). p.16.

Kyriacou correctly indicates the untenability of total scepticism and the importance of consistency. If the MB leaves us with no justifiable beliefs, then it must be spurned. When weighing probabilities between possible explanations of religion, or on the reliability of faculties, normative judgements are occurring. Nevertheless, the test remains valid if the domains of human knowledge that cross the Bridge are carefully categorised. Weighing probabilities to reach accurate judgements *concerning the world* is something that increases the fitness of an intelligent animal. Being able to see a lion on a ledge above me, judge the ledge's height and estimate that it would likely survive a fall tells me I should run, if I wish to pass on my genes later- evolutionary benefit! Not so for normative supernatural facts, because evolved normative strategies there have no guarantee of corresponding with metaphysical truth. Irreducibly normative judgements concerning natural facts have their results put to the test by the environment. The same can not be said for religious facts. Kyriacou has not distinguished adequately between the two types of beliefs and faculties.

In conflating the two, Kyriacou has thus glossed over the important, non-ad hoc reason why they are distinct. It is perfectly consistent to hold that, due to the epistemic test, irreducible normativity provides evolutionary benefit when applied to natural matters (weighing of probabilities), but not when applied to supernatural matters (moral or religious beliefs). The influence of the environment is key to natural selection and, by the same token, key to the MB. Kyriacou has taken the language of faculties (and connections between them) much too literally and specifically. EDAs do not depend on the reliability of a faculty permitting 'normative weighing of probabilities' generically. Instead, they rely upon the normative weighing of probabilities concerning the natural world and survival behaviours, which is a faculty that *is* beneficial only if truth-tracking. Unless one holds that supernatural truth-tracking is approximately as significant for fitness as natural truth-tracking, a dubious possibility that Kyriacou does not defend, then one must accept that there is a non-ad hoc reason why certain normative faculties cross the Milvian Bridge, while certain others do not. Hence, although Kyriacou's third attack seems initially to expose potential inconsistency, he does not destabilise the fundamentally sound principle.

Kyriacou's efforts to show self-defeat are varied but do not destabilise the MB as he hopes. Due to the relative novelty of the precise argument that Wilkins and Griffiths propose, there are no further responses that look specifically at the MB's internal consistency. Yet considering Kyriacou's attack usefully highlights a major theme of self-defeat critiques of EDAs- inconsistent assumptions- to which I shall now turn. To posit their EDA based on the MB, Wilkins and Griffiths utilise certain basic facts about evolution and the world. This sub-section has made plain that to do so does not lead to self-debunking, as philosophical reasoning, and the Milvian Bridge principle itself, pass the debunkers' test.

Vavova's Invalidation

Another core assumption of Faculties EDAs to be challenged is that it is acceptable to utilise 'scientific' faculties before proving their reliability. A critique along these lines would contend that Wilkins and Griffiths cannot claim to know Darwinian evolution,

regardless of its congruence with the MB test, unless they assume the success of the MB *in the first place* to build up the relevant knowledge. Kyriacou raised the possibility that the MB test debunks certain faculties needed to reach the principles of Darwinian evolution, but attacks on this assumption are prior to that. They contend that even if scientific faculties pass the MB test, in order to establish the test initially those faculties are required. This seems to be a case of a circular argument. The circle can easily be made vicious, because in order to derive the principle, one must apparently assume its outcome (i.e. that empirical and other 'scientific' faculties will survive it unscathed). The distinction between this attack and the previous one is that the latter alleges vicious circularity in assumptions, while the former alleged that the MB test was self-debunking.

The philosopher Katia Vavova best expresses this form of counter to EDAs, most pertinently in her influential paper entitled *Debunking Evolutionary Debunking*. She is explicitly responding to EDAs against moral realism, but her arguments also apply to the religious beliefs with which I am concerned. Her aim is to invalidate Faculties EDAs by arguing they cannot avoid self-defeat when using evolution in an epistemological context.

To construct her counter, Vavova postulates that EDAs use a principle that she terms the "NO GOOD principle"- if you have no good reason to think that X is true, then you cannot rationally believe X.[356] Wilkins and Griffiths' EDA seems to match this description, with appropriate caveats that they focus more on justification than truth. Their argument can be distilled to the assertion that unless one has good reason (in the form of crossing the MB) to believe one's faculties are reliable, one ought not to trust them. They then apply their principle to various beliefs and find them wanting. At first glance, stating that any belief-forming process that we use requires a good reason to justify its reliability seems reasonable and fair. But, given that prospective debunkers do make use of the NO GOOD principle, Vavova argues that doing so makes them vulnerable to self-defeat.

The force of the critique Vavova levels against Faculties EDAs stems from asking what good reason justifies the belief that perceptual faculties are reliable. As seen earlier, reliable perceptual faculties at least are key for any EDA to be able to function. But if one applies the NO GOOD principle to them, just as debunkers do to religious faculties, then they too must pass the test, or be debunked. Wilkins and Griffiths of course believe that their attack on religion does not debunk itself, as the MB defends perceptual faculties. The MB is a thoroughgoing and worthwhile epistemic test that provides good reason to state that the faculties upon which humans rely for perceptual beliefs and scientific endeavour are reliable. But, in using the MB principle as the basis for their defence against the NO GOOD principle, debunkers have been lulled into a false sense of security. Vavova posits correctly that to defy the NO GOOD principle when applied to perceptual faculties, "an empirical claim of some sort is essential".[357] The question of the reliability of empirical beliefs can only be answered by first *assuming* the reliability of empirical beliefs. Hence, Vavova hopes to expose vicious circularity in EDAs that prevents them from having any

[356] Katia Vavova, "Debunking Evolutionary Debunking" *Oxford Studies in Metaethics* (2014). p.8.
[357] Ibid. p.9.

argumentative force against moral realism, or supernatural religious beliefs. If the MB principle is to debunk, it must confront the common allegation that it cannot itself address the fundamental query posed by EDAs without circularity or question-begging. [358]

The aim must therefore be for EDAs against religious and moral realism to show that they need not assume the success of perceptual, or any other faculties, prima facie, in order to function. Vavova is indisputably right when she states that to find good reason for the reliability of 'scientific' faculties, empirical claims are required. Two immediately obvious, but ultimately unsuccessful, options for escaping from this trap present themselves. The first is to assert that perceptual faculties do not need to have their reliability justified. The second works a priori from commonly accepted assumptions towards the MB without begging the question. The two strategies need not be separate, indeed I will show that even though both fail, they give valuable insights for a more successful response.

The first strategy is interesting, insofar as it might make much of the above work done to defeat Kyriacou unnecessary. If one can assume the reliability of commonsense and perceptual faculties, then the Milvian Bridge is not required, as it was, to defend their reliability. One could simply state that certain faculties cannot or should not be challenged, including the various faculties required to set the EDA ball rolling. Something about this approach seems deeply unsatisfactory. It is convenient for the debunkers if indeed the faculties that ought not to be questioned just so happen to be those necessary to launch an attack on religious and moral faculties. One then wonders why it could not be the case that religious or moral faculties are also protected as basic and unquestionable; doing so would render EDAs worthless. Without a valid reason to demarcate perceptual faculties from religious faculties, this tactic is intuitively unsatisfying.

An alternative approach that safeguards empirical beliefs is to consider, a priori, the possibility that humans came about in an evolved world by natural selection. One next posits that, if that were the case, then perceptual and other relevant faculties *must* be reliable. Then one can state that that *is* in fact the world in which we live, so our scientific faculties *are* reliable. This defence mirrors Plantinga's EAAN. Yet how would one know that the world one occupies is like the world that one imagines a priori? Seemingly the only way to know such a thing would be to observe the world. This necessitates perceptual and inferential faculties. Hence, this approach to defeating self-defeat does not remove us any further from question-begging than merely assuming the reliability of required faculties would.

Vavova's objection to EDAs poses real problems for any attempted debunker using a principle like the MB. By highlighting that such a principle defeats itself, Vavova rather neatly removes the keystone from EDAs, seemingly leaving their structure in ruin. Nonetheless, I will propose two further rebuttals that more effectively protect the MB principle from Vavova's critique. One resembles the earlier attempt to make perceptual

[358] Justin Morton, "When Do Replies to the Evolutionary Debunking Argument against Moral Realism Beg the Question?" *Australasian Journal of Philosophy* (2018). p.3.

beliefs basic, while the second rather more subtly deflects Vavova's attack by furthering her own work. I offer them both in the hope that if one does not convincingly rebuild the Milvian Bridge, then the other will suffice.

Challenging Vavova

It seems an unsatisfying and rather too convenient escape for debunkers to say that perceptual faculties cannot be questioned, but religious ones can. Yet several philosophers provide strong, non-arbitrary reasons to believe that our empirical faculties ought to be unquestionable. Chief among these is Ludwig Wittgenstein, whose *On Certainty* discusses the trust humans ought to have in their perceptual, mathematical and inferential faculties- i.e. those necessary to construct the MB. He argues that "propositions of the form of empirical propositions, and not only propositions of logic, form the foundations of all operating with thoughts".[359] I find Wittgenstein's view compelling, wherein he argues that humans are unable to function without basic perceptual faculties. These same faculties also form the foundations of evolutionary thought. Wittgenstein is correct, because if people did indeed doubt the information that their sensory faculties provided for them, they could not operate within the world. Wittgenstein notes that "The truth of certain empirical propositions belongs to our frame of reference".[360] By this he means that the whole manner in which humans understand both themselves and their surroundings relies upon reliable perceptual faculties. People assume, unthinkingly, that when they see a tree in front of them, there is a tree in front of them. To question such a proposition is so abnormal that, if one does so, one travels over the horizon of human understanding to a place where nothing can be known, so fundamental are perceptual and logical beliefs to our human existence.

I take Wittgenstein's argument to be very relevant for the case at hand. He offers powerful justification of the foundational nature of empirical knowledge, though he might detest that characterisation, preferring to see any alternative as absurd. By pointing out how essential such beliefs are for any person engaging normally in the world, Wittgenstein provides good reason to believe that people ought not to doubt certain faculties. These faculties allow us to construct scientific theories such as Darwinian evolution, and thus can lead to the MB principle. By grounding the proposition that "At the foundation of well-founded belief lies belief that is not founded", Wittgenstein's work allows debunkers to counter Vavova's claim to self-defeat by arguing that certain faculties are so indubitable that the MB principle (and the NO GOOD principle) need not apply to them.[361] To doubt empirical knowledge, as Vavova claims EDAs do, is to remove oneself entirely from the human frame of reference, making any allegation of question-begging ineffective.

The position that doubting empirical knowledge is impossible, even absurd, could be criticised through examples of people operating in the world despite inaccurate empirical

[359] Ludwig Wittgenstein, *On Certainty*, trans. G. E. M. Anscombe and Denis Paul (1969). §401
[360] Ibid.§83
[361] Ibid. §253

information. One example is the primary-secondary quality distinction.[362] Primary qualities are features of objects (such as shape or size), whereas secondary qualities are the sensations objects invoke in observers (such as colour or taste).[363] The relevance for Wittgenstein and the NO GOOD principle is that the secondary qualities, provided to us by perceptual faculties, are only human *appearances* of objects. Perceptions are thus inaccurate insofar as they promote the notion that secondary qualities are inherent properties of objects, rather than human impressions pertaining to them. Another example of doubtable empirical knowledge stems from modern science, which tells us that while a table may seem to be totally solid to our senses, it is mostly empty space; it only seems solid due to molecular interactions imperceptible to the naked eye. Hence, my claim that empirical knowledge is undoubtable faces difficulties.

Neither of these objections is telling, because Wittgenstein's position (that I adopt) is not that *all* empirical propositions are *always* indubitable. Regarding the primary/secondary distinction: human beliefs about secondary qualities are only unreliable if they expect to conform to an objective reality. Secondary qualities are not necessary to construct the Milvian Bridge; primary qualities are significant both for operating within the human frame of reference and for forming scientific beliefs. I can retain my defence from the NO GOOD principle by stating that *primary* qualities are in normal conditions incontestable, while allowing secondary qualities to remain subjective impressions. Turning to the latter problem, what matters evolutionarily is that the table is solid at a level comprehensible to humans. That initial impression is what cannot be doubted. It is indeed correct to say that the table *is* solid, despite scientific evidence about molecular structures, because what matters for ordinary reference is that the table is solid enough to rest items atop. Evolution does not furnish humans with perfect empirical faculties, but it does drive us to form approximately true beliefs at a level that is evolutionarily relevant. Equally, Wittgenstein is correct about it being nonsensical to doubt perceptions, in most cases, at the level of ordinary discourse, which is sufficient certainty for constructing the Milvian Bridge. Hence, empirical faculties are sufficiently incontestable to evade Vavova's challenge.

Swinburne lends support from a Christian perspective. In arguing against Plantinga's Reformed Epistemology (as in chapter 3) he tacitly accepts the importance of perceptual beliefs. Swinburne argues that one cannot simply make religious beliefs basic, one must use evidence.[364] Thus it is reasonable to trust one's 'scientific' faculties basically, whereas it is not reasonable to do the same of one's religious faculties, without supporting evidence. The backing of Swinburne shows that it is not an unreasonable position to maintain that perceptual, inferential and mathematical faculties, those which are required for scientific endeavour, seem far less doubtable than faculties that produce religious beliefs.

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[362] This distinction originates in: Locke, *Essay…* (1960)

[363] For more on this distinction, see: Michael Jacovides, "Locke's Distinctions between Primary and Secondary Qualities" in *The Cambridge Companion to Locke's 'Essay'* ed. Lex Newman (2007).

[364] Swinburne, "Plantinga on Warrant." (2001). p6.

If perceptual and logical beliefs are broadly reliable, then knowledge of evolution and the MB principle can be earnt. While it would then be contradictory to accept belief in God is foundational, it is correspondingly fruitless to assume that God does *not* exist. That would rather defeat the purpose of an EDA against religious beliefs. Hence, to reject Vavova's implication of self-defeat, and yet mount a coherent attempt at debunking religious beliefs, the reliability of faculties required to form the MB must be beyond question, while the possibility of doubting *religious* faculties must remain open. I believe such a position can be defended in a non-arbitrary way, using Wittgenstein's apt description of why people must assume the approximate reliability of their 'scientific' faculties, or else leave the human frame of reference. The same is not true for religious faculties, where Swinburne agrees that religious beliefs are not as beyond doubt as perceptual beliefs.

The nature of the above escape from Vavova's attack might still generate unease in those who worry that it accepts, rather than averts, the 'question-begging' she alleges. For the unconvinced, I offer a secondary route around Vavova's blockade. This route recognises the strength of the allegation of question-begging and in response, alters the question. In Vavova's article, she states that EDAs can pose a different challenge to beliefs or faculties that they attack. This is the GOOD principle, which stands in contrast to the NO GOOD principle. The GOOD Principle is a demand that if there is good reason why a belief is mistaken, then it is irrational.[365] It differs from the NO GOOD principle as beliefs (and likewise, faculties) are comprehended as being innocent until proven guilty rather than guilty until proven innocent ('guilty' here meaning false or unreliable, 'innocent' meaning true or reliable).[366]

How does utilising the GOOD principle, as opposed to the NO GOOD principle, assist Wilkins and Griffiths in facing the charge of question-begging? The MB principle need no longer ask every faculty to prove its reliability before being accepted. Rather, the EDA can operate on the premise that unless there is good reason to doubt empirical or inferential faculties, they are reliable. Absent a reason to doubt their veracity, perceptual beliefs can thus form the MB, avoiding self-defeat. One must still drive this argument to debunk, however. To do this, the EDA must posit that, rather than expecting every single faculty to pass its epistemic test or be rejected as unreliable, some faculties are revealed by the MB to have uncertain foundations. Hence, Wilkins and Griffiths' contention that religious beliefs are vulnerable to EDAs could be interpreted as the claim that the MB ought to make one suspect that religious beliefs are unreliable products of the evolutionary process. The MB, as seen when answering Kyriacou, does not arouse the same suspicions when applied to 'scientific' faculties. Wilkins and Griffiths can assert that they have good reason to doubt religious beliefs, and as such they are debunked without resort to the troublesome NO GOOD principle. This latter escape uses Vavova's own ideas to adjust the emphasis of the Faculties EDA from an all-encompassing scepticism to a tool, which, when used against certain classes of beliefs, renders some of them debunked, while avoiding potential self-

[365] Vavova, "Debunking Evolutionary Debunking" (2014). p11.
[366] Vavova, "Debunking Evolutionary Debunking" (2014). p12.

defeat. If the EDA can be reformulated such that it does not use any variant of the NO GOOD principle, then the difficulty that principle exposed for the MB is overcome.

The EDA proposed by Wilkins and Griffiths does not survive totally unscathed in defeating self-defeat. The attacks levelled against it evidently expose real concerns about its assumptions and internal coherence. Yet, it ought to be equally evident that, with careful consideration of the difficulties to overcome and some adjustments to the scope and scale of the Faculties EDA, it can avoid self-defeat. Plantinga argued that naturalism was an incoherent proposition, but careful consideration of what evolved faculties can tell us dispelled that notion. Kyriacou alleged self-debunking within the MB principle, but his efforts failed to undermine the epistemic test, as long as it is based firmly within evolved epistemology and understands the types of faculties natural selection favours. Vavova's influential critique can be averted either by embracing and affirming the foundational nature of perceptual beliefs, or by altering the way the MB debunks religious beliefs.

Whichever response one chooses to utilise in defence of Faculties EDAs, the Milvian Bridge principle must be altered to some extent. One might need to limit its scope, reducing the range of scepticism within it to avert self-debunking. Certainly, it seems one must at least add a clearer picture of how the perceptual beliefs that form its basis are well-founded under natural selection and themselves pass the test. Both adjustments seem eminently effective and possible. I have demonstrated that, with such modifications, major allegations of self-defeat against EDAs can be dispelled. The Milvian Bridge principle remains sound; despite its apparent fall it can be strengthened to constitute an integral component of evolutionary agnosticism, undergirding the third premise of my argument.

Faculties EDAs are complex and require careful explication before any weaknesses can rightly be found. This chapter has thus been an exercise in meticulously exploring exactly how they function, and how they aim to debunk religious beliefs. Furthermore, I have critically evaluated whether EDAs of this kind are a cogent threat to religious beliefs, which they certainly are. In particular, it ought to be noted that the Milvian Bridge principle, which offers an epistemic test for discerning between evolved faculties' reliability, can defeat severe and repeated allegations of self-defeat- a point crucial to later chapters. While I will show in the next chapter that Faculties debunkers are ultimately unsuccessful, they can disrupt many assaults upon them. Despite failing, they provide novel and far-reaching insights into the justification of metaphysical beliefs in the light of evolution. Examining the internal coherence of such arguments in this chapter has importantly demonstrated that Faculties EDAs offer a genuine threat to the justification of religious beliefs, which marks an essential step towards evolving epistemology.

Chapter 6:

Debunking Faculties Debunking Arguments

In the preceding chapter, I explained why I find the Faculties Evolutionary Debunking Argument that John Wilkins and Paul Griffiths posit to be the most cogent and strongest variant of that type of argument. Their attack has genuine force in destabilising religious beliefs, and legitimacy in not falling prey to self-defeat. This chapter will take what has been learnt as the basis for a detailed evaluation of the argument that Wilkins and Griffiths present, using it as a proxy for the entire category of faculties-focussed EDAs. Given that theirs appears to be the most powerful form of EDA, if religious beliefs can be defended from it then those who wish to hold such beliefs rationally would seem to have nothing to fear from the whole class of arguments. Hence, this chapter is of critical importance for any defender of the justification of metaphysical beliefs. It also concludes the second section of this thesis, ending consideration of the multifarious EDAs and laying groundwork for my own evolved epistemology by detecting potential weaknesses.

Having addressed extensively the potential chink in the armour caused by issues of coherence and self-defeat in the prior chapter, I will progress towards looking at more direct defences of religion. These take the EDA as an internally valid challenge but seek to escape from its grasp by denying its application to religious belief. This will lead naturally into a cross-disciplinary discussion of Wilkins and Griffiths' argument (and EDAs more generally). By introducing scholars and defences from the field of meta-ethics, the widest possible array of voices can be heard, permitting potential protection of religion by transferable arguments that defend moral realism. To finish the chapter, I will assemble what I believe to be the worthiest components of several disparate defences of religious belief. By strengthening these I will be able to argue my own position, which is that despite their resilience, Faculties EDAs finally fall.

Although Wilkins and Griffiths' argument will survive many possible deflections unscathed, it cannot ultimately succeed. Many attempts to divert the argument's force away from religious beliefs fail thoroughly. But in the final part of the chapter, by adding my own thoughts to the strongest defences, the Faculties EDA *will* be debunked, as I will demonstrate that it fails to achieve the goals that it set itself. Despite being the strongest iteration of an EDA, it fails in a similar manner to earlier, Aetiological debunkings- the genetic fallacy. The argument and principles that Wilkins and Griffiths have set out retain powerful consequences for religious beliefs, however, despite not debunking. In chapter 7, the thesis surpasses EDAs to tackle the rationality of religious beliefs directly. The fact that so many defences of religious beliefs from EDAs are misguided is a key indicator that there is something to be learnt from the evolved nature of human faculties.

Wilkins and Griffiths postulate an epistemic test, called the Milvian Bridge (MB), to discern the reliability of any given faculty. They state that given Darwinian evolution by natural selection, if beliefs generated by a faculty are adaptive by virtue of their truth, then that faculty can be known to be reliable.[367] The MB test informs their claim that "religious beliefs emerge as particularly vulnerable to evolutionary debunking arguments" as they are not truth-tracking according to it.[368] While "debunking is not disproving", Wilkins and Griffiths blatantly believe their EDA ought to undermine religious believers' confidence in at least some of their beliefs.[369] Indeed, Wilkins states unambiguously that "We can therefore conclude that religious belief qua religious belief is debunked by EDAs in the absence of good reason to think otherwise."[370]

The Milvian Bridge principle does defeat self-defeat, but in doing so must accept alterations to its approach and scope. Therefore, in the previous chapter, Faculties EDAs, by answering this first and key set of detractors, showed more promise than Aetiological arguments in their pursuit of undermining religious beliefs. Hence, some other error must be found within the structure of Faculties EDAs, in order to defend the justification of religious beliefs. I will now assess other objections, which broadly accept the internal consistency of the argument and its foundations, but take issue with specific premises.

Rebuilding Religious Faculties

The disputes in this sub-section will centre on counters focussed on restating the reliability of religious beliefs. They thus deny premise 2 of the generic Faculties EDA. Wilkins and Griffiths justified that premise by arguing that religious faculties failed the MB test, making them unreliable. Despite this, there are views to the contrary. These defences collectively, by various methods, aim to show that whatever faculty produces religious beliefs is reliable and so the conclusion of the Faculties EDA cannot be reached.

The philosopher of religion Joshua Thurow claims whatever faculties Wilkins and Griffiths have targetted are reliable. He disputes the usefulness of the test that Faculties debunkers use. The Milvian Bridge is flawed for debunking religious beliefs, Thurow argues, because it is misapplied to religious faculties. Instead Thurow states that although religious faculties might not be reliable in providing truths about the natural world, they could still be reliable in giving humans justified religious beliefs.[371] Additionally, he says that if a mechanism works as intended, it is reliable, regardless of whether it seems to have benefit within the world. Religious faculties may be working as intended but in doing so their successes might happen to be irrelevant from the perspective of natural selection. This would mean that the MB test is inappropriate for religious faculties and does not

[367] Wilkins and Griffiths, "Crossing the Milvian Bridge…" (2015). pp.4-6.
[368] Ibid. p.24
[369] Ibid. p.26.
[370] Wilkins, "Is Religion…" (2016). p.15.
[371] Joshua Thurow, "Does Cognitive Science Show Belief in God to Be Irrational? The Epistemic Consequences of the Cognitive Science of Religion" *International Journal for Philosophy of Religion* (2013). pp.10-14.

show them to be unreliable, because their reliability is based on results towards whose truth evolution is not sensitive- so such faculties can be trusted in spite of the EDA.

This style of argument is similar to some of those applied against Aetiological EDAs. Just as I then asserted that knowing the methods used to form religious beliefs (such as HADD) produce errant physical beliefs means nothing for their production of metaphysical beliefs, so Thurow argues that religious faculties might not pass the MB test, yet may still produce true beliefs. His central claim is: "it seems that we can't show that the CSR belief-forming processes are unreliable unless we can show that there are no Gods".[372] Without showing that there are no Gods, Thurow believes there is always a possibility that religious faculties, even if they seem inaccurate, produce religious truths. So, according to Thurow, Faculties debunking arguments do not show that the process producing human religious beliefs is unreliable, because they do not actually show that beliefs produced by it are false, which would be evidence of unreliability. Thurow's counter is based on his belief that faculties can fail the MB epistemic test and still give true beliefs, so religious beliefs cannot be ruled out unless we have evidence against the beliefs themselves, which is the domain of natural theology.

Unfortunately, the similarity with counters to Aetiological EDAs does not work in Thurow's favour here, because the EDA that Wilkins and Griffiths propose works in a fundamentally different way to Aetiological EDAs. 'Sensitivity' Aetiological EDAs focussed on specific CSR mechanisms and demonstrated that they were unreliable in their usual operation, and so most likely unreliable in producing religious beliefs too. Hence, the counter applies well. But Wilkins and Griffiths' argument does not say that religious beliefs are debunked because they rely upon faculties that are unreliable when producing *physical* beliefs. Rather, they are saying that religious faculties are unreliable because they are not truth-tracking, by the standards of the epistemic test set, in producing *metaphysical* beliefs. Wilkins and Griffiths, then, are not arguing that religious faculties absolutely cannot produce true beliefs, only that their reliability is highly improbable given their provenance. Therefore, any true beliefs produced by religious faculties would come about by coincidence, and so beliefs depending on religious faculties are unjustified. If the successes of religious beliefs are, as Thurow concedes, not a relevant factor in increasing fitness, then according to the standards Wilkins and Griffiths set, faculties that produce such beliefs are unlikely to provide humans with true beliefs.

Thurow is not wrong to point out that faculties that fail to cross the Milvian Bridge can still produce true beliefs. But he does not offer any evidence to tilt the probability of religious faculties generating accurate religious beliefs in his favour. If we accept the test that Wilkins and Griffiths set, which Thurow does, then it is not impossible that human religious faculties are reliable, merely very unlikely. In my interpretation of his counter, Thurow seemingly fails to appreciate the Faculties EDA. He is technically correct in stating that religious faculties *could* still be reliable, but Wilkins and Griffiths were never arguing

[372] Thurow, "Does Cognitive Science…" (2013). p.12.

to the impossibility of such an occurrence, merely the improbability. In failing to deny the validity of an epistemic test such as the MB, and further accepting that religious faculties fall afoul of the MB, Thurow has made his bed. In then attempting to claim that these antecedents do not affect the justification of religious beliefs, he is refusing to lie in it. Wilkins and Griffiths' argument works on the basis of probabilities and if it succeeds it shows that religious faculties likely do not track truths. To point out they have not made certain the falsehood of religious beliefs adds little to the discussion. Religious beliefs *could* be justified, but probably are not, so remain debunked despite Thurow's objection.

Another theistic attempt to defend the reliability of religious faculties comes from Helen de Cruz, Martin Mahner, and Johan De Smedt. Their strategy for countering the 'unreliability' premise of the Faculties EDA is to argue that unreliability can be mitigated. This is an approach from which we will see more when considering defences from moral realism, but the three philosophers of religion give it a unique twist. Just as Thurow does, De Cruz, Mahner, and De Smedt agree that understanding evolution fully has significant potential consequences for religion.[373] Their paper was published before Wilkins and Griffiths' attack, but in many ways they anticipate a move against religious faculties, understanding that the process of natural selection is merciless and so beliefs that do not bring adaptive success by their truth are unlikely to prosper. They appreciate that this spells trouble for religious beliefs, especially when using evolution in tandem with CSR.[374]

Mahner, De Cruz, and De Smedt downplay the alleged unreliability of religious beliefs. They use the example of thermometers to do so. In order to sense the temperature around them, humans have a sense called thermoreception. Thermoreception typically tells us when it is hot, cold, or somewhere in between, but cannot be much more precise than that, because accuracy beyond approximation carries no additional evolutionary benefit. Hence, approximate thermoreception crosses the Milvian Bridge, but is not reliable at indicating temperature more precisely than to within circa 5° Celsius. Humans have built tools such as thermometers, however, which allow us to surpass our innate sense of thermoreception in accuracy and discern temperatures much more precisely. The trio of authors draw a parallel between various CSR mechanisms such as HADD, which might produce religious beliefs with poor reliability, and thermoreception. They claim that humans can use the environment and rational thought to overcome the cognitive biases that CSR details, just as they might use thermometers to overcome the inadequacies of thermoreception.[375] In so doing, humans would be able to justify religious beliefs, just as they are able to know precise temperatures reliably.

The rebuttal proposed by De Smedt, Mahner, and De Cruz does not function against the style of EDA proposed by Wilkins and Griffiths. It is altogether too focussed on specific CSR mechanisms, as to some extent Thurow's was also. Relying on HADD (or any other particular mechanism) as the basis of an attack against religion would be questionable, not

[373] De Cruz, Mahner, and De Smedt. "Evolutionary Approaches…" (2011). p.2.
[374] Ibid. pp.3-4.
[375] Ibid. pp.14-16.

least because the scientific evidence that these mechanisms alone brought about religious belief would be precarious. But that is not what Wilkins and Griffiths do. They do not focus on a specific mechanism with poor reliability. Rather, they state that *any* given faculty that produces religious beliefs is unlikely to be reliable due to its evolutionary past, thus permitting their Faculties EDA to skirt the issue of CSR mechanisms altogether. The MB test does not allege that there are harmful cognitive biases to overcome, instead religious beliefs are said to be undermined as their source does not track truth. The difference is that one would not be using tools to add further precision to a reliable but insufficiently precise sense, but improving a faculty whose initial reliability is fundamentally and irreducibly uncertain.

Without specific cognitive biases, the potential methods of overcoming unreliability that De Cruz, De Smedt, and Mahner suggest are unfeasible. Importantly, when creating a thermometer one can calibrate it by using one's approximate sense of thermoreception (if the thermometer says a high temperature when in an ice bath, one can assess that that thermometer is likely defective). On the other hand, the religious faculties that Wilkins and Griffiths claim to be unreliable cannot be calibrated in the same way. Unlike our sense of thermoreception, we do not have a consensually established approximate sense of what ought to be metaphysically true, by which we could judge the success of the methods we use when attempting to compensate. There is thus no prospect of utilising other modes of thinking to compensate for the fallibility of religious cognition. The refreshed view that aims to ensure religious belief can be considered reliable fails to defeat the Faculties EDA under consideration here. It is inappropriate for dealing with an EDA that does not allege specific cognitive defects. Moreover, its parallel between religious faculties and other faculties, whose precision and accuracy can plainly be honed by external instruments, fails, as it does not establish the feasibility of improving the precision of religious faculties.

Even if the trio's rebuttal were well-fitted for its appointed task, it seems weak. While it might sound initially reasonable to say that humans can use their environments and rational minds to fashion reliability from imprecision, and that certainly applies to thermoreception, can the same truly be said for religious beliefs? What sort of tool might one make, like a thermometer, that detects God? If one's cognitive biases drive one towards certain types of religious beliefs, what about the environment will drive one back to reliability?[376] Severe difficulties afflict the counter-argument that De Cruz, De Smedt, and Mahner propound, even if one permits them their link between thermoreception and CSR mechanisms. Seeing as that comparison was misdirected in the first place as well, it is therefore fair to say that the defence presented by these three has not re-established the reliability of religious faculties, or debunked the debunkers whatsoever.

The first style of counter to Faculties EDAs fails for one key reason. Defences of this ilk typically concentrate on specific belief-forming mechanisms too much. Faculties EDAs of Wilkins and Griffiths' kind do not concern themselves with the reliability of any given

[376] The answer to some of these questions may be to utilise natural theology, but this avenue has already been shown to be unpromising in chapter 5, and De Cruz et al do not fortify it further.

mechanism on its own terms. The Milvian Bridge test instead asserts clearly that any religious belief-forming faculty is unreliable unless a compelling argument can be made as to why the truth-tracking nature of religious faculties brings pragmatic success. On that front Thurow and company founder, hence there is no major case to answer for faculties-focussed EDAs in the region of rebuilding the reliability of religious beliefs.

Testing Validity

Another approach from philosophers trying to defend the reliability of religious belief from EDAs undermines the validity of the entire debunking rationale. To what extent does the conclusion necessarily follow from the premises? The first two premises of the EDA refer to a belief-forming faculty, whereas the conclusion refers to the justification of beliefs. There is a potential disjoint to exploit here, because there is not necessarily a link between how scientific evidence explains a belief and how a religious believer justifies that belief. To clarify: the Faculties EDA requires that a religious belief not only must have come about due to an evolved, unreliable faculty, but also must be justified by resort to *that same faculty*. A possible counter-argument could stress that the connection between faculties and justifications is never so transparent, even under externalism. Although a religious belief can be causally explained by faculty X, faculty X might have no bearing on justification of the believer's belief, nullifying any move from premise 2 to conclusion. If the separation between explanation and justification of belief holds, then premise 1 and premise 2 would not entail the conclusion of the Faculties EDA, making it invalid.

This intriguing possibility has the potential to wriggle free from the schema sketched by debunkers. There are two primary ways of construing this attack: the first states that a different faculty from the one identified by debunkers is relevant for the justification of religious belief. The second states that the faculty's reliability is irrelevant for justification of religious belief (perhaps based on internalism). In either case, debunkers' use of the MB test ought to defeat any effort to separate the premises from the conclusion. Due to the broad sense by which Wilkins and Griffiths mean 'faculties', any process that is used to form a religious belief could be termed a 'religious faculty'. This means that not only is process/faculty X a poor basis for justifying religion, but hypothetical faculties Y and Z would be, too. Wilkins and Griffiths claim that *whatever* faculty is used to justify belief, that faculty can be evolutionarily explained and, given that natural selection is a fitness- not truth-producing mechanism, can be dismissed as poor grounds for religious belief thanks to the Milvian Bridge test.[377] They would therefore assert that even if a believer did not recognise a certain debunked process or faculty as playing a role in the formation and justification of his or her belief, any process or faculty upon which he or she *did* depend would also be debunked. Granting the consideration given in chapter 3 to the importance of the formation of a belief to its justification, under either internalism or externalism, there will always be an evolutionarily formed faculty that can be targetted. Hence, escape

[377] Wilkins and Griffiths, "Crossing the Milvian Bridge…" (2015). pp.24-5

from the Faculties EDA by this route is implausible, because there cannot be a religious belief forming faculty that is not unreliable (according to Wilkins and Griffiths).

The validity-testing counter does make explicit a proposition implicit within Wilkins and Griffiths' version of the Faculties EDA, which ties their MB test to their conclusion. The hidden premise is: if one's belief is produced by an unreliable faculty, one ought to have reduced confidence in that belief. Assertions of this kind will be familiar from chapter 3. In that chapter I laid the groundwork for this reasonable proposition by arguing that regardless of whether one uses an externalist or internalist schema of justification, the reliability of the processes that lead to the formation of one's beliefs is relevant. Therefore, it can be granted that if the MB test does reveal that a faculty is unreliable, then the beliefs produced by that faculty are in doubt, so this implicit premise is reasonable.

Even accepting that the reliability of a belief-forming faculty is a relevant consideration for the justificatory status of that belief, Wilkins and Griffiths must also uphold the claim that for any given faculty that produces religious beliefs, that faculty will not cross the MB. This is a broad statement, which could prove controversial. But, given what has already been said in this thesis about the nature of religious beliefs, the definition of religious faculties, and an acceptance of the worth of the MB principle, I believe it can be wholeheartedly supported.

The way to support such a strident claim is to affirm the evolved nature of humanity. Humans are unique amongst animals, but we are nonetheless evolved. Hence, the claim that every belief-forming process can be analysed in terms of its evolutionary origin is tenable. This is not to say that science provides a *sufficient* and *complete* explanation of why we believe such things, as that would be reductionist. Any reasons used to justify beliefs, however, will necessarily assume that the faculties used to formulate those reasons are reliable. Here evolution *does* provide sufficient explanation of the natural processes driving us towards certain faculties and beliefs. The scientific analysis (which can best be done by use of the MB principle) of belief-forming faculties is only one way to analyse the justification of beliefs, but it is a significant and relevant method. If it is granted that faculties drive behaviours, which are sensitive to natural selection, and beliefs are formed by faculties, then the EDA succeeds, so it is valid. One can still dispute the premises of the argument, but it functions well if they are accepted.

The structure of the Faculties EDA, as set out above, is perhaps too minimalist and ought to refer to various faculties that could be used for justification, as well as including a premise linking unreliable faculties with unjustified beliefs. Nevertheless, the argument remains valid, because justifying beliefs of any kind eventually relies upon a faculty. It is at that point that the MB test can be applied. The only empirical labour needed to assert that religious faculties fail the MB test is to obtain evidence first that humans came about due to a fitness-enhancing process, and second that religious beliefs are not fitness-enhancing by virtue of their truth. To serve these twin goals, explanations of religion like those offered in chapter 2 can be used. Both of those facts were seen there to be eminently

defensible, as metaphysical truth did not figure in plausible natural histories of religion. If the empirical labour can be established, and given that beliefs rely at least in part upon the faculties that produce them for their justification, the EDA proposed by Wilkins and Griffiths *can* be used to debunk religion. It does, on its own terms at least (and the terms of this thesis), demonstrate the unreliability of religious faculties. Its argumentative structure, once supplemented with statements about the nature of justification, seems sufficiently valid to bring about the debunking conclusion, if the premises are accepted.

The view from Meta-Ethics

So far, attempts to debunk the Faculties debunkers have not succeeded. Working within their system by defending the reliability of religious beliefs does not seem to work, but nor does denying the argument's overall validity or exposing self-defeat. Moreover, the first, empirical, premise seems correct, thanks to earlier work on the evolution of religion. Hence, it is better to continue interrogating the vulnerable second premise because without it, the entire argument begins to crumble. In this pursuit, I shall now introduce ideas from other areas of philosophy. Cross-disciplinary work is typically a boon, and the field of EDAs is no different. Whereas Faculties EDAs against religion are in their infancy, with few proponents and defendants, ethicists have been debating moral faculties for longer. It is possible they are in a more advanced stage in their defences against EDAs, which would make it foolish not to scout their battle lines and major clashes. It may be possible to transfer some tactics to the debate surrounding anti-religion EDAs, particularly those focussing on premise 2. They should be easily exchangeable as 'religious faculties' and 'moral faculties' each fit under the umbrella of 'metaphysical faculties', by my definitions. This parallel applies as described in the introduction, because in both cases the beliefs in question are not natural facts but are supposed to be objectively true. The parallel means that an argument against one form of EDA is likely to be of use against another form. In addition, Wilkins and Griffiths openly state that their EDA debunks moral realism too, so a defence can apply equally across philosophical specialties.[378]

EDAs have a certain reductionist tendency to them- beliefs are generated by faculties, which are formed by evolution. Moral philosopher William FitzPatrick seeks to defend moral realism from EDAs by highlighting and objecting to the reductionism inherent in Wilkins and Griffiths' argument.[379] He claims metaphysical beliefs cannot be known to be off-track purely due to their evolutionary origins. Humans are very different from other animals, and this means that we are capable of 'spinning webs of meaning', to paraphrase Weber and Geertz. FitzPatrick advances this by saying humans can develop their own faculties, enabling them to track metaphysical reality by using their rationality to create accurate meaning. Furthermore, when one explains e.g. religious belief by the reason one has for justifying it, *and* by its evolutionary origin, that belief is overdetermined, making the evolutionary explanation unnecessary, so the other justification remain sound.[380]

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[378] Wilkins and Griffiths, "Evolutionary Debunking Arguments…" (2013) pp.9-10.
[379] William FitzPatrick, "Debunking Evolutionary Debunking of Ethical Realism" *Philosophical Studies* (2015). p.4.
[380] Ibid. pp. 15-18.

I do not think FitzPatrick's points hold much water. His first is of a kind already seen with De Cruz, Mahner and De Smedt's argument, which will be developed still further below by other thinkers. FitzPatrick's version is based on a poorly evidenced assertion- that humans can develop their own faculties to produce different kinds of beliefs.[381] I might be able to train my eyesight to improve its truth-tracking ability, but I cannot provide for myself a sixth sense telling me continually where the closest elephant is. Of course, we may build upon and fine-tune our already extant faculties, but not develop entirely new ones to track truths totally beyond our ken. FitzPatrick misses the point of the EDA that states humans never had reliable metaphysical-truth-tracking ability, and he does not provide evidence for the emergence of one. Nor does he argue against the MB, making his attempt at denying that humans have unreliable metaphysical faculties ineffective.

FitzPatrick's overdetermining objection again misunderstands the functioning of the EDA. It pivots on the notion that when science explains the origin of belief and a person describes his or her own justification, these compete. But in reality, a person may hold his or her own views for personal reasons, and yet still be debunked, not because the two explanations are rivals, but because Faculties EDAs remove the reliability of the faculties upon which the personal reasons rely. As a result, FitzPatrick's critique might be more effective against Aetiological arguments, but in defending moral realism from EDAs such as Wilkins and Griffiths', it is severely lacking. His idea of basing ethics in the empirical is an interesting one, suggested by John Teehan and others, offering hope for constructive morality post-EDAs.[382] More on a post-EDA morality will be discussed in chapter 8. FitzPatrick's efforts there, however, are not relevant to EDAs against religion, due to the definition of religious belief in this thesis necessitating a more transcendent truth.

One interesting output from FitzPatrick's theory is the idea of human faculties transcending their evolutionary history. It is one with an honourable tradition, even right honourable, as Prime Minister-to-be Benjamin Disraeli remarked of Darwin's theory, "Is man an ape or an angel? My lord, I am on the side of the angels".[383] This tradition is taken up in another attack on EDAs, from moral realists (and brothers) Arnon and Yair Levy. They use Andreas Mogensen's distinction between proximate and ultimate explanations to negate the notion that natural selection does not provide metaphysical truth-tracking faculties.[384] Ultimate explanations utilise a "long-run genealogical process", whereas proximate explanations are more specific.[385] The difference is between describing human faculties in terms of the evolutionary environment that selected them (ultimate) and describing why one person in particular is gifted at maths, thanks to intense study of the discipline (proximate). The Levys argue EDAs use the truth-indifference of the ultimate

[381] FitzPatrick, "Debunking Evolutionary Debunking". (2015). p.5.
[382] John Teehan and Christopher DiCarlo, "On the Naturalistic Fallacy: A Conceptual Basis for Evolutionary Ethics" *Evolutionary Psychology* (2004); Michael Ruse, *Taking Darwin Seriously: A Naturalistic Approach to Philosophy* (1986).
[383] D.C. Somervell, *Disraeli and Gladstone: A Duo-Biographical Sketch.* (1926). p.134
[384] Andreas Mogensen, "EDAs and the Proximate/Ultimate Distinction" *Analysis* (2015).
[385] Arnon Levy and Yair Levy, "The Debunking Challenge to Realism: How Evolution (Ultimately) Matters," Journal of Ethics & Social Philosophy (2016). p2

process as sufficient proximate description of individual human faculties.[386] While they admit that the ultimate is a contributing factor to the proximate, they believe EDAs provide no proximate explanation of any single person's faculties, and therefore cannot debunk anyone's belief, as they fail to explain its origins specifically enough. This is entangled with the speculation that humans may have faculties that did not come about from natural selection, which we can self-develop.

If such a speculation is correct, the Levys would thoroughly undermine the debunking of faculties. It is indeed true that EDAs do not provide proximate explanations. Yet believing that they *must* do so imposes a curious picture of mankind. The reason EDAs provide ultimate explanations is because, as humans are products of evolution, the presumption is made that they are only able to do that which evolution provided them with the abilities to do. Indisputably, all humans have individual proximate quirks, but our ultimate evolutionary explanation does set limits on our capabilities, even at an individual level. Using the evolutionary story is not a complete explanation of my ability to run quickly, as there are proximate factors such as whether I have been training recently or whether I am injured that have a bearing. But the speed I can run is bounded within certain limits by my evolutionary past. In particular, there is an upper limit lower than that of other animals, because evolution dictates that it need be no higher. In a similar way, Wilkins and Griffiths might respond by stating that there is an upper limit on human truth-tracking, bounded by what natural selection deemed necessary. The argument set forth by the Levys can thus be denied by stressing that ultimate explanations, of the kind offered by EDAs, might not be useful for proximate specificity, but apply nonetheless to each individual in setting limits. EDAs can still debunk if it is agreed that accurate metaphysical beliefs are beyond the upper bound of human capabilities, as set by ultimate evolutionary explanations, which the Milvian Bridge test seems to do.

The debate thus becomes a question of the extent to which one believes that humans are defined by their ultimate biology. Are we apes or angels? Although I sympathise with the conviction that humans have transcended their biological capabilities, such a view cannot be evidenced in the realm of human knowledge acquisition. Here we must, at least prima facie, be apes. Given that one accepts that humans evolved and our faculties were influenced by evolutionary forces (empirical claims with significant evidence), there are two avenues to deny these restrictions.[387] On the one hand, one can argue that humans have the capability to overcome our limitations and use faculties not provided to us by evolution, which is a possibility already repeatedly discussed and dismissed above. I stress these constraints set by the ultimate cause of natural selection not only in defence of

[386] Ibid. p.4

[387] For a selection of useful philosophical and biological discussions of evidence for the evolution of human faculties and rationality, see: Elliott Sober, "The Evolution of Rationality," *Synthese* (1981); James Sage, "Truth-Reliability and the Evolution of Human Cognitive Faculties," *Philosophical Studies* (2004); Alasdair Houston, John McNamara, and Mark Steer, "Do We Expect Natural Selection to Produce Rational Behaviour?," in *Modelling Natural Action Selection*, ed. A.K. Seth, T.J. Prescott, and J.J. Bryson (2012).

the Faculties EDA, but also because such a claim is a feature of my own argument in chapter 7, albeit with a less undermining attitude to religious beliefs.

On the other hand, one can continue to declare that the environment provides selective factors for metaphysical truth-tracking. This second possibility will receive further discussion in chapter 8 when Hans van Eyghen and William Alston defend the utility of religious beliefs. In its initial iteration, as the Levys present it, there is no specificity regarding how the environment provides selective factors for metaphysically true beliefs. In contrast, the evidence that conflicting religious or moral beliefs seem to provide equitable evolutionary benefit gives strong initial reason to suspect that metaphysical truth-tracking is not susceptible to natural selection. Therefore, one ought to accept that cognition is limited by its evolutionary foundation, and need not track metaphysical truths. EDAs function despite the Levys' argument because humans arose and developed due to a process that does not care for truth-tracking or anything nobler than fitness, so an ultimate explanation suffices as proximate explanation of the *limitations* of human faculties. To talk of physical processes imposing limitations on human abilities may sound suspiciously physicalist, but that needn't be so, as long as it is accepted that whatever cognitive capabilities humans have are ultimately susceptible to natural selection. This occurs over generations of offspring and so non-physical or physical faculties alike would have adaptive value or disvalue, based on behaviours they cause, via beliefs they produce.

Returning to Reasons

So far, the critiques of EDAs made by moral philosophers have been no more interesting or compelling than were the critiques from philosophers of religion. More persuasive ideas have been produced from this realm of philosophy though. One common notion that has ties with abovementioned ideas about surpassing faculties is brought into the frame by Katia Vavova (author of the GOOD and NO GOOD principles) and Peter Königs. They have similar interpretations that are noteworthy for recognising the real difficulties that Faculties EDAs generate for metaphysical realism, aiming to overcome them on their own terms. Both their responses are targetted more specifically at the style of moral debunking proposed by ethicists such as Sharon Street and Peter Singer.

External Reasons

Vavova wonders how on earth an EDA that is levelled against moral faculties can possibly be sufficiently aggressive to attack the arguments it needs to attack while leaving space for the sort of moral naturalism or consequentialism that its proponents prefer.[388] Likewise, Königs believes that if evolutionary factors have indeed been distorting, so moral faculties are of no use to humans, then it seems at least inconsistent, and at worst hypocritical, to suggest that one can still argue for the truth of consequentialist ethics.[389] These arguments

[388] Vavova, "Debunking Evolutionary Debunking" (2014). p.20.
[389] Peter Königs, "Two Types of Debunking Arguments" *Philosophical Psychology* (2018). p.7.

are well-employed against their targets, and highlight a relevant problem for moral philosophers who wish to do constructive work after using EDAs to dismantle moral realism. Nonetheless, they do not transfer particularly well to the field of EDAs against religious belief. Debunkers there do not necessarily want to say that God does not exist, or form a religion that can be known to be true within the limits that EDAs set. Instead, they are content to say that religious beliefs "are produced by cognitive adaptations which do not track supernatural truths".[390] This means that they do not risk the difficulty that Street and Singer do, of attempting to use faculties that they themselves claim to have debunked.

Königs and Vavova's more relevant objection is that EDAs are too dismissive of actual reasons that people might have for metaphysical beliefs.[391] This applies more obviously to Wilkins and Griffiths' style of argument, as the Faculties style they employ does not care for specific groundings beneath beliefs. It is also noticeably similar in kind to the arguments against the limitations that evolution imposes on human faculties. It is different (and superior) insofar as Vavova and Königs do not deny the potentially distorting effect of evolution in forming human faculties. Despite this, Vavova argues that reasons should still have an impact on our moral beliefs. She posits that "once you put aside all you believe [as the Faculties EDA demands], you don't have any reasons left".[392] Comparably, Königs construes EDAs as essentially ad hominem attacks that eschew specific reasons demonstrating why moral realism is correct, in favour of giving a higher-order reason why the argument must be wrong, given its source. Both these moral philosophers argue that one must still be able to use reasons to justify one's metaphysical positions in light of EDAs. They underline the vacuity of EDAs in actually challenging reasons one might have behind one's religious or moral beliefs.

This is an apt counter to Wilkins and Griffiths, albeit one that they anticipate, in stating: "If there are independent reasons for religious belief, their cogency is not removed by the fact that religious beliefs have evolutionary explanations."[393] The question then becomes: 'what is an 'independent reason'?'. In my application of the Faculties EDA, it has been clear that much of its power stems from the fact that it dispossesses people of what they might think to be reliable faculties. The sort of proposition Vavova and Königs propose as independent is a justification based on reasons external to the origin of the belief. As seen, that reply was effective against sensitivity Aetiological EDAs. But a similar justification would not count as 'independent' from a Faculties perspective because of the broader scope of Wilkins and Griffiths' EDA; pursuing whatever faculties produce religious beliefs.

For a reason to be independent in the sense that Faculties debunkers mean, i.e. admissible evidence for metaphysical belief, it must rely upon a faculty that crosses the MB. Ultimately, reasons cannot be made independent from the faculties upon which they depend due to the importance of faculties in grounding justification. If Königs or Vavova

[390] Wilkins and Griffiths, "Evolutionary Debunking Arguments…" (2013). p11.
[391] Königs. "Two Types". (2018). p11.
[392] Vavova, "Debunking Evolutionary Debunking" (2014). p.10.
[393] Wilkins and Griffiths, "Evolutionary Debunking Arguments…" (2013). p.12

believe that they have found reasons relying on faculties that can be known to be reliable by the MB principle, then they ought to present them. But what the pair offer in their respective papers is more akin to a promissory note. They each want to say that independent reason can be given, but do not seem to appreciate that the nature of Faculties EDAs is such that the debunking still occurs, even on the reasons that they try to separate to justify their moral realism. Wilkins and Griffiths' EDA highlights any given faculty that might be used for justifying moral beliefs, and, given that it arose for reasons separate to the fitness it produces, questions its reliability. Hence, any reason proposed by Vavova or Königs will, in the absence of their declaring a different, defensible source, suffer the fate of being debunked.

The same would apply for any justifications for religious beliefs, as was seen when surveying the prospects for natural theology. Addressing Königs' allegation of an ad hominem attack specifically, it is important to note that EDAs do in fact offer a reason *why* moral realism cannot be justified. The reason they provide is that justification of moral realism is impossible. It might not be a reason why moral realism is *false* but it still functions against the possible justification of moral beliefs. Debunkers' epistemic attacks do constitute reason to doubt moral faculties. That fact, allied with the difficulty of expressing an independent reason for metaphysical beliefs that uses only faculties passing the MB test, means doubt about reliability lingers. Unless and until a dissenter provides a reason that relies on faculties not debunked by an MB-style EDA, metaphysical faculties remain debunked in the face of Königs' and Vavova's defence.

One natural question arising from my defence of Faculties EDAs here concerns my assertion that there is not likely to be an independent reason for religious or moral realism that does not rely on a debunked faculty. To answer such queries, I point the reader in several directions. First, the potential for natural theology within an EDA environment has been addressed in the previous chapter and will be discussed further in chapter 8. Next, third-factor responses are responses to EDAs like Wilkins and Griffiths' that propose a 'third-factor' demonstrating why a faculty produces both truth and fitness. For example, Erik Wielenberg proposes a third-factor- the moral goodness of survival- to link moral facts to evolutionary fitness.[394] I find such responses unconvincing and question-begging, as they must assume moral facts; I also expand on this in chapter 8. The possible final query is whether religious faculties could produce approximately true beliefs. This option fails because diverse religious beliefs seem to produce equivalent fitness. Therefore, the notion of an independent reason salvaging religious beliefs is implausible.

Wilkins and Griffiths' EDA appears to withstand the counters addressed towards it from the field of moral philosophy. FitzPatrick's attempts were weak- a seemingly brute belief in human moral faculties offering little resistance to a Faculties EDA. The Levys provided more food for thought, developing the notion that people can self-improve their own abilities to know metaphysical truths. This idea led to a major discussion of the view of a

[394] Wielenberg, "Ethics and Evolutionary Theory", *Analysis* (2016). pp.4-7.

human being that we ought to take, particularly viz. human limitations in the light of our evolved nature. Unfortunately for the Levys and FitzPatrick though, the possibility of humans consistently transcending their upper and lower bounds was discredited. Similar ideas were given further hearing when Vavova and Königs presented pertinent counters to Faculties EDAs based on independent reason. This latter possibility was even admitted by Wilkins and Griffiths themselves, so showed real promise. Not all independent reasons are equal though, and (by my interpretation of their Faculty EDA), Wilkins and Griffiths cannot permit justifications that ultimately use debunked faculties. The field of moral philosophy still made an invaluable contribution to this chapter in clarifying the scope and pre-requisites of this Faculties EDA, but it could not defeat it.[395]

Despite the litany of failed attacks on Faculties EDAs considered thus far, it has been instructive to ponder them, as it elucidates where the strength of such EDAs lies. Working against them from within their framework was found to be futile, leading to abortive attempts to prove the reliability of religious faculties, or a very limited conception of religious belief. The argument's structure was interrogated, showing premise 1 and 2 were meaningfully linked, as was the conclusion, so to attack its validity on those lines was in vain. Finally, moral philosophy exposed an unlikely escape concerning human self-transcendence. Yet from a perspective considering humans as evolved creatures, little progress was made in debunking the debunkers. Nevertheless, I do believe that this can occur, and they will not finally carry the day.

Visala's views

Faculties EDAs have proved until now to be remarkably resilient. Minor vulnerabilities are beginning to emerge, though, in the areas of potential religious truth-tracking and use of independent reasons. To aid this progress, I evaluate a few further counters from Aku Visala, who has written several pieces concerning EDAs against religion, two of them with co-authors. As was discussed in chapter 1, for example, if debunkers tie themselves initially to strict naturalism, then Visala points out that they would be disallowing the possible justification of religious belief from the outset.[396] Luckily, the Faculties EDA does not suffer that particular pitfall, due to the aforementioned adoption of a more lenient posture of methodological naturalism. Despite evading this first counter, there are more specific objections Visala raises against the arguments proposed by Wilkins and Griffiths.

David Leech argues, with Visala, that there is a gap between what CSR can tell us about religion and what would be needed to undermine confidence in religious beliefs. They assert that arguments to the unreliability of religious beliefs are similar to Aetiological insensitivity arguments insofar as they don't demonstrate a failure of metaphysical

[395] A similar argument to Vavova's and Königs' is offered by van Eyghen, who argues that religious beliefs are constrained by reality. In this regard, it fails for similar reasons to Vavova's and Königs' arguments, but an adapted version of this position will be considered in greater depth in chapter 8. van Eyghen, *Arguing from Cognitive Science of Religion: Is Religious Belief Debunked?* (2020). Chapter 5.4.2.

[396] Visala, *Naturalism, Theism and the Cognitive Study of Religion* (2011). pp.147-8.

faculties in a metaphysical context.[397] Furthermore, the pair argue that specifically evolutionary arguments against religious faculties, like those provided by Wilkins and Griffiths, are not problematic because there are many ways to know beliefs. This counter is a somewhat adapted version of the counter that Königs provided, while adding some ideas from natural theology. It is thus more specific in stating clearly where there might be a pathway to justified religious belief in light of EDAs. Nonetheless, as seen, the typical ways that religious believers might use to justify their beliefs are indeed shut off by EDAs, because they must always make a claim about God (or another metaphysical phenomenon), so synthesising these two counters does not strengthen either enough to worry debunkers. Thus, Leech and Visala's assertion that "CSR theory can probably be assimilated reasonably easily by a large class of theists who do not have a principled objection to the biological and cognitive sciences" underestimates the power of Faculties EDAs to disarm the reasons that theists might use to justify their beliefs, as the Milvian Bridge epistemic test suggests that religious faculties are unreliable.[398]

Another counter that Visala posits, this time in conjunction with fellow philosophers Christopher Kavanaugh and Jonathan Jong, addresses the separation between beliefs and faculties. Visala et al point out that God may very well not be what CSR mechanisms are sensitive for, and even if one uses a faculties-focussed argument against religion, there is seemingly little compulsion to think God does not exist.[399] They also recognise, however, in a theme repeated in other works by Visala, that the lessons of humanity's evolutionary past, even if not harmful for religious beliefs, will definitely not be helpful. He argues that if one claims that CSR works for the benefit of religion, then one is admitting a connection between religious beliefs and their origins that is more advantageous to dismiss, because if admitted it can be turned against beliefs.[400] The latter point is a notable admission, conceding more than many other opponents of EDAs. It is not, however, enough to safeguard religious beliefs, because it remains a relevant concern whether religious beliefs are justified, even if their subject matter is never in danger of being falsified. As justification seems to require reliable faculties, EDAs remain a relevant danger. Major points emerge from Visala's view- it is inaccurate to say religious beliefs are false as a result of EDAs, and their attempted display of unreliability of faculties is limited in scope.

An Attack that Fits

Bearing in mind the most successful responses to EDAs against religion and morality, I now move to my own response, which I believe to be compelling partly because of its awareness and appreciation of that breadth of possible defences. Before that though, it is

[397] David Leech and Visala, "How Relevant Is the Cognitive Science of Religion to Philosophy of Religion?," in *Scientific Approaches to the Philosophy of Religion* (2012). pp.8-10.
[398] Leech and Visala, "The Cognitive Science of Religion: Implications for Theism?" *Zygon* (2011). p.15.
[399] Jong, Christopher Kavanagh, and Visala, "Born Idolaters: The Limits of the Philosophical Implications of the Cognitive Science of Religion" *Neue Zeitschrift Religionsphilosophie* (2015). pp.1-2.
[400] Visala, "Reflections on the Debate: What Does Philosophy Have to Do with the Cognitive Study of Religion?" *Method and Theory in the Study of Religion* (2017).pp. 9-11.

worthwhile to note that although numerous objections have been overcome, the basic Faculties EDA required significant expansion. Even Wilkins and Griffiths' sophisticated Milvian Bridge approach to debunking needed much adjustment, development and justification of assumptions in response to opponents. Importantly though, it has so far survived those travails and so if the debunkers are to be debunked, further defiance is demanded. This is what I supply in the forthcoming rebuttal.

It has been established that scientific explanations of faculties, and justifications of the beliefs they generate, are linked because of the ways in which people may justify beliefs. This was important in completing Wilkins and Griffiths' argument, connecting premises 1 and 2 of the generic Faculties EDA to ensure validity. I seek to subvert the validity of that connection. I will show that it is feasible to accept both premise 1 and 2 and yet not accept the conclusion. My counter could equally be said to deny that premise 2 succeeds, though I admit that proposition's general thrust. Where I take issue with Wilkins and Griffiths is in their move from 'religious faculties are unreliable' to 'religious beliefs are unjustified'. I disagree that the former entails the latter, and believe that I can rob the entire argument of its ability to 'debunk' in the true sense of the word.

According to the MB principle that Wilkins and Griffiths postulated, and which has acted as the basis for debunking throughout this chapter and last, only faculties whose evolutionary value stems from producing true beliefs can be used with confidence in justification. The conclusion that Wilkins and Griffiths draw is that our non-MB-secured faculties give us unjustified beliefs, as they cannot be shown to be reliable.[401] The reason why they draw this inference is because, for them, the MB principle acts as a test of whether a faculty (and thus, beliefs that that faculty produces) is 'on-track or 'off-track' (these can also be termed 'truth-tracking' or 'non-truth-tracking'). Wilkins and Griffiths' conclusion is based on a further, erroneous assumption that non-truth-tracking is the same as falsehood-tracking. To be sure, if a faculty is known to be falsehood-tracking (and thus could be termed unreliable), beliefs whose justification requires that faculty are debunked. If a faculty is not definitively truth-tracking (and so could also fairly be termed unreliable), then beliefs whose justification requires that faculty is not necessarily debunked. Faculties debunking arguments utilise sleight of hand regarding the term 'unreliable' to blur distinctions between 'falsehood-tracking' and 'not knowably truth-tracking' faculties, meaning that their debunking conclusion does not follow from the conjunction of their first and second premises.

The principal question then becomes: into which of these two categories do 'religious faculties' fall? Considering again the prior discussion of humanity's religious tendencies in chapter 2, it was evident that such faculties evolved for several reasons, none of which was truth-tracking. But how might one prove the faculties were falsehood-tracking? The only method I can imagine would first require knowledge of true religious belief. By that metric, we could then assess every religion, and adjudicate whether evolution had

[401] Wilkins and Griffiths. "Evolutionary Debunking Arguments…" (2013). p3.

typically provided us truth-tracking or falsehood-tracking faculties. There is one not-so-tiny flaw in this otherwise immaculate plan though. As far as I can tell (and if any reader knows otherwise, please do not hesitate to inform me), no person has been able to suggest a universally accepted account of 'true' religion- such a thing would solve a great many problems! So, we lack a metric for knowing in the first place which religious beliefs are true and which are false. This is unlike the metric we have for empirical faculties, for example, where accurate representation of the world can be assessed by empirical testing. Ultimately, we thus cannot say religious faculties are falsehood-tracking. By the same token we cannot know which are truth-tracking, as we have no truth to which to refer, so 'non-truth-tracking' is as much as can be claimed. Echoes of Visala's and Thurow's objections are apparent here. They stressed that Faculties EDAs could not prove beliefs to be false, which was nearly a telling attack.[402] Pointing out that Wilkins and Griffiths cannot demonstrate the falsehood-tracking nature of religious faculties ought to prove a mortal blow to their argument's hopes of success.

The closest to a falsehood-tracking religion one might reach could be an Edward Tylor-esque religion, which attempts to explain natural events. It might fulfil this task imperfectly, and later be corrected by scientific advancement. But this sort of religion, if it even exists, would represent a very small proportion of religions. More importantly, a religion being wrong about natural matters tells us nothing about its metaphysical correctness. Thus, amendments from science would only inform us that religious explanations of *physical* phenomena are incomplete, without enlightening us about how accurately religious beliefs track *metaphysical* truth, or making certain religious faculties falsehood-tracking. Hence, we remain unable to know whether the religious faculties that evolution provides are metaphysically falsehood-tracking. Equally, one cannot claim that they are truth-tracking. But 'not necessarily truth-tracking' is far from the same thing as 'falsehood-tracking', and it is the latter that Faculties EDAs need, to debunk.

Such EDAs in a sense fall prey to the genetic fallacy once again. Proponents of Aetiological EDAs thought that by explaining the origins of religion it would be self-evident that religion was false. The Faculties critics, on the other hand, go a step further in explaining the origins of the faculties that produce religious belief. But it is no more self-evident in the latter case than the former that the debunkers' elucidation of faculty genesis demonstrates the misleading nature thereof. Explaining that faculties had an evolutionary origin does not confirm, or even imply, that they produce falsehoods. The vital meta-epistemic principle introduced, the Milvian Bridge, prima facie strengthens the more sophisticated EDA as laid out by Wilkins and Griffiths. But that principle alone offers no more reason to debunk than the Aetiological arguments had, because it reveals only that we cannot say religious faculties are truth-tracking.

Again there are echoes of previous discussions here. Defenders of moral realism above commonly argued that despite Faculties EDAs, external reasons were still valuable for

[402] Thurow, "Does Cognitive Science…?" p.13; Jong and Visala, "EDAs against Theism…" (2013); Leech and Visala, "The Cognitive Science of Religion" (2011).

justifying ethics. Indeed, Vavova states that "evidence of irrelevant influence is worrying when it gives us reason to think we are in a bad epistemic situation" but contends that EDAs do not make the connection from evolutionary influence to bad epistemic situation.[403] This concords with the part of my counter that states that metaphysical faculties are not nullified just because they are non-truth-tracking. The moral philosophers were partly correct in pointing out that faculties might still have some worth in spite of what debunkers claim. They had acknowledged, though not fully exploited, the incompleteness of EDAs that argue towards falsehood-tracking. A failure to demonstrate that religious faculties are truly unreliable means religious beliefs *cannot be said to be unjustified* in light of an evolutionary analysis of their epistemological foundations.

Debunkers Debunked?

It appears as though attempted Faculties debunkers, like Aetiological debunkers, have failed in their task. Yet it is illuminating to revisit briefly definitions and goals, as it sheds further light on how the debunkers are debunked. The definition of 'debunk' is "to expose (false claims or pretensions)".[404] This formed the basis of the working definition used here. That is, for an argument to debunk religious beliefs it must expose falsehood within, or undermine our ability to justify, them. Under my analysis, what does Wilkins and Griffiths' argument do? Not 'debunk'. Chapter 7 sees the construction of a different evolutionary argument that I believe succeeds on its own terms, but the EDA as debunkers put it does not. By showing that religious faculties are non-truth-tracking Wilkins and Griffiths provide no reason to question beliefs generated by them. In such circumstances, their EDA does not induce even slight erosion of confidence, because it is too ambiguous about human capacities for it to invoke doubt. It is untrue, therefore, that religious beliefs are at all 'debunked' as they can still be justified, in the absence of reason to think otherwise. Hence, Faculties debunkers are themselves debunked, because the false claims they made about the vulnerability of religious beliefs have been exposed.

Of course, the debunkers would not accept their own debunking meekly. As mentioned at the beginning of the chapter Wilkins and Griffiths, perhaps in anticipation of my style of criticism, profess "debunking is not disproving".[405] By hedging their bets and conceding this, they actually acknowledge that they have failed in their stated objective- to show religious beliefs are unjustified. They aver they never aimed to do what one would imagine they endeavoured to do, due to their retention of language of 'debunking', which implies an attempt at showing irrationality.[406] Yes, debunking is not disproving, as it need not provide definitive 'proof', but Wilkins and Griffiths openly claim to "undermine our confidence" in religious beliefs.[407] They are also clear that religious beliefs are generated by

[403] Katia Vavova, "Irrelevant Influences," *Philosophy and Phenomenological Research* (2018). p.11.
[404] Oxford English Dictionary, *"Debunk, V."*
[405] Wilkins and Griffiths, "Crossing the Milvian Bridge…" (2015). p.26.
[406] As mentioned, Wilkins states: "We can therefore conclude that religious belief qua religious belief is debunked by EDAs in the absence of good reason to think otherwise". Wilkins, "Is Religion…" (2016). p.15.
[407] Wilkins and Griffiths. "Evolutionary Debunking Arguments…" (2013). p.11.

an off-track process with regard to truth and that this is problematic for justification of them.[408] Therefore, to state that "debunking is not disproving" is poorly executed hair-splitting in an abortive attempt to maintain the integrity of their argument. In any event, even if (improbably) Wilkins and Griffiths in particular never believed that their argument debunked, there are others who utilise similar Faculties arguments, such as Robert Nola, who would claim that they do debunk.[409] Thus, denying this most substantial version of Faculties EDAs permits me to say that until a stronger version is presented, attempts to debunk religious faculties have been debunked.

Another potential avenue through which to revive the debunking prowess of Wilkins and Griffiths' EDA would be to claim that non-truth-tracking *is* equitable with falsehood-tracking. One could say that if our beliefs do not need to be true, then they are likely to be false, due to the often-shaky grounding of evolved faculties. On the other hand, such a protestation lacks evidence beyond baseless inference; some evolved faculties might track truths by happenstance, others might not. The MB test avowedly tells of reliable faculties but not unreliable faculties- it is a genetic fallacy to associate non-truth-tracking with falsehood-tracking. An alternative option would consist of admitting that one cannot link the two but that faculties must prove themselves to be truth-tracking (as opposed to merely not-falsehood-tracking) if they are to be used for justification. But this is much too high a bar to clear, and is reminiscent of Vavova's NO GOOD principle examined in chapter 5. Essentially what is being proposed is to treat beliefs as guilty (false/unjustified) until proven innocent (true/justified). Not only does this set a dangerous precedent that would ultimately damage beliefs necessary for the Faculties EDA, but it is also far too broadly destructive and would leave few beliefs unharmed across many domains. Hence, attempts to equate a lack of MB with falsehood-producing faculties, whether directly or by strict epistemic principles, are veritably non-viable. Wilkins and Griffiths seemingly realise as much when they attempt to claim success in debunking despite the limits of their EDA.

This chapter began with the strongest iteration of a Faculties EDA, promulgated by John Wilkins and Paul Griffiths, which possessed real potential to undermine religious belief, and could avoid the abundant traps of self-defeat. I investigated and assessed a multiplicity of counter-arguments. These ranged from assurances of the reliability of religion, to attacks on the EDA's limits, to defences of moral realism that were transferable. Upon surveying this array of arguments, many seemed to have missed the key points of a Faculties EDA, while others that grasped its full potential failed to counter effectively. There were several worthwhile points made, but none were carried to their argumentative zenith. My own, fitting counter drew themes from some of the more robust objections already stated. I argued that a key distinction must be made between faculties that can be known to be falsehood-tracking and those that can be known to be non-truth-tracking. When one makes this distinction, it becomes clear that the MB principle, proposed by Wilkins and Griffiths, shows that religious faculties fall into the latter rather than the

[408] Wilkins and Griffiths, "Crossing the Milvian Bridge…" (2015). pp.22-25.

[409] Nola states "[religious] believings lack any justification and are thereby debunked" Nola. "Do Naturalistic Explanations…?" (2013). p.21.

former category, which is far from sufficient to claim any debunking whatsoever of religious beliefs. Proponents of Faculties EDAs have no adequate answer to redeem the debunking power of their arguments, so the justification of religious beliefs remains intact in the face of their assaults.

My prior defences of the Faculties EDA were not false attempts to lure debunkers or readers into a sense of ease. There are a number of aspects on which I genuinely agree with its propositions. I continue to defend the Milvian Bridge as a relevant and useful principle, which functions well in adjudicating on reliable and unreliable faculties, as long as certain reasonable assumptions are made. Moreover, I find premise 1, the idea that religious beliefs can be connected to faculties that did not evolve for the purpose of tracking truth, unproblematic too. These are significant, defensible points, valuable for the work to come in chapters 7 and 8.

I have comprehensively reviewed the most feasible EDA against religion and despite its many strengths, it is ultimately ineffectual. It is thus reasonable to suggest that in their efforts to debunk religion, debunkers have found themselves debunked. This section of my thesis, over three chapters, has assessed these evolutionary attacks on religious beliefs. Given that they have been found wanting, what does their failure tell us? The genetic fallacy looms large, and must be suitably respected when connecting origins with beliefs. Additionally, I have gleaned that evolution does seem to lay constraints upon what beliefs humans can justify, and the Milvian Bridge principle is a sound epistemic test for arbitrating on such matters. Furthermore, although EDAs do not debunk religious beliefs, they do not fail due to issues of self-defeat or faulty premises, but due to over-confidence in what they say about religious faculties. Therefore, the scene lays open for the entry of my own argument, which will remedy major issues from EDAs, setting out a more carefully considered evaluation of how evolution ought to affect epistemology.

Section 3

Evolving Agnosticism

Chapter 7:
Evolved Epistemology and Agnosticism on Religion

Over the second section of the thesis, I surveyed a variety of arguments about, and approaches to, Evolutionary Debunking Arguments against religion. Those chapters addressed one particularly fervent view on the relevance of evolution for religion. This third section of my thesis brings the many disparate threads together, driving this investigation to its argumentative climax with my proposed understanding of evolution's effect on religious epistemology. My suggestions here are rather original, but are not without precedent or context. By this chapter's end, there should be total lucidity on the singular importance of EDAs, and evolution more broadly, to rational reflection upon religious belief. I will set out my proposal for the limitations of human understanding, as exposed by evolutionary thinking, and the drastic consequences for religion that follow considered reflection upon the principles that proceed from those limitations.

Before I establish my argument, I briefly retread the steps of this thesis. The first chapter discussed definitions and scope, deciding the focus of the thesis would be metaphysical religious beliefs. The second chapter addressed the evolution of religion, showing that while theories abound as to its origin, progress is being made towards a full explanation, which does not include its truth value. In chapter 3, I demonstrated that whichever model of justification one uses for religious beliefs, the source of beliefs is a relevant concern. Chapters 4-6 discussed various EDAs, in particular John Wilkins and Paul Griffiths' form based upon the Milvian Bridge principle, which I deemed to be the strongest. The single biggest factor in their failures was that no argument adequately linked religious explanations or faculties with a reason why religious beliefs were debunked.

Each chapter addressed issues integral to philosophical theology. Yet they were also parts of a larger whole, laying groundwork for my argument by evidencing specific premises. The prior paragraph set out some key lessons learnt from each chapter, which contribute to the argument that I now propound. They were similar in style, surveying potential arguments or theories, then offering criticisms, leaving us with little remainder. This chapter marks a departure from that structure, as, having defeated myriad alternatives, my own argument enters the limelight. By reviewing previous defeats, I know which obstacles to avoid. The prior steps were therefore useful in their own rights, but also necessary to set the stage for my proposal of evolutionary agnosticism.

The specific beliefs targetted in this chapter are metaphysical religious beliefs such as 'God exists' or 'the Qur'an is the word of God'. The definitions of 'metaphysical' and 'religious' are fraught and were discussed at length in chapter 1, where I aligned them with usual philosophical usage of such terms. The beliefs in question can be set apart from uncontroversial empirical, historical, and scriptural religious beliefs, such as 'the Pope is the leader of the Catholic Church'; 'Muhammad conquered Mecca'; and 'in the Torah,

Moses brought the ten commandments down from Mount Sinai', respectively. The beliefs that are of interest must also admit of rational justification. If a believer holds without justification the belief that 'God exists', then it is trivially not susceptible to the argument that I propose. The most obvious examples of beliefs I interrogate come from natural theology, which offers rational justification for metaphysical, religious beliefs. I will use Richard Swinburne's work as an indicative example to show how my argument applies. I could just as easily, however, use Aquinas', Descartes', or Paley's works as examples, because they advance arguments and defend positions similar in kind to Swinburne's.

In this chapter I set out in full the argument that destabilises natural theology, pushing the rational religious believer to irrevocable agnosticism. In the next sub-section, I expound my argument formally, enumerating each premise, before defending the underlying logic of the whole structure and providing reasons for each of the premises. Having spelt out my bold conclusion, I will then survey its possible applications, looking primarily at religious beliefs, but also dwelling on other areas of concern, such as moral realism. To finish the chapter, I sharpen the nature of my argument, demonstrating that it is not an EDA because it does not debunk, and setting out which beliefs *are* permitted.

The main thesis of the forthcoming chapter, and the keystone of the thesis at large, is that religious beliefs *cannot* be justified by humans, as they appear in this world. The evolution of religion is indeed due cause for scepticism about the rationality of religious beliefs, as EDAs first propose, but for reasons largely separate to those offered by any debunker. My principal contention is that a proper consideration of our evolutionary past will inevitably draw the conclusion that humans are not the sorts of beings who can know metaphysical, religious facts, as our faculties are incapable of providing us such truths. This realisation should provide a significant stimulus, encouraging a rational enquirer to be agnostic about the justification of religious beliefs, due to limits imposed by evolution. If I am correct, there are extensive consequences, but they do not include religion's debunking, only its unjustifiability. Nevertheless, my thesis fervently denies the possibility of a human that arose due to natural selection being able to justify his religious beliefs.

My argument for Evolutionary Agnosticism

As promised, I start by stating my argument. It proceeds as follows:

> Premise 1) Religious beliefs are generated by human religious faculties.
> Premise 2) All human faculties evolved thanks to a process of natural selection.
> Conclusion 1) Human religious faculties evolved thanks to a process of natural selection. (from P1 + P2)
> Premise 3) If a faculty evolved via natural selection and does not pass the Milvian Bridge test, it cannot be known to be reliable.
> Premise 4) Human religious faculties do not pass the Milvian Bridge test.
> Conclusion 2) Human religious faculties cannot be known to be reliable. (from C1 + P3 + P4)

Premise 5) If a human faculty cannot be known to be reliable, then beliefs that are generated by it cannot be justified by humans.
Conclusion 3) Religious beliefs cannot be justified by humans. (from P1 + C2 + P5)

The argument is formally valid. The premises form the building blocks for the conclusions, which themselves escalate towards the climactic third conclusion. No immediate problems present themselves in moving from the premises to the conclusions, given certain basic assumptions about the nature of justification, evolution, and faculties, all accounted for earlier in this thesis.[410] What is far more contentious, and what I will spend the rest of this chapter expounding, is whether the argument is sound. For it to be sound, as well as achieving overall validity each premise within it must be true. Naturally, I believe that it is possible to source evidence to justify each premise of my argument, and I aim to persuade sceptical readers that there is no weak link in the chain that I have produced above.

All the premises that I propose are to some extent controversial, but none should be novel to any great degree at this point. Each has received treatment earlier. Premise 1 is a primarily semantic point, elaborated upon in chapter 1. Premise 2 and conclusion 1 were the subject of the second chapter. The third and fourth premises are extracted from arguments made in the fourth and fifth chapters of the thesis, regarding the strength and necessity of the Milvian Bridge test, and religion's relation to it. Likewise, those chapters contained allusions to an adapted version of the second conclusion. The fifth premise was discussed in chapter 3, but will receive additional explication here, alongside the final conclusion that relies upon it. Therefore, while I will re-establish the grounds of each premise here, the motivations behind my manoeuvres ought to be evident from the outset.

Starting at the beginning, typically a very good place to start, gives us premise 1. Three main questions demand answering from this premise, strongly tied to one another. First, what are religious beliefs? This question was answered both in the first chapter and in the previous sub-section, and does not bear repeating a third time. Second, what does it mean for such beliefs to be 'generated'? The type of beliefs matters, because different beliefs would be generated in different ways. Focussing on the generation of human religious beliefs, it is not of the utmost importance to answer this question with specificity. Doing so likely alienates one viewpoint or another. For example, if I discuss generation in terms of an incorporeal mind that produces beliefs through rational reflection, then I doubtless dissuade any who believe in a wholly material mind, and vice versa. Hence, for a belief to be generated by a faculty, it need only be the case that the belief is caused by it consistently; the manner of causation is unimportant. The third question thus gains greater import- what are human religious faculties? Again, this has been discussed earlier in this thesis. It does not matter how human religious faculties are defined, as long as a human religious faculty is *whatever* process, phenomenon or mechanism causes humans to have religious beliefs. I can afford not to commit to specific definitions of these terms because of the way that faculties and beliefs are used in the evolutionary thought to come. My aim for

[410] These assumptions mainly concern trivial matters discussed earlier, such as that it is meaningful to talk about faculties and beliefs being generated by them, and that religious justification is as stated in chapter 3.

the first premise is to withdraw as much potential controversy as possible, while making a statement meaningful enough for the purposes of the argument.

Next I shall take the second premise, and the move from those two premises to the first conclusion, in tandem. The second premise is intrinsically acceptable to anyone who believes in the extended synthesis account of evolution, and its ramifications for humans. Indeed, it would require an unpopular and queer alternate theory of human evolution to dispute it. An example of such a theory might be intelligent design. This would contradict the premise by stating that, as humanity did not evolve thanks entirely to the process of natural selection, our faculties are not products of that process. While there are prominent defenders of such a thesis, I am content to declare I need not trouble myself with notions of intelligent design, in part due to unpopularity, in part due to preponderance of empirical evidence running contrary to them.[411] Popular theories that do *not* conflict with premise 2 include Plantinga's guided evolution, or a process theologian's idea that God shapes evolutionary processes from within the world.[412] In fact, no theistic explanations of the evolutionary process dispute the second premise, as long as they admit the effects of the process of natural selection. Seeing as humanity's history as an evolved being is now an exceedingly well-evidenced and founded biological fact, the notion that our faculties arose due to natural selection is nigh-on indisputable among mainstream viewpoints.

There is one other possible issue regarding the second premise. I have noted that several theistic orientations towards evolution, like Plantinga's, are compatible. There may yet be a difficulty insofar as certain ideas might happily accept the truth of natural selection but add supplementary hypotheses. For example, Plantinga's conception of guided evolution could hold that human faculties evolved thanks to a process of natural selection, but that that process was guided to produce certain faculties (such as the *sensus divinitatis*). This variation on the second premise would entail contradiction later in the argument. I intend to explore counters on this theme in chapter 8. For the moment, I will point out that the second premise is not exclusive, nor need it be, for the argument to be valid. The premise is justified empirically and so avoids metaphysical undermining. Conclusion 1 follows from the combination of the first two premises (taking human religious faculties to be a subset of all human faculties), continuing the trend of difficult-to-oppose moves.

Following that first conclusion, the third premise interrogates potential consequences of the evolved nature of human religious faculties. It is a conditional, similarly to the second, though it specifies two conditions in its antecedent. I investigate how conclusion 2 follows from this conditional premise later, but will begin by defending its internal validity. Two

[411] Chapter 1 contains further discussion of objections to Darwinian evolution.

[412] The aforementioned Griffin bases much of his work on Charles Hartshorne's. Hartshorne sets out his process theology clearly in *The Divine Relativity,* including his ideas about guided evolution. Charles Hartshorne, *The Divine Relativity: A Social Conception of God* (1948). To add to Plantinga's modern views on guided evolution, Robert Russell has also set out a simialr theory based on quantum mechanics, though it is not without difficulties. Robert Russell, "Does 'the God Who Acts' Really Act?" *Theology Today* (1997). pp.17-9.; Emily Qureshi-Hurst and Christopher T. Bennett, "Oustanding Issues with Robert Russell's NIODA Concerning Quantum Biology and Theistic Evolution" *Zygon* (2020).

principal assertions justify my use of the premise as it stands. Assertion 1 is that the Milvian Bridge test is an *appropriate and sufficient* epistemic test for discerning the reliability of evolved faculties. Assertion 2 is that if such a faculty fails the test imposed by the Milvian Bridge principle, then it *cannot be known to be reliable*. Although both assertions have been discussed indirectly already, neither is immediately intuitive, so I will explain their reasoning, as their fate is intertwined with the argument's.

Assertion 1 was chiefly defended in chapter 5. There it was found that the Milvian Bridge is a self-referentially coherent and valid epistemological principle. It is not contradictory and so passes the most basic level of scrutiny. Beyond that, I also supplemented Wilkins and Griffiths' own arguments on the matter, to show it to be an appropriate, sensible epistemic test, given that natural selection is sensitive to the products of organisms' faculties (via the behaviours that beliefs cause). In that context, Wilkins and Griffiths' test, with my developments, elegantly arbitrates between those faculties that are clearly truth-tracking and those that are not. Whether the Milvian Bridge principle is sufficient essentially asks if indeed we ought to tarry with questions of evolution when considering epistemology. The Milvian Bridge test suffices, because *not* passing the test is a sufficient condition for one to be uncertain regarding the reliability of a faculty. Accounting for the effect of humanity's natural history on its cognitive capacities, I believe evolutionary consideration of this kind is *essential to justification*. For discussion of the extent to which humans are defined by biology, I refer the reader to chapter 6, in which I argued that ultimate explanations like natural selection set relevant limits on human capacities.

By way of further example, consider a koala. It has evolved to have a smooth brain with limited cognitive capacity, as that is all it requires for its life of eating eucalyptus leaves from trees. Astonishingly, if one plucks fresh eucalyptus leaves and places them on a plate for a koala to eat, it will fail even to recognise them as edible, despite typically spending 3 hours a day engaged in their consumption.[413] The reason for this deficiency is plain- there is no evolutionary benefit gained by koalas having the capacity to recognise eucalyptus leaves accurately in unfamiliar contexts. By the same token, humans have no need to produce accurate religious beliefs, so cannot know whether we have the capacity to do so. Of course, our abilities are far greater in many areas, but that does not mean we are any more able to generate reliable beliefs in a context for which there is no fitness advantage. Although humans are capable of doing many things not primarily aimed at enhancing fitness, our capacities' limits are constrained by the abilities evolution has given us. Just as humans can train themselves to run faster than might be evolutionarily necessary, and yet not fly, so we may create culture and advanced science, and yet not be able to read minds. Wings and telepathy are examples of capacities that are totally non-human, because they rely upon a non-existent ability, just as accurately justifying religious beliefs does. Hence, the Milvian Bridge principle sufficiently arbitrates between human faculties because it informs us about the constraints and limits on justification that evolution has imposed.

[413] C.H.Tyndale-Biscoe, *Life of Marsupials* (2005). p.234.

Assertion 2 marks a departure from the way a debunker would use the Milvian Bridge principle. Indeed, it was the key assertion of chapter 6 that led to my declaration that the debunkers were themselves debunked. It is one of the most fundamental points to my argument, as it charts a middle course between two extreme potential consequences of EDAs. I am not asserting that a faculty's failing the Milvian Bridge test leads to beliefs generated by that faculty being false or unjustified. The primary reason why debunkers were debunked was that they did assert that the evolutionary origin of religious faculties makes them falsehood-tracking. This pitfall is avoided by my argument's more modest claim, that failing the Milvian Bridge test puts faculties in epistemic doubt. While it would be (genetically) fallacious then to claim that they generate unjustified beliefs, they do have unknown reliability, so justifying beliefs based on them is impossible. I reject the debunkers' view because, as discussed in chapter 6, for a faculty to be 'not-knowably-truth-tracking' is a wholly different proposition from it being 'falsehood-tracking'. Yet I also reject the converse view, that a faculty's failing to cross the Milvian Bridge has no consequences for the epistemic status of beliefs based thereon. The epistemic test ought to be a relevant consideration, as long as Assertion 1 is granted.

The middle route that I have plotted leads to the inference (premise 3) that faculties that fail the Milvian Bridge test cannot be known to be reliable. The test considers a faculty, with the potential aim of revealing some problem with its reliability. Although it can answer in the affirmative, insofar as a faculty that crosses it must be reliable or it would not have evolved, the negative is much murkier. The null hypothesis when presenting any faculty to the Milvian Bridge is *not knowing* whether that faculty tracks truth, rather than declaring unreliability. This misunderstanding of what failing to cross the Milvian Bridge means saw the debunkers debunked. I avert this danger- failure to cross means one cannot use the Milvian Bridge test to vouch for the reliability of a given faculty. Hence, we are led inevitably to the soundness of the second assertion of premise 3, that if a faculty fails the test, then we cannot know that it is reliable, as there is no good evolutionary reason for it to be so. Both assertions are thus adequately evidenced.

My defence of the pivotal assertions of the third premise is worthless without premise 4. The question of which faculties pass the Milvian Bridge test is rather more straightforward though, thankfully. I covered it primarily in chapters 5 and 6, though it has roots in chapter 2. The question that must be asked is whether the evolution of religion occurred because of its truth value, or because of *any other reason*. If the latter, then religious faculties cannot cross the Milvian Bridge. Luckily, I have once again only to prove a minimally wearisome case. Although I surveyed an array of possible explanations for the genesis of human religious belief in chapter 2 and offered my own synthesis view, I need not commit to which is correct. There is no requirement, for the fourth premise, to rely upon a specific theory of why human religious faculties exist.[414] I must assert only that they exist for a reason unrelated to the potential truths or falsehoods they provide. In this

[414] Indeed, Lari Launonen rightly points out that specific CSR theories do not greatly affect discussions surrounding evolutionary epistemology, as the evidence they require is quite basic and non-specific. Lari Launonen, "Debunking Arguments Gain Little from Cognitive Science of Religion." *Zygon* (2021).

sense, the fourth premise is similar to the second, as one would need to propose a queer and unconventional theory of human religious faculties to dispute it.[415] I have scrutinised endeavours to make religious faculties cross the Milvian Bridge and will look at more next chapter, but they were and are non-starters, offering no convincing connection between religious faculties' evolution and their reliability.

The two premises that work in tandem are now grounded, allowing me to advance to the fulfilment of the conditional described above. The second conclusion, viewed independently of preceding premises, is an incredibly strident statement. It is one of the major assertions for which I have laid groundwork in this thesis, and, within the context of the argument, should be unobjectionable. The second conclusion constitutes the consequent from the conditional in premise 3. The antecedents are in premise 4 and conclusion 1. If these are granted, then one cannot but be swept towards the second conclusion. There are two clauses that must be fulfilled, that human religious faculties evolved via natural selection and that they do not pass the Milvian Bridge test; each can be found at other stages in the argument. The conjunction of these two (and the conditional itself) being true means the consequent clause *must* be true. Thus, as all prior stages have been followed, the progression to the second conclusion, though it seems tremendously bold, cannot with any vestige of logical thinking be refuted.

There remains a final premise to be evidenced though, which expands specific consequences of the second conclusion. It is another conditional, whose legitimacy I assert on its own merits. The key detail behind this premise was argued for in chapter 3 and (briefly) in chapter 6. It speaks to epistemology, and what justifies a belief. As seen, there were two main schools of thought: internalism and externalism. Significantly, both agreed that the source of a belief mattered for its justificatory status. Though the fifth premise looks initially to be externalist, I showed that an internalist ought not to be troubled by that form of reasoning either. My point of originality is the phrase 'cannot be justified'. I differentiate this from the expression 'unjustified', which has a negative connotation, as I prefer the agnosticism and humility of 'cannot be justified'. The premise has a universal scope, suggesting that for any human faculty whose reliability is uncertain, it is impossible for beliefs to be justified by humans using that faculty. So it applies to religious beliefs, but also potentially to other domains, making it a well-founded, yet expansive premise.

The third conclusion is best construed as a more specific version of the second. The focus of this thesis is beliefs, and so the ultimate conclusion concerns those, rather than faculties. The third conclusion is true within the context of the argument because it forms the consequent of premise 5's conditional. That conditional has its antecedent fulfilled (with especial reference to religious faculties) by conclusion 2, entailing the truth of the consequent. The formulation encourages the realisation that if human religious faculties cannot be known to be reliable, then all religious beliefs are unjustifiable. Once more, for clarity's sake, I emphasise the disparity between unjustifi*ed* and unjustifi*able*; they are

[415] Again, it is here that potential theories of guided natural selection may take issue.

distinct adjectives. The former means that propositions can be evaluated and found to fail criteria of justification, whereas the latter suggests that even the attempt to evaluate the rationality of an unjustifiable proposition is wrong-headed. As the next sub-section demonstrates, the ramifications of religious beliefs being impossible to justify are hardly reduced by that technicality. In this sub-section I have established the machinations of each premise, how they are individually substantiated and how, drawn together, the argument flows inevitably to the conclusion that religious beliefs cannot be justified.

Unjustifiable Theology?

I have expounded and defended, in basic terms, my argument that sets consistent, principled limits on human belief. It sprang from consideration of the integrity of religious beliefs in light of evolution and seems to find issues, but should not be read as though it only applies to religion. The cue is taken from the Milvian Bridge principle, and beyond that, from the evolutionary history of mankind itself. In this section, I explore in greater detail what consequences an evolutionary epistemology of this ilk has, across several domains of human knowledge. I initially focus on rational religious beliefs, while demonstrating that a full consideration must stretch far wider.

The most effective way to consider how my argument applies to real human beliefs is through examples. The majority of the examples in this section relating to religious thought will come from Swinburne's work, which is influential and indicative of other dominant elements of Christian philosophical theology. Chapter 1 comprised a broader discussion of how representative such work is of beliefs from other strands of thought and other faiths, concluding that the work in this thesis, including my argument, does have broader relevance beyond Christian natural theology. But by using one primary foil the applications of my argument are best revealed, though I will use examples from other thinkers when discussing secular beliefs later in the sub-section.

The sorts of views that Swinburne espouses, and which I believe are particularly vulnerable to my argument, take the form of metaphysical religious beliefs. He says:
"By religious beliefs I understand, very roughly, beliefs about transcendent reality, including beliefs about whether or not there is a God or an after-life, beliefs about what properties God has (what God is like), and what actions He has performed."[416]
Later, when discussing his philosophy of justification, he adds:
"A person's belief is rational$_2$ if and only if it is, in fact, rendered probable by his evidence, and his evidence consists of rightly basic propositions which he is justified in holding with the degree of confidence with which he holds them."[417]
These two quotations indicate the types of beliefs Swinburne defends as rational religious beliefs, and what it means for him to defend them as such. They align with the definition used throughout this thesis. Three example beliefs would thus be 'I will go to heaven',

[416] Swinburne, *Faith and Reason*. (2005). p.83.
[417] Ibid. p.93. N.B.: "rational$_2$" is one of 5 forms of rationality Swinburne stipulates, the details of which need not concern us here, as good evidence and probability are key in each case.

'God is omnipotent', and 'God spoke to Moses'. For each belief, Swinburne argues that it is justified and rational if rendered probable by evidence gleaned in the proper manner.

How ought a person who holds beliefs such as Swinburne's alter them, if my argument succeeds? A common, natural theological response when stricken by a counter-argument would be to find some means of deflecting it. Particularly in Swinburne's thought, one point can be refuted by another, to raise the probability of God's existence (or vice versa) to its previous level.[418] But that does not work when faced with the argument I supply. I am not claiming that any particular belief is unjustified. If I were, a response showing how one might justify the belief in question would be acceptable.[419] Rather, I am claiming that religious beliefs, as a class, *cannot be justified*. They cannot be rational or "rendered probable" because the sort of evidence that would permit them to be so is not known to be available to any human. It remains nonetheless feasible to dispute the specifics of my argument, to contend that religious beliefs can indeed be justified. But once one accepts my reasoning, there is no further recourse for those who debate the rationality of any of the prior stipulated sample beliefs, as all religious beliefs are made unjustifiable.

The direction of travel that my argument takes means a feasible argument to defend religious beliefs must re-secure epistemological foundations. As opposed to an argument trying to prove God did not speak to Moses (which would likely be Swinburne's preferred style), my epistemically targetted tactic denies the potential for a believer to present a case for the doctrine that God spoke to Moses. So someone who engages in rational enquiry resulting in religious beliefs, if they find my argument compelling, must simply halt that quest altogether. He or she must survey the beliefs that were once thought to be defensible, and appreciate that because of the unknown reliability of the faculties on which such beliefs are based, they cannot be justified. No probabilistic or deductive argumentation will fulfil what Swinburne requires of it, meaning that in the light of my proposal, one who held beliefs like his must discard them.

Once the conclusion has been reached that religious beliefs are untenable, as they cannot be justified, the consequences can still vary. One can reject all such beliefs, because their being unjustified makes them rationally flawed. By Swinburne's own metrics, he would have to admit that all his beliefs concerning God and metaphysics are irrational, because they cannot be rendered probable, due to a lack of qualifying evidence (or confidence in that evidence). The same holds true for many other examples from natural theology. It thus seems logical to infer that religious believers should stop holding such beliefs, given a conception of rationality wherein a belief that cannot be defended should be discarded. By considering the ramifications of evolutionary thinking on religion, I argue religious beliefs are not rational. Hence, religious believers accepting the evolutionary reasoning ought to recognise the flaws in their religious beliefs, due to their unjustifiability.

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[418] Swinburne, *The Existence of God* (2004). Chapter 14.

[419] For example, if my argument questioned evidence behind the belief 'I will go to heaven', Swinburne could offer counters by listing reasons why he believes he will go to heaven.

The alternative, however, is to continue to hold fast to religious beliefs in spite of a lack of justification. One might do this because one believes rational justification is not necessary in order to hold religious beliefs, as has been mentioned. Alternatively, believers might decide that as long as their beliefs aren't known to be false, they can still be held. This runs the risk of being an anti-rational position, but need not be. It could be an epistemic expression of 'innocent until proven guilty'- positing that because my argument does not prove beliefs such as 'God is omnipotent' to be false or unjustified, they can be maintained. The difficulty here is the believer then eschews the fundamental concept of justification. My argument is quite definite that a religious belief's justification is not possible- beliefs *are* proven guilty in that sense. The other avenue is to say that justification is only a secondary concern to prior certainty that God is omnipotent (for example). This possibility collapses into fideism if exposed to evolutionary epistemology, as the justification portion is excised totally from proceedings. Thus, there is no clear means by which a believer can agree with the argument as I have set it out, while rationally holding his or her religious beliefs, in light of evolution's impact upon epistemology.

Although each premise plays an irreplaceable part in constructing the argument as a whole, the fifth premise is especially essential when one assesses the argument's de facto effects. The notion that faculty reliability *really does matter* for justification of religious beliefs underlies all the consequences I have reviewed. The provenance of a religious belief, and its relevance for discussion of the rationality of that belief, has been the defining topic of this thesis. Mostly, I have sided with apologists who dissociate provenance from epistemic status. But in the final analysis, it is absurd to claim that humans' evolutionary past has no effect whatsoever on the beliefs that we can justify. The religious believer need only face the consequences of my argument if he or she agrees that *why* humans hold beliefs affects the justification of those beliefs. But this is not a controversial statement- if one's perceptual faculties had unknown reliability, one would not trust them. The tools we use to garner religious beliefs are comparably precarious. Appreciating religious beliefs through the lens of evolution can be objectionable, and I have portrayed problems with that approach throughout this thesis. But the power of natural selection over human capacities is indubitable, and once one introduces evolution *appropriately* into one's epistemological framework, the results are unambiguous. Natural selection does not guarantee or even suggest that faculties used to source religious beliefs are reliable, meaning those who accept the connection between faculties and beliefs are unable to justify religious beliefs, and must rationally relinquish them.

Reaching the Limits

The implications of my argument stretch beyond theology. In previous chapters, I looked to EDAs against moral realism to synthesise arguments for use in the arena of theology. Now, I will cross-pollinate my argument to that field. This is a relatively easy task, due to its universality. In particular, premises 3 and 5 are generic, applying to all faculties. By producing generic premises, I can venture to apply the Milvian Bridge test to commonsense and ethical beliefs too, and potentially others. All that is needed to apply

my argument to moral beliefs is to find justification of an altered form of premise 4 ('human moral faculties fail the Milvian Bridge test'). Such a premise could be justified by similar means to the premise pertaining to religious faculties- they evolved for a reason not related to the truths they may provide. This premise ought to be accepted, because, as covered in chapter 2, research studying the emergence of moral beliefs in humans gives numerous reasons for their emergence not related to truth. Similarly to religious beliefs, moral beliefs are commonly thought to have evolved due to the group and kin selective benefits they generate.[420] Hence, that moral faculties evolved for reasons external to truth-tracking, and thus fail the Milvian Bridge test, is a defensible premise.

Each element of my argument retains its influence (and potential controversy, avoided where possible) when applied to ethical beliefs. But to which beliefs does it apply? Again, I draw a parallel between metaphysical religious beliefs and metaphysical moral beliefs. Hence, it is those ethical beliefs that pertain specifically to objective moral realism that emerge as most vulnerable to my argument. The realm of metaethics, then, is the main object of discussion. Statements such as 'it is always wrong to murder' or 'what is right or wrong is decided objectively, independent of what people think', or even 'humans should do good' are all susceptible.[421] They share the common trait of referring to a concept of ethical value whose truth would not be evolutionarily beneficial to know. These views fit within the genre of 'moral realism', though in reality they are examples of a gamut of differing subsets within that larger set, which I have drawn together for simplicity.

To revise the positions of moral realism I will once again select, though in lesser detail, an exemplar thinker whose ethics are troubled by my argument. One classical example would be Plato, who believed values came from a transcendent realm of Forms.[422] A more modern thinker who espouses realist views is Richard Boyd, who believes that moral facts are immutable, exist objectively and can be justified as such by any human.[423] His view that 'murder is wrong', therefore, is founded in the notion that the wrongness of murder is a property that the action necessarily has, corresponding to a set of norms that are the same no matter what humans believe. Such beliefs would be justified by a person knowing that the belief corresponds with the objective norm. This view is typical moral realism, comparable to the sample beliefs Swinburne defended for theists. Both aspire to subject matter whose truth is independent of human beliefs, yet maintain beliefs are justifiable.

As long as they aspire to realism, metaphysical and metaethical facts all face the same fate at the hands of the argument that I have proposed. That is, they cannot be justified. The parallels in the way that my argument treats such beliefs continue into the consequences for those beliefs. Evaluating objective moral beliefs within my evolutionary framework

[420] To add to the summary given in chapter 2, for more on the evolution of pro-social behaviours, see: Azim Shariff and Brett Mercier, "The Evolution of Religion and Morality" in *The Oxford Handbook of Evolutionary Psychology and Religion* (2016).
[421] Given that one goes by real, objective definitions of 'good', 'right', and 'wrong'.
[422] Plato, *The Republic*, translated by Desmond Lee (1955). e.g. §507b-519d
[423] Richard Boyd, "How to Be a Moral Realist" in *Essays on Moral Realism*, ed. G. Sayre-McCord (1988). pp.1-3.

appears to lead to serious, novel epistemic difficulties. One cannot justify that the belief 'murder is wrong' has any objective backing whatsoever, because being able to justify such a thing adds no extra fitness to holding the belief without justification. Hence, philosophers who aim to demonstrate that it is rational to espouse beliefs of that form are undercut. Boyd cannot rationally justify any moral beliefs that have their basis in transcendent metaethics, if he agrees with my argument.

The prospects for any philosopher who hopes to build a cogent metaethical system are austere. Moral realism is compromised as the basis of ethics within evolved epistemology. Indeed, for any ethical statement without obvious means of connecting knowledge of its truth to evolutionary fitness, that statement cannot be justified. As the cause of morality in human societies was the pro-social behaviours it encourages, not truths it generates, any value judgement reaching beyond increase of fitness will be unjustifiable. I shall assess in the sub-section to come the types of beliefs that *can* be justified, working within these boundaries, but it is evident that the majority of objective, rational, moral beliefs are stricken. The vast impact of my argument may make realists hesitant to accept it- these objections will be addressed in chapter 8. If they do, however, agree with and comprehend the consequences of evolutionary epistemology, then their moralities are severely altered.

There are further areas where evolutionary consideration of epistemology (and thus my argument) could hold sway. These are far beyond the remit of this thesis, so I will keep the potentially extraneous discussion brief. We can infer from the contrasting cases of metaethics and religious metaphysics that the characteristics of beliefs vulnerable to my argument are: an irrelevance of justification for evolutionary success and (as a corollary) assertions of objective truth or references to themes external to the physical world. What aspect of these characteristics makes beliefs possessing them vulnerable to my argument? Such features tend to entail a susceptibility to fail the Milvian Bridge test. Assertions of objective truth and rational justification are vital, as without them there is no case to be heard against the rationality of the belief. Yet Darwinian evolution is a process focussed on fitness in a physical sense, and as far as we understand it, evolutionary fitness will be improved by holding true beliefs only when those true beliefs provide physical benefit. This implies the beliefs that an evolved creature *must* justify accurately are those pertaining to the physical world, whereas supernatural beliefs do not carry the same imperative. If being able to justify a belief accurately is not linked to evolutionary benefit, then faculties producing those beliefs will not cross the Milvian Bridge.

Other areas of human belief that appear to fit these criteria include: art and aesthetics, the problem of the nature of the mind, and even some areas of science. The second of these is a blatant candidate. Dualists, who posit that the mind is a non-physical and utterly different substance from the body, would certainly fall afoul of my argument.[424] Likely so too would

[424] The mind/body problem is reviewed in: Mary Midgley, "Souls, Minds, Bodies, and Planets" in *The Resounding Soul: Reflections on the Metaphysics and Vivacity of the Human Person*, ed. Eric Lee and Samuel Kimbriel (2015).

epiphenomenalists or emergentists, who offer arguments that some portion of the mind's workings occur at a non-physical level.[425] One could not infer that physicalism, or a reductive equivalent, is necessarily true, but the alternatives including metaphysical claims could not be justified.[426] Indeed, physicalism itself, through its decidedly negative (and equally unjustifiable) claim about the existence of non-physical entities, would fall afoul of evolutionary epistemology just as much as any other theory of mind. This marks a convenient reminder that my argument does not defend a reductive, materialist view of the world. The central question that must be raised is *how* one might know if dualism, emergentism, or another theory of mind/body relations is true, and whether that method of knowing crosses the Milvian Bridge. I do not wish to wade into this vast area of enquiry in any more detail to avoid digression. Still, my argument could evidently have a major impact on the justification of beliefs in the philosophy of mind.

Art and aesthetics are less obviously affected by my position. But considering again the criteria that mark beliefs as vulnerable to my argument, it is conceivable that there are beliefs concerning aesthetics that fit the bill. Consider Wolfgang Amadeus Mozart's Clarinet Concerto in A Major. This is a piece of art that has been enjoyed by countless people over hundreds of years. Such widespread acclaim foments the view that it is an *objectively* good piece of music. That claim would derive from a view of music wherein there is a transcendent source of goodness to which pieces of music aspire.[427] But would a human's ability to recognise music that corresponded with the transcendent good help its survival value? Surely not- I do not fancy my chances staving off a tiger by displaying my superior knowledge of the perfection within Kanye West's discography![428] Recognising artistic work that is objectively, as opposed to subjectively, good brings no additional fitness, so associated faculties do not cross the Milvian Bridge. It is possible, though, that a justification of the supposed objective beauty of Mozart functions in biological or physical terms, stating that certain pieces of art are universally appealing to humans due to the way they interact with our senses.[429] That would be in essence a third-factor response, which

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An example of a dualist thinker is Stewart Goetz, who favours it for its retention of human free will. Stewart Goetz, "Making Things Happen: Souls in Action" in *The Soul Hypothesis: Investigatons into the Existence of the Soul*, ed. Mark Baker and Stewart Goetz (2011).

[425] Although several of these positions cannot be demarcated so simply, the categorisation serves the purposes of this thesis. Example thinkers representing these broad positions include Timothy O'Connor for emergentism: Timothy O'Connor and H.Y. Wong, "The Metaphysics of Emergence" *Noûs* (2005). And for an influential argument in favour of epiphenomenalism, see: Frank Jackson, "Epiphenomenal Qualia" *Philosophical Quarterly* (1982).

[426] For further reading on physicalism, see: Jaegwon Kim, *Physicalism, or Something near Enough* (2005).

[427] This view is popularly associated with the thinking of Plato, and may include specific notions of 'Forms' or another manner of parsing transcendent aesthetic goodness. His main discussion of beauty is found throughout: Plato, *Hippias Major*, translated by Paul Woodruff (1982). See also: Plato, *Phaedrus*, translated by R. Hackforth (1952). Especially §247-254

[428] Notwithstanding dissent on the matter of whether Mr West's work is in fact perfect.

[429] A useful overview of scientific explanations surrounding Mozart's music is: Nobuo Masataka and Leonid Perlovsky, "The Efficacy of Musical Emotions Provoked by Mozart's Music for the Reconciliation of Cognitive Dissonance" *Scientific Reports* (2012); One particularly interesting paper associating listening to

will be addressed as a potential defence of religious beliefs in chapter 8. More importantly, however, many people (likely the majority) do not believe that there are objective aesthetic values, and would not claim that a piece of art aspires to a transcendent ideal.[430] While a negative existential claim concerning objective aesthetic norms would be too much, beliefs that avoid metaphysical claims, or appeal to subjective norms or scientific explanation, would be mostly unaffected by proper evolutionary consideration of the epistemology underlying their beliefs. Only if aesthetic norms are taken to be objective, then, are they affected by the epistemic limits my argument establishes.

To complete this sub-section, I will survey the potential effects my argument might have upon scientific beliefs. I have already defended, at some length, the position that most scientific beliefs cross the Milvian Bridge, for the sake of self-referential coherence. By adding the Milvian Bridge principle to the framework of my argument, new difficulties may arise, however. Those scientific beliefs necessary for the formation of the theory of evolution ought to remain untainted, as well as many more fundamental scientific beliefs, which are derived from empirical evidence. Nonetheless, some areas of science potentially fulfil the criteria for vulnerability, especially swathes of quantum physics.[431] For example, propositions about the casuistry behind quantum mechanics are generated by faculties of speculation based on interwoven layers of theory- interpretations are underdetermined by data.[432] Is that faculty evolutionarily beneficial? Possibly, but it is possible that theoretical science has in certain cases reached limits where empirical observations are unable to confirm theories that are almost metaphysical, so detached are they from the natural world.[433] If that were the case, then some beliefs about theoretical science that cannot be traced surefootedly back to evidential confirmation would be impossible to justify.

Objections to my observation of the impact of evolutionary epistemology on scientific beliefs might be fervent, especially from naturalists who may typically be keen to accept evolution's effect on epistemology otherwise. In particular, there may be questions over why one area of science (biology) seems to hold primacy over the others, and can invoke doubt on established scientific theories from physics, chemistry, etc. That fear can partly be allayed by the reply that if indeed particular aspects of science are so well-supported, then it should not be problematic to show that, like evolutionary theory, they survive

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Mozart with enhanced learning capabilities: Norbert Jaušovec, Ksenija Jaušovec, and Ivan Gerlič, "The Influence of Mozart's Music on Brain Activity in the Process of Learning" *Clinical Neurophysiology* (2006).

[430] Examples of this view can be found within this brief overview article of areas of aesthetic debate: John Bender, "Aesthetic Realism 2" in *The Oxford Handbook of Aesthetics*, ed. Levinson Jerrold (2003). Equally, David Hume's position on aesthetics would cohere well with an evolutionary approach, as seen in: David Hume, *Four Dissertations: Of Taste.* (1757).

[431] Quantum mechanics itself is famously difficult to understand, but a readable introduction can be found in part I of: Richard Healey, *The Quantum Revolution in Philosophy* (2019).

[432] Franck Laloë aptly describes how quantum theories abound, and how it may not be possible for humans to discriminate accurately between them. Franck Laloë, *Do We Really Understand Quantum Mechanics?* (2019). Especially Chapters: 2.5-6 and 10

[433] The question of whether quantum science is beyond human evolved capacities is certainly an open one, with discussions to this effect from: L. Wolpert, *The Unnatural Nature of Science* (1992). Especially pp. 31-3; J. Bricmont, *Making Sense of Quantum Mechanics* (2016). Chapter 3, 6.

epistemological questions unscathed. Interestingly, and in divergence with other beliefs discussed in this section, the liveliest source of debate when considering scientific beliefs' response to my argument surrounds premise 4 (whether they in fact fail the Milvian Bridge test), which is ambiguous. It is not a question I aim to settle in the limited space available, though I will point out that beliefs like 'the randomness of individual quantum events such as the decay of a radioactive atom is irreducible not only apparent' appear somewhat divorced from faculties that are beneficial only if true, and do not themselves seem to be produced by knowably reliable faculties either.[434] Therefore, according to my argument, if there are particular scientific beliefs that do not stem from reliable faculties, then those beliefs may be deemed unjustifiable. It is not the *science* of biology that holds primacy over other intellectual pursuits, but the *ontological, biological reality* of constrained human cognitive faculties, which reigns supreme in matters epistemological.

Evolutionary Agnosticism and Evolutionary Justification

The prior sections have had the purpose of explicating first the machinations and then the consequences of my somewhat destructive argument. It is regrettable that the position I postulated has such negative immediate connotations, though that alone cannot of course permit us to ignore them. They arise inevitably from fulsome evolutionary consideration of epistemological limits. In this sub-section I aspire to be more constructive, specifying exactly what sorts of beliefs one *can* justify, if one accepts the argument I propose.

A leading point that I reiterate is that I do not see my argument as an EDA. It does not, nor does it desire to, *debunk* any beliefs. To debunk involves an exposure of falsehood, an undermining of the truth or justification of a proposition or belief. By way of further clarification, my argument does not even state that the beliefs it considers are unjustified, which again would transmit a certain negative judgement on their epistemic status. Instead, I am far more concerned with stating simply that beliefs cannot be justified by humans, given the faculties they possess. This point has been belaboured, but bears repetition as it is indispensable to my overall project of evolutionary epistemology. I am aiming neither to disprove nor to debunk. Rather, by positing an epistemic test for beliefs based on evolutionary effects on justification, I have discovered that a *denial* of justification flows readily from uncontroversial premises about human faculties. Appreciating that my argument does not debunk, but denies, elucidates the positive (in a manner of speaking) consequences of my argument. It is a fine line to tread between these two terms; doing so not only makes my position less aggressive, but strengthens my hand against opposition.

There are several domains of human knowledge that I believe to be entirely unaffected by any formulation of my argument, or evolved epistemology more broadly. Agnosticism may be the appropriate response to evolutionary epistemology for certain beliefs, but other kinds of belief can nonetheless find justification. No amount of adaptation can make

[434] These sample statements have been adapted from a study of physicists' views on quantum mechanics. Maximilian Schlosshauer, Johannes Kofler, and Anton Zeilinger, "A Snapshot of Foundational Attitudes toward Quantum Mechanics" *Studies in History and Philosophy of Modern Physics* (2013).

the faculties that produce these beliefs fit into the argumentative structure that I proposed, and so they will not be shown to be unjustifiable. They thus form a useful foundation of reliable beliefs from which construction can begin. The criteria for discerning which faculties *avoid* vulnerability to my argument complement the criteria for those that *were* vulnerable. Faculties that generate beliefs that explicitly and primarily pertain to the world will likely be unaffected by my argument. Equally, if there is no assertion of objective truth, only subjective truth, then a belief is unscathed. Under either of these circumstances, the key identifier is that faculties will pass the Milvian Bridge test. It is essential, for reliability, that a link is drawn between the veracity of beliefs a faculty produces and the fitness generated, because my argument gives good reason why a given faculty under examination might be undermined, unless it incontrovertibly crosses the Milvian Bridge.

The outcome of my interrogation of faculties results in several of the examples discussed in chapter 5. In that chapter, all the faculties that generated beliefs necessary for postulating the Milvian Bridge itself were found to be reliable. These include commonsense faculties, such as those that humans use for basic inference, mathematics, and crucially, empirical observation. From just these faculties, one can argue towards the justification of a host of beliefs. Ordinary beliefs concerning the world around us and inferences about the future, as well as the countless logical and mathematical calculations that humans make every minute while simply existing in the world, all find a firm footing. It is important to maintain these beliefs not only because it demonstrates that the Milvian Bridge, and my argument as a whole, is not a self-contradictory confusion, but also because the ostensibly unshakeable, ordinary beliefs people take for granted will not be made impossible to justify under my philosophy, which would have been a severe problem practically and philosophically.

At this point still only the most basic beliefs can be positively justified. Nonetheless, one can utilise the already confirmed-reliable faculties as building blocks to be more adventurous. The nature of human knowledge is often foundational, and by taking advantage of a quasi-internalist notion of justification, a web of connected, justified beliefs can be formed. This view resembles evidentialism, but can be broadened to cohere with an externalist perspective too, by beginning from human empirical and common-sense faculties and swiftly attaining a broad array of reliable faculties and justified beliefs.[435] For example, I hold the beliefs 'most tigers have stripes' and '1,337 x 869 = 1,161,853'. Neither belief (or belief-forming faculty), in isolation, appears to increase my fitness due to its truth, but in fact neither is ruled out by my argument. The former belief is justified thanks to knowing the reliability of humanity's evolved empirical and inferential faculties, as well as recall, to derive the general claim about tigers from repeated past experiences of them. The latter belief is justified because the faculties upon which it relies are primarily mathematical and deductive, each of which has been vouched for earlier in this thesis. In both of these cases, although holding the particular beliefs in question accurately (and so having reliable faculties) is *not* fitness-enhancing, the beliefs can be derived from others

[435] To see a further presentation, which adds an evolutionary perspective, see: Vlerick and Alex Broadbent, "Evolution and Epistemic Justification," (2015).

that depend on faculties whose reliability *is* fitness-enhancing. The faculties that have passed the Milvian Bridge test can be accumulated to justify some more obscure beliefs.

In forming beliefs that ought to be justifiable, yet whose faculties are not obviously fitness-enhancing only if reliable, there is also an element of correctly identifying which sources one can trust to provide oneself with justified beliefs. I may not have done the necessary groundwork to justify each belief for myself, but the salient point is that I (and other humans) possess adequate faculties such that I (and they) *could* engage in the pursuits that would lead one to being justified in holding both beliefs. So one can gain justified beliefs from listening to a zoologist or a mathematician about tigers or numbers (respectively, not vice versa!), because specialists have the required faculties for justifying them.

There are certain beliefs that people hold where the affiliation between evolutionary benefit and truth is questionable at best. Yet these are often the strongest beliefs humans generate, which go to the core of their personalities, and so if I term them unjustifiable I am surely in the wrong. Examples include: 'Newcastle United are the best football club in the world' and 'I am happy'. In response to these examples, I would argue that one is free to state such beliefs are justified within the framework of my argument, because either they are not believed to be objectively true (in the former case[436]) or their truth is decided by one's emotions (in the latter case), and so merely by virtue of feeling a certain way I am justified in believing that I feel a certain way.[437] The argument I have formulated in this chapter does not concern itself with beliefs of these kinds, so more indispensable beliefs can be added to the set that are unaffected by the limits to human justification I adduce.

Returning to theology, there is a range of religious belief that remains unaffected by evolutionary epistemology, as was described in chapter 1. To reiterate this point, one can consider as examples several Christian theologians, including Kierkegaard and Barth.[438] Certain thinkers such as these are against the prospect of religious beliefs being subject to rational enquiry, so this investigation leaves them unmoved. A more modern example can be found with Mark Wynn's theology, wherein he describes the ways in which religious belief enriches the senses, and life overall.[439] Yet insofar as such theologies' focus is away from the narrow, philosophical conceptions of belief defined above (for example, in Barth's fervently Christological, grace-based ideas or Wynn's elucidation of the importance of embodiment and location in driving religious experience), reconciling them

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[436] Though on a Saturday afternoon I might be liable to asserting its veracity.

[437] Wittgenstein's work is again relevant here, his attack on private language constituting a defence of the nonsense of questioning one's emotions (though this does not discount the possibility for multiple, competing perspectives, as Naomi Scheman points out). Wittgenstein, *Philosophical Investigations* (2009). §244-70; Naomi Scheman, "Forms of Life: Mapping the Rough Ground" in *The Cambridge Companion to Wittgenstein*, ed. Hans Sluga and David G. Stern (2017). pp.10-17

[438] For both theologians, as discussed earlier in the thesis, religious belief was not a matter susceptible to rational justification, so an attack on those grounds misses the mark.

[439] Wynn posits that religious forms of life intertwine with our empirical experience in a way that is mutually enriching- one thus cannot clearly demarcate religious faculties from non-religious faculties. Especially ch.4 of: Mark Wynn, *Renewing the Senses: A Study of the Philosophy and Theology of the Spiritual Life* (2013).

with evolved epistemology remains feasible.[440] Religious experience retains its transformative effects, and may be formed in a manner that is disanalogous with scientific or philosophical beliefs, without necessarily making a claim on justification in the sense in which this thesis describes it. I am wholly aware that there are many religious views, such as those enumerated in this paragraph, which begin from different sets of prior beliefs (including assuming God's existence and influence) or that do not make claims to represent objective reality. I am comfortable that such ideas are outwith the purview of this investigation and remain impervious to it- such an admission does not undermine evolutionary agnosticism's value.

My argument, and its consideration of evolution's impact upon justification of beliefs, is not destructive of all forms of human belief. Rather, it is best understood as a tool that applies to domains of beliefs, which will proclaim them either to be justifiable or not, with many significant genres of beliefs unafflicted. A person can thus justify any sentimental or subjective views, a host of empirical, mathematical and common-sense beliefs, as well as any that can be inferred from a combination of the above. In spite of the fact that certain domains of beliefs (including some theological) can be reconstructed within the boundaries that my argument sets, I have not yet answered the question of what precisely a religious believer ought to do in response to my argument. This is in many ways the most important question of the thesis as a whole, which I am keen to answer fully, to make plain its broader relevance. How should a believer alter his or her views in the light of the argument I have postulated? If a believer had his beliefs *debunked*, then it would be simple enough- he ought to be an atheist, knowing that his beliefs about God are false. Yet realising instead that beliefs *cannot be justified* modifies and complexifies the situation beyond an easy dichotomy.

Treading the Line between Debunk and Deny

"Whereof one cannot speak, thereof one must be silent"

Ludwig Wittgenstein[441]

Confronting the complexity inherent within the consequences for religious beliefs means treading a third path between 'debunked' and 'justified'. Denial of possible justification is not equivalent to claiming that a belief is unjustified. To term a belief 'unjustified' requires a positive statement of its irrationality, which is just as uncertain as its rationality, so my argument defends neither option. Mercifully, finding a compromise between the two more conventional possibilities is not a path I must forge originally. In essence, I will advocate for agnosticism as the ultimate theological result of my thesis, a well-trodden route. My

[440] Wynn also discusses that religious knowledge is not necessarily most analogous to propositional knowledge, but bears similarities with "knowledge of place" in terms of being a practical, encounter-based type of understanding. *Faith and Place: An Essay in Embodied Religious Epistemology*, (2009). pp.5-12; A useful summary of (some of) Barth's epistemological notions can be found in: J. C. Thomas, "The Epistemology of Karl Barth" *Heythrop Journal* (1977).

[441] Ludwig Wittgenstein, *Tractatus Logico-Philosophicus* (1960). §7

agnosticism differs innovatively from similar strands of thought, however, by its evolved focus on the lack of capability to justify religious beliefs. Religious beliefs are unjustifiable rather than unjustified. Hence, a rational person engaging with my argument and agreeing with its conclusions cannot hold justified religious beliefs- at first glance this resembles atheism. But atheism is a positive metaphysical statement.[442] Such a statement is exactly as guilty as its antithesis, theism, in respect of my argument. Neither is rationally defensible.

It seems, therefore, that I have traversed to a middle ground between atheism and theism, not because I believe each side has merits, nor because I find the evidence inconclusive either way. Rather, I extol the virtues of agnosticism for the reason that even attempting to justify a metaphysical claim about religion is impossible. Finding that religious beliefs are unjustifiable, rather than unjustified, means that neither theists nor atheists can be rational in their beliefs, within an evolved epistemology. A philosophical enquiry into religious beliefs ought to result in a profound acceptance that to validate such beliefs is beyond human capacity, thus it is apt to settle for a modest agnosticism.

Comparison is a useful tool for understanding my intentions. My argument for modest agnosticism is associated with an extensive tradition of philosophers of religion, with whom parallels can be drawn. I begin with an oft-mentioned thinker in this thesis- Ludwig Wittgenstein. His position on theology is disputed, but I find it impossible not to infer from his philosophy that metaphysical religious beliefs of the kind under consideration here would be impossible to justify objectively.[443] A similarly influential German-speaking philosopher is Immanuel Kant, whose theological inklings are again complex. One of the most influential axioms he espouses is that people experience the world through a priori categories of perception that allow us to interpret sense data.[444] Metaphysical claims about the way things are in themselves, beyond our impressions and categories, are thus folly. It is along these lines that he critiques natural theological arguments, which grope towards an unreachable object.[445] Søren Kierkegaard's theology also bears similarity with mine. He argues that belief in God can not and should not come from reason. God is an object that is beyond philosophical understanding and "Faith is the highest passion in a person"- it surpasses ordinary conceptions of reality.[446] Hence agnosticism is necessary on the rational claim of God's existence, in order to preserve the fervour of faith. As one might expect, none of these comparisons is perfect, as motives and methods vary. But we share an

[442] Particularly speaking, that statement is of course a negative one: 'God does not exist'. But it is positive insofar as it is a proposition that one claims to be able to know and/or justify.
[443] Indeed, Wittgenstein states: "no statement of fact can ever be, or imply, a judgement of absolute value" in: Ludwig Wittgenstein, "A Lecture on Ethics" *The Philosophical Review* (1965). p.5. Further analysis of Wittgenstein's views on religious belief, and interpretations, is in: Stephen Mulhall, "Wittgenstein on Religious Belief" in *The Oxford Handbook of Wittgenstein* (2014).
[444] The categories are necessary for any empirical interpretation. Kant, *Critique of Pure Reason* (1965). pp.160-9.
[445] Kant, *Religion within the Bounds of Bare Reason*, translated by Werner Pluhar (2009). e.g.pp.4-12.
[446] Kierkegaard. *Fear and Trembling* (1983). *Fear and Trembling* is full of this message, expressed through the example of Abraham's teleological suspension of the ethical and the Knight of Faith's paradoxical move beyond resignation. The message that faith in God stands above and apart from other forms of knowledge is clearly conveyed- e.g. pp.33-5, 46-50, 70-1, 120-3.

overarching respect for the limitations of philosophy in sustaining human ideals. Intriguingly, all three comparisons made in this paragraph were with people who did, to varying extents and for disparate reasons, believe in God. That should further serve to show that my argument, like theirs, does not preclude the possibility of religious belief. It does though, like theirs, remove rational justification.

Stretching still further back into the annals of philosophical theology, readers may recognise hints of apophaticism in my thesis. This is largely unintentional, but it is undeniable that when I discuss the impossibility of justifying statements about God, I echo apophatics, albeit for a different reason to theirs. Apophaticism, sometimes called negative theology, is a Christian tradition based on the notion that one cannot make positive claims about God's attributes.[447] One of its central tenets is given by St Augustine: "If you comprehend it, it is not God."[448] This is evidently similar to the sort of theology my argument condones. One must avoid attributive statements about matters beyond human justification- within both my proposal and apophatic theology- because religious subject matter is too different from normal human belief.[449] Where I crucially differ from apophaticism is that my argument does not permit the justification of negative statements about God either. For example, the statement 'God is omnibenevolent' would be unjustifiable for both apophatics and me, but my argument does not permit justification of statements such as 'God is not evil', apart from when used purely analytically, whereas apophatics would allow that claim.[450] So once again, there are notable contrasts, alongside the similarities, between storied apophatic theology and my own novel proposal.

It is also instructive to draw a parallel once more between religious and moral beliefs, inasmuch as both aspire towards realism. Richard Joyce has a view that concords with mine, in his attacks on the epistemology of moral realism that utilise evolutionary theory.[451] Joyce's moral epistemology is based upon the notion that independent confirmation of the rationality of moral beliefs is lacking, and one cannot simply give realists the benefit of the doubt- it is better instead to remain wary of metaphysical statements altogether. Ultimately, he terms himself a 'modest debunker', because he does not assert that beliefs about moral facts are necessarily wrong, merely unjustified.[452] This is

[447] Although apophaticism refers primarily to Christian theology, a similar strand is also present in Jewish theology (e.g. Maimonides), and Islamic theology, where Mu'tazilites commonly subscribe to the position due to God's utter otherness to humanity. Christopher Knight, "Reciprocal Inclusivism" *Journal of Ecumenical Studies* (2020). pp.3-5; Moses Maimonides, *The Guide of the Perplexed,* translated by Shlomo Pines (1963). Chapter 1.2; Thomas Patrick Hughes, *A Dictionary of Islam.* (1885). p.425.

[448] Augustine of Hippo, "Sermons on the New Testament" translated by Library of HCC Fathers (1844). Sermon 52, §16.

[449] Pseudo-Dionysius is another famous Christian apophatic theologian, expressing many of his ideas in his *Mystical Theology*: Pseudo-Dionysius, *The Divine Names and Mystical Theology*, translated by John Jones (1980).

[450] To illustrate this distinction- the belief that 'the concept of God refers to a non-evil being' is justifiable, whereas the belief 'there exists a being that is called God and who is not evil' is not, as the latter requires metaphysical faculties, where the former is mere concept analysis.

[451] Richard Joyce, "Taking Moral Skepticism Seriously" *Philosophical Studies* (2014). pp.2-7.

[452] Joyce. "Reply: Confessions of a Modest Debunker" in *Explanation in Ethics and Mathematics*, ed. Uri Leibowitz and Neil Sinclair (2016).

a wise approach, which I take one step further (my additional modesty excluding me from the title of 'debunker' altogether)- I posit that religious beliefs are not unjustified, but unjustifiable. Therefore, though I chart an innovative course from evolutionary understanding of human belief-forming faculties towards agnosticism, I have grounded my argument within sound principles of evolutionary biology and human limitations. The conclusions I have drawn from those principles bear resemblance with several pre-established theistic and non-theistic philosophies.

The agnosticism for which I advocate is a settled, circumspect one. It evaluates the prospect of justifying beliefs and knows its limits. It comes about not as the stated aim of an argument against religious beliefs, but as an argumentative consequence of comprehending the impact of Darwinian evolution upon epistemology. My agnosticism does neglect to make positive attributions about metaphysical objects, but is equally shy of negative ones. The central theme is an acceptance of the ramifications of humanity's status as evolved beings. The reason that certain religious beliefs cannot be justified flows from this, rather than any particular linguistic or perceptual problems. Most of all, while my argument is not meant to be overwhelmingly destructive, it should evoke modesty and a broad appreciation that humans are creatures that face limitations. The correct response to such limitations is to demur from guesswork, and acknowledge agnosticism.

In summary, I have used the last two sub-sections to examine and demarcate zones where there is scope, under the scrutiny of my argument, for justifiable beliefs. I have found that many, probably most, serious beliefs that people hold are not damaged by evolved epistemology. I illustrated exactly the sort of theological beliefs that are tenable, if one accepts my argument, with examples and comparisons. Woven together, these strands demonstrate that my argument is not an iconoclastic or destructive debunking, but proposes a far subtler denial of human epistemic capabilities (though it is no less daring for its subtlety). Throughout this chapter the focus has been on explicating my argument and then surveying its consequences. I began by elucidating each premise and the argumentative structure, before addressing how exactly a gamut of beliefs might fit within it. Palpably, my argument has the potential to affect a vast array of beliefs, highlighting the importance of proving that there remains a coherent worldview within the limits I set. In the chapter to come, I intend to address possible counters to my theory, but it suffices presently for me to state my central thesis: that mankind's evolutionary past leaves him faced with inevitable limitations to justified beliefs, especially concerning religion, where modest agnosticism is inescapable.

Chapter 8:
Assailing Agnosticism

The previous chapter laid bare the central claims of my thesis. They lie before us, exposed in their methods and intentions, ready to be dissected. Now I intend to provide as thorough an examination of the various vulnerabilities within my argument as I can. Here I will attempt to assail my agnosticism, by assessing arguments against it. The goal of this chapter is to defend myself from possible critiques and show the strength of my central argument. Undermining my evolved epistemology may seem at first a promising path, but firm forethought about the character of human knowledge in the light of our natural history ensures that my evolutionary agnosticism survives attacks mostly unscathed, to carry major ramifications into theology and philosophy alike.

The structure of the chapter to come is reminiscent of prior chapters, particularly those in the second section. I will begin by considering a variety of counters based on rejecting my definition of faculties, and show why they need not cause trouble. Then I address assumptions, which are a key facet of any philosophical argument, and must be firmly established. Finally, I shall survey a miscellany of less significant worries, which tend to accept my argument on its terms but take issue with one or two specific premises, or its scope and motivations. I will demonstrate that any such concerns are misplaced, and that each premise is sound, as is the argument's overall aim. In each phase, I will raise the most convincing objections to my viewpoint, before repelling them with effective ripostes.

I continue to promulgate the thesis of the preceding chapter, my central argument overall. As attempts to undermine it emerge, there may be some areas where language is softened or methods are clarified or altered, but the primary message remains the same. Despite each counter-argument, I do not hesitate to maintain my claim that religious beliefs cannot be justified. The prior chapter saw the substantiation of my bold conclusion and its ramifications, yet it is this chapter that may hold even greater weight, as it will challenge the objections of those wishing to assail my evolutionary agnosticism, and in doing so demonstrate its strength still further.

Faculties fears

There are several significant fears that a person responding to my argument might raise about 'religious faculties'. At various points throughout my thesis I have examined and defended my particular usage of the term 'faculties', due to appreciating the sensitivity of that matter.[453] Nonetheless, further concerns remain. I hope that by addressing them once again now, I can dispense with any such disputes as possible obstacles to the orderly functioning of my argument. The foremost faculties fears to be dispelled are: firstly,

[453] In particular in chapters 1 and 5.

whether it is at all meaningful to discuss religious faculties as distinct, extant phenomena, and secondly, whether in my particular discussion of faculties I have been much too limiting about faculties' potential, and what beliefs humans can reliably form using religious faculties. The latter issue links to wider discussions about rational thought under evolved epistemology. I will address these concerns in turn, showing that due to the previous groundwork laid throughout this thesis, neither presents a great threat.

Defining Faculties

The potential objection concerning the definition of religious faculties likely takes the form of disputing that human belief-forming processes can be known with sufficient precision to demarcate any things as categorically 'religious faculties'. Without the term 'religious faculties' meaningfully referring to something, my argument has difficulty at its very beginnings. That definition is undoubtedly vital to my argument- premise 1 is central in defining them and then an empirical claim is made about them in premise 2. There are two possible means of expressing the sentiment that human belief-forming processes cannot be reduced to 'religious faculties'- ontologically or epistemically. The first states that no such thing as a 'religious faculty' exists. The second points out that we cannot know what religious faculties are (either due to their inherent complexity or the limitations of modern science), thus I cannot attribute properties to them in my argument. These possible objections are essential to address not only because they can be commonly raised, but also because they target a sensitive location. If either of these two issues is correct, then the argument that I have deployed hits severe strife.

Fortunately, of the two problems that one might raise with my usage of faculties, I believe the first is merely a semantic issue, while the second can be defeated by a wealth of evidence. To claim that no singular 'religious faculty' exists is, initially at least, a fairly unobjectionable contention. When one considers religious faculties one might perhaps be put in mind of a section of the brain, or a collection of internal processes that a neurologist or functionalist philosopher gestures towards as the ultimate, sufficient explanation of religious belief. It is easy to labour under this misapprehension, as there are those, such as Dean Hamer and Michael Persinger, who make claims like these (or at least, there are those who would do so on their behalves).[454] Yet it remains nonetheless a misapprehension for the ease with which one might labour under it. I have repeatedly described and recapitulated my definition of religious faculties. That is, religious faculties are whatever combination of causes and processes result in religious beliefs. Unless one either wishes to posit that religious beliefs are not caused by anything, or that religious beliefs themselves don't exist, then it seems to me absurd to argue that religious faculties do not exist. The existence of *non-ex nihilo* religious beliefs suffices to evidence the existence of religious

[454] For a somewhat clumsy attempt to locate the source of 'God' within genes, Hamer's work is instructive: Dean Hamer, *The God Gene: How Faith Is Hardwired into Our Genes*. (2004). Also, see chapter 2 for Persinger's famous attempts to prove mystical states can be generated in a laboratory by stimulation of brain areas.

faculties. The potential ontological problem with my usage of 'religious faculties' can thus be dismissed as a semantic misapprehension, given the way in which I define faculties.

In light of the definitional fortification I have entrenched to defend the existence of religious faculties, a subsidiary, epistemic difficulty may be preferred. One could be compelled to accept the *existence* of religious faculties, but, semantically, find the definition of such faculties so vague as to be almost meaningless- humans seem to be in a poor epistemic situation for discerning precisely what religious faculties are. This difficulty can be manoeuvred away from its dangerous intent by the contention that one need not know what religious faculties are, or how they work, for them to play a role in my argument. The charge that I have failed to explicate religious faculties' precise nature and function is one that I readily accept, while respectfully pointing out that it is a misconstrual of the argument to expect or demand one. I might agree that humans are in an epistemically weak position for discerning the machinations of religious faculties (though if I did not, it would be of little consequence), while coherently maintaining that they exist for my argument's purposes. The epistemic situation is of little relevance, because my argument does not claim a privileged epistemic position. In fact, I make only one contestable claim about religious faculties, which is that they are affected by the process of natural selection (and so are suitable targets for the Milvian Bridge test). There can thus be no serious qualms about humanity's epistemic status regarding religious faculties, given that semantic and ontological ripostes convince the reader of their mere definition and existence. To continue my stalwart defence of the term 'religious faculties' and prove that concerns are misplaced, there is but one further point in need of clarification.

The final point is raised by the question: why can religious faculties be defined in the prima facie lackadaisical manner used in this thesis (though I would of course challenge any such characterisation, preferring to call it open-minded)? There are two major reasons grounding my definition of religious faculties, particularly explaining the vagaries that I admit are present within it. The first is much preferred, as it faces criticisms directly and defeats them. The second, while certainly strong, less directly addresses the potential problems within my argument, so is only required in case of the failure of alternatives.

My first reason states that, given the concept of 'religious beliefs' understood throughout this thesis, it is fair to construe what produces them as 'religious faculties' without delving into specifics about how they work, because of the importance of the theory of evolution. Natural selection is a central cause behind human behaviour and belief. Yet it is also blind to belief content. Instead, as has been discussed, an organism's adaptive fitness is affected by behaviours it exhibits as a result of its beliefs.[455] Hence, empirical beliefs are reliable because they must approximately track the true state of the world or they will cause maladaptive behaviours. The same can *not* be said of religious faculties. I am just as imprecise about what constitutes an empirical faculty as I am about what constitutes a religious faculty, because from an evolutionary perspective, in neither case do specifics

[455] Plantinga, "Content and Natural Selection." (2011); Law. "Naturalism, Evolution, and True Belief." (2012).

matter. What is of importance is the behaviours caused by the faculties in question, as those interact with the environment to affect fitness. Hence, one could alter the definition of religious faculties to be 'whatever generates beliefs that cause religious behaviours'. Focussing on selective pressures through the medium of behaviours demonstrates why no specific definition of the workings of religious faculties is needed, and thus why my definition remains sound for the purpose of the Milvian Bridge test, which concentrates purely on the effects of natural selection on human belief-forming faculties.

One might still find my evolutionary approach to faculties disquieting. That could be due to suspicions about the notion that all human belief-forming faculties are influenced by natural selection. Or it could be due to lingering concerns that evolutionary approaches are reductive and incomplete. Whatever the reason behind such unease, my second response offers a partial remedy. It is not necessary to take my view totally on faith, or to agree with my definition of faculties, to take my broader argument seriously. In case the reader disagrees with my argument and feels I have not addressed the issue sufficiently, I highlight that there is a gamut of thinkers who consider EDAs. Among these, a great majority take the term 'religious faculties' seriously as referring to an extant, meaningful set of belief-forming processes, even if they disagree with debunking arguments.

Examples demonstrate that to accept that religious faculties exist does not entail an acceptance that religious beliefs cannot be justified. Two critics of EDAs, Hans van Eyghen and Christos Kyriacou, each explicitly accept that the characterisation of religious beliefs as being formed by religious faculties causes no problems.[456] Other example thinkers who discuss belief-forming faculties without attacking the terminology include Wielenberg and Justin McBrayer. Moreover, Plantinga's Reformed Epistemology is to a large extent based upon a definition of 'religious faculties' that is imprecise but still meaningful.[457] The significance of the fact that many philosophers and theologians readily accept a definition of religious faculties adjacent to mine is that my definition coheres with established discussion. This should make it easier for the reader to accept, as it harmonises with an already existing framework and understanding of the term. Under such circumstances, if one hopes to reject the definition I have used, as a way to assail my argument, one must take issue with the broader debate. So, my usage of the term is made safer by observing its lack of novelty. Although that last line of defence is redoubtable, removing controversy from the term 'religious faculties' decisively, it is also dissatisfyingly brute. I have already offered many explicit arguments to ground my particular understanding of religious faculties, all of which I believe hold water. As a last resort though, the objecting reader is presented with the context of the broader discussion, wherein my conception of 'religious faculties' is appropriate and unobjectionable.

[456] Kyriacou, "Are Evolutionary Debunking Arguments Self-Debunking?" (2016); van Eyghen. "Is supernatural belief…?" (2018).
[457] Wielenberg, "EDAs…"; Justin McBrayer, "The Epistemology of Genealogies" in *New Developments in the Cognitive Science of Religion* (2018); Alvin Plantinga, *Warranted Christian Belief* (2000). pp.172-5.

In summary, the two potential difficulties arising from the way in which I use the term 'religious faculties' can be convincingly dispelled. Once the machinations of my argument are thoroughly understood, the possible problems dissolve like salt in the rain. The key behind such dissolution is my assertion that faculties ought to be understood from an evolutionary perspective, as that assertion underpins my definition. Even if my defences of my definition were to waver, within the context of this thesis it remains reasonable, as it fits with the way many other philosophers and theologians have considered EDAs and matters relating to CSR. Having accepted my definition, it becomes nigh-on impossible to criticise further my argument's characterisation of 'religious faculties' as causally efficacious and meaningful producers of religious beliefs.

Faculties as Limits

The other main strand of thought regarding faculties assailing agnosticism is less semantic. The objection is as follows: my argument has a much too limiting delineation between types of faculties, and so unduly constrains the abilities of humans to form justified beliefs about a range of topics. The central thrust of this objection is that the argument I propose uses the simplifying language of faculties to impose unacceptable limits upon human knowledge. An example of a philosopher who proposes an argument akin to this is Joshua Thurow, who admits religious faculties are formed by evolutionary processes but claims that they can nonetheless aspire towards metaphysical truths.[458] From moral philosophy, I have already considered a similar objection from FitzPatrick and Arnon and Yair Levy in chapter 6. The objection is a significant one- viewing all human religious beliefs as being fundamentally limited by the faculties that evolution has provided for us certainly constrains the breadth of justified belief humans may form. As a result, the second and third premises of my argument are called into question.

Attacks on these premises of my argument are specifically fears about faculties, and the limits I set upon them in my definition. I have one central response, to which I have already alluded- I stress that humans are shaped by our evolutionary past. As Justin Horn argues, it is foolish to expect that the processes that created and fine-tuned human capacities would not have a significant impact upon human abilities.[459] This includes epistemological faculties as well. Humans can form beliefs in the way that we can because to do so was beneficial to our ancestors in the environments they faced. Hence, there are limits to human epistemic potential set by the evolutionary needs of humanity. The influence of the evolutionary process cannot simply be wished away, despite the limits it sets on the beliefs we can accurately gain. Expecting that humans can utilise capacities that are not given to us by the process of natural selection is tantamount to expecting us to be able to fly, despite the fact that, due to natural selection, we do not have wings. I am not

[458] Thurow, "Some Reflections on Cognitive Science, Doubt, and Religious Belief" *Roots of Religion*, ed. Barrett, Roger Trigg (2014).
[459] Justin Horn, "Evolution and the Epistemological Challenge to Moral Realism" in *The Cambridge Handbook of Evolutionary Ethics*, ed. Michael Ruse (2017). pp.12-5.

arguing that all human faculties are *solely* products of evolution, merely that their evolutionary past sets constraints on their capacities.

When I make the claim that all human faculties (including religious faculties) are constrained by the evolutionary process that formed them, it is no bold or outlandish assertion, but an evidentially sound empirical claim. To comprehend this, it is of paramount importance to consider the evolutionary viewpoint. Darwinian evolution by natural selection is a process that is insensitive to internal mechanisms, but has, over extended periods of time, an unquestionable influence over every aspect of an organism's behaviours. Elliot Sober's paper further demonstrates the folly of attempting to separate 'rationality' from other human abilities, as it evolved due to the same selective forces as the rest.[460] It is undeniably possible that humans happen to have reliable religious faculties in spite of their lack of adaptive benefit, just as men retain nipples and most humans have appendices, despite there being no use or function for either.[461] Darwinian evolution is not a perfect process that finely hones each creature to their optimum. It does, however, only actively promulgate behaviours and characteristics that engender evolutionary fitness. If non-adaptive faculties evolve, that is due to pure coincidence, an unstable basis for justified beliefs. Certain constraints *are* set upon human faculties by the process of natural selection that brought them about and one would be foolish to ignore that fact. Humans arose due to a process that cared not a single iota for the metaphysical truths we could generate. Realising as such is not pessimistic but realistic. To object that religious faculties are not products of the evolutionary process, with the associated constraints, is to reject a solid empirical claim and replace it with a curious picture of man's capacities.

One final fear about faculties with which I have already dealt, and which I shall treat here to remind the reader of my earlier discussion, regards natural theology. The approximate notion would be that one can justify certain religious beliefs without what one might classically term 'religious faculties'. This view can be associated with counters from Visala as put in chapter 6, though a more circumspect understanding would attribute it to wider natural theology, thus including Swinburne and Aquinas' ideas too. In chapter 5 I found that natural theology did not help theists avoid EDAs. I will briefly restate why, in the light of my own evolved epistemology, natural theology still does not help to assail agnosticism. Using the same empirical and commonsense faculties that one uses to justify everyday and scientific beliefs, can one justify religious beliefs?

To answer this question, it might be necessary to adjudicate on the fate of the entire discipline of natural theology, as if it fails then one can answer confidently that non-religious faculties cannot deliver religious beliefs. That debate would obviously require rather more space than I possess though. Instead, let us assume (generously) that natural theology can be successful, so the cosmological argument (for example) can be sound and valid. No matter how successful such an argument for God's existence is, at some time it

[460] Sober, "The Evolution of Rationality." (1981).

[461] For a brief answer to this much-googled question, and discussion of the nature of evolutionary explanations, see: John Launer, "Why Do Men Have Nipples?" *Postgraduate Medical Journal* (2011).

must include a premise about God (such as 'God is the first cause' or 'God is the designer of the Universe'). That claim necessitates specifically religious faculties, and so it is at this point that my removal of the possibility of justification comes into play. My argument permits me to state confidently that natural theology is not the saviour of religious beliefs, because natural theology ultimately needs faculties whose reliability is unknown. Using well-founded empirical and inferential faculties can establish some premises, but fundamentally a claim about the nature of God or metaphysical reality is necessary. That claim's justification is made impossible by my argument, due to its reliance on a faculty that has no connection between reliable belief-production and fitness-production. Hence, any attempt to undermine my argument by using natural theology to construct religious beliefs without the use of 'religious faculties' would be fatally flawed.

Fears that there are faults in my treatment of faculties can thus be forgotten as they are not well founded. The first major issue, that the definition is itself flawed because it fails to describe something that exists, or something about which we can meaningfully know, was defused. My definition is both sound on its own terms and congruent with a broader framework in which I have been participating throughout this thesis. The second major issue more specifically attacked my comprehension of faculties as reductive and restrictive. In response I contended that any intellectually honest appreciation of the theory of evolution's influence over mankind is bound to agree that religious faculties, like others, have been affected by the process of natural selection. Simply stating as much is not necessarily limiting, and is a well-evidenced empirical claim. Finally, I briefly surveyed the abortive possibility that one can use non-religious faculties to found religious beliefs, and highlighted my abovementioned defence against such a possibility. Therefore, faculties fears have in this sub-section been defended resolutely, meaning my argument's usage of religious faculties escapes unharmed, despite serious assaults against it.

Ascertaining Assumptions

I stated in the previous chapter that certain assumptions were required for my argument to operate. There are several thinkers who would likely dispute these, so I shall ascertain them in this section, by restating in greater depth their underlying logic. Two assumptions, though they were not precisely treated as such, have already been discussed. They concern the definition of religious faculties and the nature of human faculties in the light of evolution. The former assumes faculties can be described in a certain way (though that definition is well-defended), while the latter assumes human faculties are governed in their limits by the process of natural selection that formed them (though again, there is powerful empirical evidence to ground such an assumption). Yet there remain further assumptions whose strength must be tested.

The first and most interesting assumption I make concerns the existence of God. A possible counter of this ilk relates to the potential for religious beliefs to cross the Milvian Bridge. One can interpret the fourth premise of my argument as assuming that religious beliefs are false, so religious faculties fail the epistemic test- this would make my argument

trivially question-begging. That interpretation would be incorrect, though. All that is required for me to state that religious faculties fail to cross the Milvian Bridge principle is for fitness-enhancing and truth-producing abilities of such faculties to be disconnected. Therefore, while there is potential danger when stating religious faculties fail the Milvian Bridge test, harmful assumptions are not required here. Sufficient evidence has been provided in this thesis to justify the proposition that religious faculties arose for reasons independent to their reliability.

There is another, similar counter that asserts that my argument assumes from the outset that God does not exist. This assumption could be read into my assertion that religious faculties arose for fitness, not truth-tracking (which, as seen, is a necessary statement for validating my Milvian Bridge premise). Given that my argument is supposed to lead to the unjustifiability of belief or disbelief in God, it would indeed be nonsensical to assume God's non-existence at the outset. In response, I recall the discussions of methodological naturalism and religious beliefs during chapter 1. There, I made it clear that for the purposes of a scientific or philosophical investigation, one can maintain a stance that there is no outside metaphysical influence. Thus, it is not that God's non-existence is assumed, but that God's existence is not assumed, pending the results of this enquiry.[462] That level of assumption is familiar across several strands of natural theology (including Swinburne and others' ideas), and accords with my understanding of this thesis as an investigation into the rationality of religious beliefs, which by definition (here at least) do not assume God's existence. To function, my argument need not assume God does not exist, but because there is no discernible evidence that religious faculties arose to generate true religious beliefs, it can maintain that those faculties do not cross the Milvian Bridge.

A related assumption upon which my argument depends need not specifically concern the God of classical theism; the assumption is about the metaphysical realm. The assumption, namely, is that there is no causally efficacious metaphysical force bringing about religious beliefs in humanity. This is strongly associated with the assumption made about Darwinian evolution that it is a process as described by modern science, without a supernatural motive or goal. Process Theologians (such as Griffin or Charles Hartshorne) and Reformed Epistemologists (such as Plantinga or Alston) are likely to be my main foes on this point, contending as they do that God drives the evolutionary process, in different ways.[463] The assumption is significant as it underpins my above-defended assertion that religious faculties do not cross the Milvian Bridge, and justifies the use of the epistemic test itself. If it were not God but another supernatural force directing the evolutionary process, the difficulty would be the same. Hopefully, by ensuring that potential objections of this kind can be reconciled I will display here that any friction is perceived, not real.

[462] Once again I appeal to Michael Ruse's clear discussion of atheism and naturalism, wherein he shows that the latter need not accompany the former. Ruse, "Naturalism and the Scientific Method" in *Oxford Handbook of Atheism*, ed. Ruse and Stephen Bullivant (2013).

[463] The prospects for guided evolution of these kinds have been discussed in chapters 1 and 7.

Process concerns about the nature of potential theistic influence on evolution require clarification rather than major adjustment. A challenge of this kind could stem from Griffin's development of Alfred North Whitehead's work; he takes issue with Darwinian evolutionism12.[464] He divides evolutionism into various constituent parts, with this part particularly dealing with its Godless nature. He contests that aspect, arguing instead that process theology and a more modern understanding of evolution forces one to appreciate that evolution can be guided.[465] I agree with this point, as far as it goes. It is important not to base evolutionary theory on ontological naturalism that denies the non-empirical. Yet Griffin saying that Darwinian evolutionism need not entail no guiding supernatural influence must be put in proper context. He is *not* arguing that a supernatural being influences evolution to create beings with correct metaphysical faculties. Instead he states that it is possible for a supernatural being to be designing and guiding the machinations of Darwinian evolution from within the Universe, while the processes, as understood by evolutionary science, remain unaltered, as do their physical effects. As such a statement does not challenge the assumption of no influence towards metaphysically accurate faculties made by my argument, the possible objection from process theology is subdued.

A far more tenacious assault is likely to stem from Reformed Epistemology. I have already discussed Plantinga's ideas about guided evolution and a *sensus divinitatis* at length and shown that they are compatible with the type of arguments I espouse. William Alston raises related but distinct issues that I wish to address, and in doing so I will clarify why a Reformed Epistemologist interested in rational justification of beliefs about God should not be troubled by my argument, or its assumptions. I begin by explaining how Alston's religious epistemology applies to this case.

As discussed in the third chapter, Alston's version of Reformed Epistemology differs from Plantinga's insofar as he aims for a universal explanation of how people form and justify beliefs, rather than relying on a sensus divinitatis. Alston's argument is fundamentally based on a parallel between the formation of M-beliefs (which are, for the purposes of this thesis, interchangeable with religious beliefs) and the formation of empirical beliefs.[466] Justification of each is based on the reliability of the doxastic practices used in the formulation of the beliefs. This conception of human belief-formation is not dissimilar to the faculties-based approach taken by my argument. Reliable doxastic practices generate justified beliefs. Alston believes an inalienable assumption lies at the heart of many doxastic practices that provide us with reliable beliefs.[467] One must assume the reliability

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[464] Griffin's Darwinian evolutionism12 pinpoints evolution's lack of design. His Darwinian evolutionism9 and Darwinian evolutionism14 , concerning the means by which organisms arise, and non-progressivism, respectively, are also relevant for demonstrating Griffin believed certain interpretations of evolutionary theory were incompatible with process theology. Griffin, *Religion and Scientific Naturalism* (2000). Chapter 8.

[465] Ibid. pp.290-310.

[466] Alston repeatedly compares the sensory and mystical doxastic practices, and states "for any established Doxastic Practice it is rational to suppose that it is reliable, and hence to suppose that its doxastic outputs are prima facie justified.", which applies to both. Alston, *Perceiving God*. (1991). p.183

[467] Alston exposes the circularity and brute nature of justifying empirical beliefs, in stating "we must either use sense perception as the source of our premises, thereby already assuming that it is reliable, or else get

of M-belief-forming doxastic practices to have justified M-beliefs, but one equally must assume the reliability of empirical belief-forming practices to have justified empirical beliefs. Alston's reliabilist externalism importantly attempts to equivocate assumptions.

This equivocation causes a clash between Alston's position and mine on whether one can validly make the assumption that religious beliefs are justified. Again, I highlight that the religious beliefs in question need not deal particularly with God, though most of Alston's examples do; they could refer to any metaphysical, causal influence. Alston argues that given it is valid to assume the reliability of our empirical doxastic practices, an equivalent assumption regarding religious beliefs must also be acceptable. So although Alston is not specifically assuming the existence of God, he assumes that beliefs about God are justified. That assumption directly contradicts any attempt by my argument to demonstrate that the processes that result in religious belief are unreliable, thus dooming it to failure.

To reply to Alston, the task at hand requires finding good grounds for assuming the reliability of empirical faculties that do not extend to religious faculties/belief in God. As when defending a definition of religious faculties, there are two potential approaches, with varying degrees of certainty. The first opposes Alston's comparison between religious and empirical doxastic practices directly, on the grounds that empirical practices seem more certain than religious practices. The certainty of empirical beliefs accompanies participation in any meaningful human activity- recall Wittgenstein's statements in chapter 6 that to challenge belief in empirical propositions is to challenge meaningful human language. The same cannot be said for religious beliefs, although in certain forms of life they can take on a similar all-encompassing certainty. An illustration of the different certainties of the two types of beliefs is found in considering diversity of thought within each field. There is no diversity between sighted speakers of the English language when answering the question 'is this a tree?', accompanied with the gesture of pointing at a tree. There is diversity between members of almost any group one can imagine on questions such as 'does God exist?' or 'is the soul immaterial?'.[468] The fact that disagreement in one area of beliefs is expected and common, while in the other is almost inconceivable, is evidence that the two doxastic practices are of differing levels of reliability and certainty.

Alston tackles the problem of religious diversity in his work, but in an unsatisfactory manner. He states that the obvious incompatibilities in beliefs between different mystical doxastic practices is due to divergent interpretations of the Ultimate.[469] The contrasting beliefs have only apparent disparities, because they are directed at the same subject matter. Alston argues that we ought to expect slightly different belief contents, because the

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our premises from some other source(s) that we will have reason to trust only if we already had reason to trust sense perception." Ibid. p.107.

[468] These questions serve as examples to illustrate the blatant controversy found with religious beliefs that is not in empirical beliefs. One could equally ask questions about God's nature, or what created the world.

[469] Alston, *Perceiving God*. (1991) p.258.

exact practices used to develop M-beliefs differ between cultures, and those differences taint our perceptions of the Ultimate, causing the perceived discrepancies.[470]

Although Alston does at least accept the existence of contrasting truth claims, his method for settling them is unsatisfactory. If a doxastic practice is so culturally driven that it can produce two different interpretations of the same subject matter epistemically at odds with eachother, then that practice is not a reliable one for justifying beliefs. For example, if I asked two people to describe an object they could see, and I received two opposite answers, I would rightly suspect that there is something wrong with the process by which beliefs are being formed about the object. Mystical practices are the same- how are we to know which is the veridical interpretation if they are so markedly different? Therefore, there is a meaningful distinction between empirical doxastic practices and religious doxastic practices, and it is acceptable to assume the reliability of the former, not the latter.

As a secondary line of defence against an Alston-style attack, I can fall back to the way in which I have framed this thesis, specifically as it pertains to the justification of religious beliefs. Throughout my treatment of EDAs, and later when espousing my argument, I made it clear that the subjects of any such discussion were reasonable, justified religious beliefs. Alston does offer some justification for religious beliefs, in his comparative analysis of doxastic practices. Nonetheless, the central thrust of his argument is that if one can safely assume the truth of empirical beliefs, then one can safely assume the truth of religious beliefs too. That thrust runs perpendicularly to the direction of this thesis. As mentioned, I am more concerned with the views of natural theologians such as William Lane Craig or Swinburne, who agree that empirical beliefs are basic, but do not in the same way want to make assumptions about religious beliefs, preferring to use rational argument to investigate their justifiability.[471] Alston's manoeuvres to secure religious beliefs by showing that they are as basic as empirical beliefs fail, in my view. Even if they were to succeed though, I can return to the safe territory of the parameters of my thesis to reject the possibility of assuming true religious beliefs prior to rational argument.

When constructing the Milvian Bridge principle, several other, non-God-related fundamentals were made plain. Foremost among those was the assumption that the mixture of faculties that permit humans to 'do' science are reliable. Parsing that assumption, the first element to spring forth is that scientific beliefs require reliable faculties of memory, inference, mathematics and sense. The intermixture of all of these is what allows scientists to make claims about why past events occurred, and predictions about future events. I reformulated the Milvian Bridge principle as a tool that can provide good reason to doubt the reliability of certain faculties. Hence, as long as there is an initial presumption of reliability of 'scientific' faculties, there is no problem with maintaining their usage. While certain philosophers object to the notion of assuming the strength of

[470] Ibid. p.262.

[471] William Lane Craig and J. P. Moreland, "Introduction" in *Blackwell Companion to Natural Theology*. (2009).; Richard Swinburne, *The Coherence of Theism.* (2016).

empirical beliefs, I find such a view unrealistic.[472] In support of my initial presumption, I draw on not only the already-mentioned Wittgenstein, but also evidentialist philosophers such as Bonjour, who argue it is ludicrous even to attempt to question empirical beliefs in normal circumstances.[473] They form such a basic, indisputable bedrock of belief that I have no qualms whatsoever about assuming their reliability as a keystone to my argument.

A further assumption, mentioned in the introductory chapter and utterly crucial to the entire enterprise, is that rationality and justified belief are good things. This is not an assumption for which there is likely to be significant evidence. There are some areas in which having true, justified beliefs does provide practical benefit, but I will freely admit that there is no compelling case for the general goodness of truth that would not be afflicted by my argument, in the same way that moral and religious beliefs are. As a result, this entire thesis sits on the foundational assumption that justified, rational belief is good. If one would prefer not to assume that, then one can do what one wants- truth no longer matters! The whole thesis could nonetheless be conceived of as an investigation into whether religious beliefs can be justified. Of course, if justification *is* something desirable to which we aspire, then the thesis gains additional value from investigating a meaningful subject. Either way, the assumption of rationality's value is nearly so basic as to go unspoken but causes no problems for the argument I have proposed.[474]

Altogether, various assumptions are required for the smooth functioning of my evolutionary agnosticism. As I have throughout these past two chapters, I attempted in this sub-section to de-dramatise each one of the assumptions, by demonstrating its broad acceptability and lack of controversy. The major assumptions that I ascertained in this way were that there does not exist a supernatural being who influences the evolutionary process unduly, that God's existence cannot be assumed to the same degree of certainty with which we assume the reliability of our empirical faculties, and that the faculties we require for scientific endeavour are themselves reliable. There are doubtless other assumptions implicit within my argument, but I trust that those are still less dramatic and therefore unworthy of further discussion. Having established that each of these assumptions is on safe ground, my argument itself stands strong in the face of potential attacks on its very foundations, giving it a solid base from which to build.

Crossing the Milvian Bridge, again

The principal piece of construction undertaken in this thesis has been in my development of the Milvian Bridge, which I have altered, fortified and defended repeatedly. Originally

[472] Richard Popkin is a useful example of a contemporary sceptical philosopher, as well as co-compiling several useful historical examples of sceptics in the anthology in which his essay is to be found: Richard Popkin, "Popkin" in *Skepticism: An Anthology*, ed. Richard Popkin and José Neto (2007).
[473] Bonjour, "Can Empirical Knowledge Have a Foundation?" *American Philosophical Quarterly* (1978). pp.12-13.
[474] Considering whether truth is good raises questions about virtue epistemology, and even more fundamental questions about knowledge's value. I discussed these matters in the introduction, but despite holding potential significance for philosophical methods and being interesting, they need not detain us here.

postulated by John Wilkins and Paul Griffiths, I hope to have advanced the principle to serve a novel purpose, and covered its major vulnerabilities. Yet still there are conceivable attempts to undermine it, which, given its central role in my overall argument, would be a shrewd method of assailing the evolutionary agnosticism that I have proposed. In this sub-section, I will reiterate my defence of the epistemic test, while highlighting why the usage I make of it in my argument is valid.

The most important purpose the Milvian Bridge principle serves is in designating a non-arbitrary method to discriminate between beliefs whose rationality is not altered by natural selection pressures, from beliefs that are. This is a vital role to play, once one accepts the epistemic impact that humanity's evolutionary past has. The primary objections to it came earlier from Christos Kyriacou, who argued that the principle was self-referentially incoherent, and Katia Vavova, who asserted that the principle was either far too destructive or functionally useless.[475] I defused both possible criticisms by demonstrating that a careful understanding of the foundations and applications of the Milvian Bridge epistemic test makes it valid. At the close of chapter 5, I had kept at bay those who wished to destabilise the Milvian Bridge, despite my strategy of debunking the debunkers who sought to use it against religious beliefs.

In the light of my argument, which rests to a large extent upon the Milvian Bridge principle as a valid, sufficient, and useful means of discerning reliability, fresh attacks do emerge. The first point, that the principle is valid, I have defended adequately earlier. Its sufficiency and utility remain to be seen though. The former claim is that the Milvian Bridge principle, as a way of discerning unreliable faculties, is enough. No other epistemic test is *required*, in the sense that a faculty that fails the Milvian Bridge test could not be redeemed by another test. This is not to say that the test is necessary, for, as already mentioned, it should not always be used to undermine belief-forming faculties.[476] But if one chooses to use it, one need not worry that the Milvian Bridge principle is missing something with regard to its scope. That is, if a faculty fails to cross the Milvian Bridge, the beliefs it generates cannot be known to be reliable, regardless of other considerations. Importantly, this does not apply vice versa- it is only when a faculty fails the test that the ruling is sufficient- this is to be expected, because faculties that do cross the bridge could fail another epistemic test; one should never expect a single epistemic test to suffice in showing a faculty's reliability, because such a thing should always be subject to revision. As was established in chapters 3 and 7, both internalist and externalist conceptions of justification care about the source of a belief. The reliability enters into proceedings at a later, internal stage for internalism, so the Milvian Bridge is sufficient irrespective of one's justification model. Its sufficiency depends on a view of human faculties as formed and affected by the process of natural selection. If one accepts that, then the Milvian Bridge principle can indeed be declared a sufficient method for testing the justification of beliefs.

[475] Kyriacou, "Evolutionary Debunking". (2017). p.2; Vavova, "Debunking Evolutionary Debunking." (2014).pp.25-7
[476] Other epistemic tests may be more appropriately applied in other scenarios, for example, considering one's mental acuity or sobriety.

The Milvian Bridge principle's utility is in part based upon its sufficiency- why would an epistemic test that is valid and suffices to inform us about the unreliability of our beliefs not be useful? Yet this can be reinforced- it is a *useful* epistemic test because not only is it valid and sufficient, but also, we care about our beliefs being justified and might have concerns in the light of our evolutionary history. Justification matters because of the above operating assumptions of the thesis that we ought to aim for justified beliefs. As it has already been established that humans have evolved, and that religion itself arose for naturalistic reasons, the Milvian Bridge principle is useful. It provides a non-question-begging, non-arbitrary method by which to assess evolved faculties. Any anxiety arising about the rationality of religious beliefs, in the face of EDAs, calls for some epistemic test to establish whether the way people form religious beliefs is reliable. Even if one has no initial seed of doubt, I hope that a rational religious believer is alive to possible criticisms of his or her position, so that he or she can refute them. Therefore, the Milvian Bridge principle is useful in part because of its previously established validity and sufficiency, but also as it answers questions significant to religious beliefs' possible rationality.

John Wilkins and Paul Griffiths composed the Milvian Bridge principle originally to defend the reliability of commonsense and empirical beliefs from evolutionary scepticism. Yet by acknowledging its wider strength, with alterations and defences, it can form the backbone of my evolutionary agnosticism. The most important points to reiterate are that the Milvian Bridge is valid- allegations of self-defeat falter; that it is sufficient, insofar as the faculties that fail it cannot be redeemed by other information; and that it is useful, which it certainly is for one who wishes to investigate the epistemological consequences of evolution. Although my argument is undeniably reliant upon the Milvian Bridge, this trust is not misplaced, and there is no weak link in this element of evolved epistemology.

Alternative Assaults

The main fault-lines of my argument exposed so far have been at its foundations. That is a potentially fruitful place for assaults because the structure I propounded is logically valid, and the combinations of premises and established conclusions flow naturally towards the ultimate conclusion about the epistemic status of religious beliefs. Thus, the easiest way to attack my argument is to criticise it before it can even begin, like the military strategy of bombing planes at airfields before they can take off. Still, the preceding sections have shown that I can weather the initial blitz- my preliminary assumptions are redoubtable and uncontroversial and the way I utilise the term 'religious faculties' and the Milvian Bridge principle is entirely legitimate. Therefore, it becomes necessary for a continued critic to change tactics. The alternative assaults I will address in this section will accept the initial definitions and assumptions of the argument, and the all-important Milvian Bridge principle. Instead, they pinpoint specific premises, aiming to defeat them and in so doing disable the argument as a whole.

Third-Factor Responses

One substantial, disputable premise in my argument claims that religious faculties do not pass the Milvian Bridge test. In practice, I am claiming it is not the case that holding true religious beliefs increases fitness, by virtue of their truth. In opposition, one could utilise, first of all, the 'Genghis Khan' method of countering it- true religious beliefs (and the false ones of his enemies) were the reason for his 'evolutionarily fitness'. Yet there are several reasons why we might not want to agree with Genghis here, not least that his vanquished foes included members of almost every modern faith, and the Mongolian Empire was itself eventually defeated, leaving us with rather a conundrum in deciding which faith *is* most fitness-enhancing. More seriously, the gamut of naturalistic explanations, which make no reference to truth in explaining why religion evolved, gives authority to the claim that religious beliefs did not arise due to their veracity.

There are more sophisticated ways of arguing that religious beliefs *do* increase fitness more if true, and pass the Milvian Bridge test. One who has presented such ideas is Hans van Eyghen.[477] His work utilises the already-discussed ideas of Alston, alongside philosopher David Enoch's, in an effort to show that religious faculties can cross the Milvian Bridge. The assault has two prongs. The first asserts spiritual fulfillment is fitness-enhancing. This is where van Eyghen utilises Alston's work, arguing that having accurate religious beliefs is more fitness-enhancing than having inaccurate ones, because within the context of the doxastic practices it is beneficial to produce accurate beliefs. Alston and van Eyghen argue that one gains spiritual fulfillment, by God's grace, from holding the correct religious views.[478] There is solid empirical evidence that people who report high levels of spiritual fulfillment do reap health benefits that could plausibly be construed as fitness advantages.[479] Van Eyghen thus posits that in order for humans to flourish properly, including evolutionarily, being spiritually fulfilled helps. So, the first prong proposes that religious faculties cross the Milvian Bridge, as only when they produce true beliefs permitting accurate spiritual fulfilment do they engender increased selective fitness. The second prong of van Eyghen's argument has a similar goal, but achieves it differently.

Enter Enoch. His work aims at a defence of what he terms "robust realism", as he seeks to defend moral realism from its various detractors.[480] It applies well, with few modifications, to the debate over religious realism too. Van Eyghen uses Enoch's 'third-factor response' in the second of his attempts to cross the Milvian Bridge. Third-factor responses are a useful retort to Faculties EDAs like Wilkins and Griffiths', that emerged in response to

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[477] Van Eyghen and I have written a joint paper debating this issue specifically in more depth. For further information, see: van Eyghen and Bennett, "Did Natural Selection Select for True Religious Beliefs?" *Religious Studies* (2020).

[478] van Eyghen and Bennett, "Did Natural Selection…?" (2020). pp.8-10.

[479] As just two influential examples from growing scientific literature into beneficial psychological effects of religion or 'spirituality' upon mental and even physical health, see: Kevin Seybold and Peter Hill, "The Role of Religion and Spirituality in Mental and Physical Health" *Current Directions in Psychological Science* (2001); Gene Ano and Erin Vasconcelles, "Religious Coping and Psychological Adjustment to Stress" (2005).

[480] David Enoch, *Taking Morality Seriously: A Defense of Robust Realism* (2011). p.4

Sharon Street's scepticism. A third-factor response is a way to explain why the beliefs with which our evolved faculties have furnished us happen also to be true. For example, a third-factor response describing why empirical faculties must be approximately accurate to increase fitness has been used to defend the justification of empirical beliefs. The 'third factor' that Enoch proposes to link truth and evolutionary success of moral beliefs is the notion that survival is good. He is deliberately cautious about this claim, stating that it is only necessary for survival to be somewhat good.[481] If that is the case, then the moral beliefs that happen to bring about survival will also be correct, in a realist sense. This third factor explains the coincidence of the two other factors' relationship. Enoch argues that evolutionary arguments only introduce doubt, and so do not reduce realism's plausibility significantly, as the introduction of third-factor responses can allay that doubt.

Van Eyghen conjures a third-factor for religious faculties by arguing that survival is good, because it seems nonsensical to argue otherwise, particularly in the context of natural selection, a constant fight for survival. Given that, the fact that certain religious beliefs lead to increased likelihood of survival (such as the notion of a good God causing greater group cohesion) means they are likely to be true. Van Eyghen makes plain that we can only derive "coarse-grained", broad brush beliefs about God's existence and goodness from such an argument, not "fine-grained" beliefs concerning specific points of doctrine.[482] Nonetheless, this third-factor response suffices to allow some religious faculties to cross the Milvian Bridge, because it is evidence against my claim that holding true religious beliefs provides no more evolutionary fitness than holding false ones. The two prongs of the argument can operate independently, but are most effective when brought together to carry religious faculties over the Milvian Bridge. Van Eyghen hopes to do that by showing that if survival is good, and if true religious beliefs bring spiritual fulfillment, then true religious beliefs, *by virtue of their truth*, would be selected over false ones. If van Eyghen's assault succeeds, he will indeed destroy my argument, as evidence of religious faculties crossing the Milvian Bridge robs me of the ability to deny theological justification.

I believe each prong of Van Eyghen's attack fails, and the overall assault falters, due to improperly made assumptions. The notion that 'spiritual fulfillment' can be used as a valid guide to metaphysical truth is highly suspect. I can accept that for a great many people, their flourishing entails first finding 'spiritual fulfillment', insofar as they must have settled religious beliefs and a community within which to practise them. But I strongly dispute the notion that having true religious beliefs enables this any more than having false ones does. A variety of contradictory religious inclinations seem to induce the same 'fulfillment' effects- religious diversity again comes into play as a confounding factor. Moreover, there is no meaningful way of ascertaining whether it is *true* religious belief, rather than religious belief generally, which drives the aforesaid human flourishing and improved fitness. To ascertain such a thing would require us to know which religious beliefs are true, before then examining whether the holders of the true beliefs flourished more than the holders of false beliefs. This of course would necessitate already being

[481] Ibid. pp.168-76.

[482] van Eyghen and Bennett, "Did Natural Selection…?" (2020). pp.15-7.

aware of correct and incorrect religious beliefs, which rather nullifies the entire process. Problematically for van Eyghen, one can only state accurately that true religious beliefs increase selective fitness by virtue of their truth, if one somehow assumes which religious beliefs are true in the first place.

The theme of assumptions is one that rears its head when considering the second prong too. Enoch's argument is a neat one, which understands the challenge posed. Yet it makes a crucial assumption that survival is good. Van Eyghen admits that this claim cannot be evidenced without begging the question, which means we are expected to believe, as a brute fact, that survival is a moral or religious goal. This might seem initially reasonable, as it is hard to frame survival as *un*desirable. Survival is definitive of evolutionary benefit, but many things are evolutionarily beneficial and yet would be described as wrong from moral or religious perspectives.[483] Nonetheless, the question that my argument asks moral and religious realism is whether religious or moral beliefs can be justified. It is not an acceptable answer to take as given a moral or religious truth and then show from there that we can justify moral or religious beliefs as being accurate. To do so is a textbook case of begging the question, of which van Eyghen is guilty, in trying to assume an element of the answer before he has proven it. Without that assumption the entire case collapses, as not even coarse-grained religious beliefs cross the Milvian Bridge (though it is questionable whether coarse-grained religious beliefs were sufficient in any case).[484] As nether prong of van Eyghen's attack succeeds, his overall route for religious faculties to traverse the Milvian Bridge collapses.

Scope Problems

A critique that all proponents of sceptical arguments must face concerns scope. The objection is commonly presented against EDAs of various stripes, with Vavova and Konigs providing perhaps the most eloquent articulations of it (as discussed in chapter 5). The critique stems from the notions that sceptical arguments such as mine would have absurd effects if applied across a spectrum of beliefs, and that sceptical arguments are ultimately, inevitably self-defeating as they cannot but include their own foundations in the beliefs about which they are sceptical. One way in which I attempted to refute objections of this ilk was by briefly showing how evolutionary epistemology could apply to a range of domains. That ought to demonstrate I am not cowed by the potential breadth of my argument. In none of those applications did it produce an absurd conclusion; it was consistently sceptical whenever faced with supposed non-physical truths. As for the matter of whether my argument is self-defeating, this has been thoroughly treated as a by-product of expounding the Milvian Bridge. It remains for me to restate one point by way of redemption. One ought not to be concerned that the pivotal scientific beliefs needed to form the epistemic test I set cannot pass that test without assumptions. The faculties

[483] For example, consider Genghis Khan again. Many of his actions would surely be universally condemned, despite the evolutionary benefit they brought for him.
[484] I. e. Coarse-grained beliefs that God is good do not begin to reach the complexities of an established religion. van Eyghen and Bennett, "Did Natural Selection…?" (2020). pp.18-22.

presenting us with the theory of evolution do cross the Milvian Bridge, as long as we can have initial trust in our empirical faculties to prove they do so. Although my argument indubitably wields great force against a breadth of beliefs, it is inaccurate to undermine it by alleging that its conclusions are either absurd or self-defeating.

Related to such a critique are two further objections that one might raise. They are related, alleging in the first instance that my principle is ad hoc, and in the second instance that it is in bad faith, specifically targetted against religious beliefs.[485] Once more in my defence I point out that in the preceding chapter I considered my argument's effects on non-religious beliefs. This should go some way to countering both points. I challenge the accusation that my argument is ad hoc by referring again to the sufficiency and utility of the Milvian Bridge principle. It is necessary for us to adjudicate methodically between different classes of beliefs' reliabilities in the light of the theory of evolution. The Milvian Bridge principle provides a useful epistemic means of doing that, so to term it ad hoc is to belittle it unduly. As for accusations of bad faith, this thesis' investigation intended to harvest the fertile field of EDAs, questioning whether they succeed. I have focussed throughout on religious beliefs first and foremost, but not exclusively, and in many cases religious beliefs withstand accusations levelled against them by EDAs. It happens that my argument, springing forth from this evolutionary examination, does make religious beliefs unjustifiable, but such a recognition comes from level-headed assessment of natural selection's insights into epistemology, rather than an intention to dismiss religion outright.

Of course, objections about the scope, motivation and impact of my argument are not, alone, reasons to dispute it. Although they may highlight contradictions or arbitrariness, such objections uncover no blatant fault with evolutionary epistemology. Hence, such difficulties need not be belaboured, because even if I had produced an ad hoc, highly specific and bad faith argument against religious beliefs, one would nonetheless have to quash that argument on its own merits. Just as Aetiological arguments fail for unduly focussing on the source of beliefs, so too can certain attacks be dismissed for worrying about the source, rather than the structure, of a view. In any case though, I dispute these counters on their own terms, as my argument is not ad hoc, too ambitious or in bad faith.

A final objection surrounds the potential for evading the effects of evolved epistemology altogether. For example, some defenders of moral realism have argued for a naturalistic basis of metaphysical beliefs.[486] In the previous chapter, I also considered how that line of argument *could* be used to defend aesthetic beliefs. The principle behind this counter is that it might be possible for justification of metaphysical beliefs to cross the Milvian Bridge

[485] As argued by, for example: Myron A. Penner, "Cognitive Science of Religion, Atheism, and Theism," *Faith and Philosophy* (2018). pp.21-4.

[486] There are many who propose arguments of this kind, including: FitzPatrick, "Debunking Evolutionary Debunking" (2015); Graham Oddie, *Value, Reality, and Desire* (2005). p.181; Victor Kumar and Joshua May, "How to Debunk Moral Beliefs," in *Methodology & Moral Philosophy*, ed. Jussi Suikkanen and Antti Kauppinen (2019). pp.17-20; Sandy Boucher, "Evolutionary Debunking Arguments, Commonsense and Scepticism," *Synthese* (2020). pp.18, 20-21; Philip Kitcher, "Prospects for a Naturalistic Ethics," in *Philosophy: Foundations and Applications*, ed. Ansgar Beckermann, Holm Tetens, and Sven Walter (2008).

in a similar way to justification of scientific beliefs, if those beliefs supervene on natural facts. If indeed metaphysical facts can be known through the faculties we use to know the natural world, then true beliefs have a causal influence on evolutionary fitness and my argument is robbed of its power. This attack works as long as one maintains a certain view of the queried beliefs. My argument does not target beliefs that can be known through faculties that generate physical (rather than metaphysical) beliefs, but it was never meant to do so. Furthermore, when one applies this line of attack to religious faculties, it mirrors already blocked lines. Either religious beliefs would have to be justifiable with common sense faculties alone, a possibility I have already dismissed, or there must be a causal influence that makes true religious beliefs evolutionarily beneficial- another already-failed response. Hence, the potential for metaphysical facts supervening on natural facts does not threaten my argument's viability, in the sphere of religious beliefs at least.

Throughout the preceding sub-sections of this chapter, I have mounted a stalwart defence of each part of my argument. Its foundations were strengthened, through ascertaining its assumptions. When my argument was assailed for its usage of the Milvian Bridge principle, or religious faculties, I elucidated how it could retaliate, ensuring the epistemic test was strengthened, and that my targetting of religious faculties was proportionate and justified. I found firm ripostes to the variety of alternative assaults that were raised against my position. I am thus confident in stating that the argument for evolutionary agnosticism, as explicated in the preceding chapter, is a convincing one. Its conclusions must be taken seriously by all those investigating the epistemic status of religious beliefs in the light of the theory of evolution. There may remain lingering difficulties with the way I propound an evolved epistemology, or potential counters that I have not discussed, but it appears, for the moment, as though appreciating the justification of beliefs in the new light provided by evolutionary thinking has a grand impact upon religion.

Conclusion

"What a piece of work is a man! How noble in reason, how infinite in faculty! In form and moving how express and admirable! In action how like an angel, in apprehension how like a god! The beauty of the world. The paragon of animals. And yet, to me, what is this quintessence of dust? Man delights not me. No, nor woman neither, though by your smiling you seem to say so."

William Shakespeare, *Hamlet*[487]

I place Hamlet's lamenting soliloquy at the beginning of this conclusion to my thesis because it embodies, in its sardonic exultation of the human condition, the twin forces of scepticism and optimism that may result from evolved epistemology. There are certainly those who maintain that man is "noble in reason… infinite in faculty". Yet I confess that on the subject of god-like apprehension "man delights not me." I acknowledge the temptation, indeed the desire, to maintain an optimistic view of humanity's capacities. Nevertheless, one must recognise that the influence of natural selection on the formation of each person's belief-forming faculties sets boundaries. We have cognitive constraints, the limits of which we may stretch, but not surpass, for there is no evolutionary reason why humans would be equipped with the faculties to justify religious beliefs accurately. In this chapter I will restate my most significant contributions and arguments. Then, broadening my perspective just as in the introduction, I shall contemplate where my thesis fits in to global dialogue between science and religion. This conclusion also posits fruitful areas for future research, and reiterates my aspiration of altering mainstream applications of evolutionary epistemology, in order to demonstrate that the thesis has not been a singular outgrowth, but lays foundations for future research.

My thesis' most distinctive contribution is in its evolutionary assessment of religious beliefs, and the ensuing agnosticism that it advocates. The main question that has been engaged concerns whether evolved humans can trust their faculties to produce religious beliefs reliably. To answer, I presented a case for humility on metaphysical matters, accepting that humans cannot justify certain kinds of beliefs. This position is original, as it treads a fine line between those who use evolution to debunk religion and those who deny evolution's epistemic impact. Agnosticism is itself, however, a venerable position, and my arguments gain extra surety from the way in which they echo past ideas about human epistemological limitations, advancing such discourse with modern, scientific evidence. I have blended progressing pre-existing debates with offering my own unique appraisal of evolved epistemology, increasing the overall investigation's influence.

This thesis has repeatedly advocated for the undeniable impact of evolutionary history on human rationality. To demonstrate that, I shall briefly restate the main positions that I have proposed, emphasising the ways in which I have improved current discourse in several areas, and the distinctive contributions I offered. The first chapter set the scene,

[487] William Shakespeare, *Hamlet* (1877). 2:II. p.159

and secured vital definitions for terms that have been used throughout the piece. The second and third chapters focussed on the evolution of religion and the justification of religious beliefs respectively. In evaluating growing evidence from science about how religious beliefs form, and epistemological notions of belief justification, the stage was set for EDAs. In each chapter of that section, I made important observations about how scientific and epistemological views of religious belief can be ameliorated, propounding syntheses that have until now been under-appreciated. Regardless of whether my particular instantiation of an evolutionary epistemology functions, appreciating context properly conveys that one cannot simply ignore, as has sometimes been the case, evolutionary arguments when considering one's religious beliefs.

The middle section of this thesis, chapters 4-6, approached EDAs from several angles. Their failure on their own terms was made abundantly conspicuous. They do not 'debunk' religion, nor anything close. Debunking arguments do, however, prompt reflection upon the ways in which evolutionary origins *might* affect belief formation. Aetiological EDAs were the least successful, but using them I highlighted the need to connect a belief's origin with its reliability meaningfully. Faculties EDAs brought several revelations to this thesis, not least the introduction of the Milvian Bridge epistemic test, which I adjusted and fortified to heighten its status in evolutionary epistemology. Furthermore, despite the initial validity of the connections drawn by debunkers between religious belief and the evolution of religion, I exposed the insurmountable flaws of Faculties debunking attacks. In comprehending successes and failures of EDAs, I laid the final elements of groundwork in the second section, while providing novel delineations, and fresh insights into the failures, of an oft-underestimated line of reasoning against religious beliefs.

Each chapter had significance in its own right, advancing several contemporary discussions, but they reached their fulfillment in the final section of this thesis, where the piece attained its innovative zenith. In chapter 7 I postulated my own argument for evolutionary agnosticism, which is based in evolved epistemology and specifically investigates its effects on religious beliefs. I exhibited how, by and large, the individual pieces of that argument had already been substantiated at earlier points throughout the thesis, and expanded further upon the way in which my argument should affect religious beliefs, the kinds of beliefs affected, and other possible ramifications. Chapter 8 was spent defending my argument from potential detractors. This third section of the piece was the most original, and thus has the greatest potential impact if successful. The way in which I consolidated the argument, and the manifold defences that I have offered, should stand it in firm stead in the face of opposition. Overall, those climactic chapters sought to expound and defend my creative contentions, evaluating how the rationality of religious beliefs is affected by a refreshed approach to human cognition.

My argument has the radical impact of making the justification of religious beliefs impossible. The faculties used to form such beliefs are not known to be unreliable, but cannot have their reliability secured. Hence, one ought to remain agnostic on the rationality of religious beliefs. It is not merely evolutio*nary* epistemology, but an *evolved*

epistemology. That is, arguments set forth concerning beliefs and justification have developed and been strengthened from previous iterations. As the epistemological framework has itself evolved, while also being based on evolutionary thinking, I promulgated the undeniable importance of the evolved nature of human faculties on the limits of belief. An epistemic test is required for this, alongside sophisticated arguments that take into account how beliefs are formed and how they are justified. Through its sequential chapters, this thesis brought all these elements into harmony, inventively establishing the conclusions that follow from evolutionary consideration of religious belief. Religious beliefs can certainly still be held, and religion retains much relevance, but any reliance it may have on rationality is undermined.

Through reiterating the major facets of my thesis, its significance becomes evident. I have begun to resolve the common dilemma, raised by Hamlet, of whether man is indeed like a god in apprehension, or is instead marked by the dust from whence he came. From a narrow perspective, such a conclusion most significantly alters the epistemology of religion, where at least the possibility of justification of religious beliefs is typically taken for granted. As examined in chapters 7 and 8, there is a broad swathe of beliefs that philosophers and theologians hold, which cannot now be justified. Such beliefs are not debunked, but on careful consideration can no longer be held rationally. 'Unjustifiable' is different to 'unjustified', but neither presents a positive prospect for religious beliefs. Appreciating that evolution sets cognitive constraints upon humankind's belief-forming faculties, as my investigation has uncovered, means that there should be an extensive reconsideration of religious epistemology. At the very least, a suitable response must be found to the allegation that religious beliefs as considered here cannot be justified. The epistemology of religion being altered in this way, however, is not the sole effect of evolutionary agnosticism as instantiated in my argument; my proposal possesses consequences beyond that specific discipline, most plainly within natural theology.

The Wider Angle, Again

"'For My thoughts are not your thoughts, nor are your ways My ways,' says the Lord. 'For as the heavens are higher than the earth, so are My ways higher than your ways, and My thoughts than your thoughts.'"

Isaiah[488]

To perceive the full depth and breadth of the insights I have promulgated throughout my thesis, I will survey how I have altered the broader academic landscape, as charted in the introduction. In it, I compared the realm of theology to a landscape, with academic disciplines acting as viewing lenses. Depending on the way one wished to interpret a theory or argument, one could focus on different areas of the theological landscape and perceive various effects. There, I began with the wider view of theology to comprehend the full context, before zooming in to specific aspects of note. In closing, having explored

[488] Isaiah 55: 8-9.

the particular characteristics of this thesis, I will zoom out once more to plot the wider theological landscape that my argument alters. Again, I utilise a poignant quote to begin this sub-section. It demonstrates the way in which the argument that I propound, though it may have sweeping ramifications across theology, is far from wholly novel. The limitations of humanity are written into the founding texts of many religions, and an evolutionary epistemology constitutes a new route to those self-same limitations.

The most pertinent placement for evolutionary epistemology is, as mentioned, within epistemology of religion. Yet natural theology is another major topic, mentioned throughout this thesis, where wider effects take hold. In its attempts to use 'the book of nature' to learn about God's actions, I believe natural theology is stymied by my evolved epistemology. The *arguments* of that field are not specifically affected, and can maintain internal validity and opposition to other natural theological positions. Nevertheless, on a foundational level their aspirations have been assailed. Natural theological arguments find empirical evidence for metaphysical statements, and it is that possibility that evolutionary agnosticism prevents. Therefore, evolutionary epistemology coerces one to concur with Wittgenstein's assertion that "Justification by experience comes to an end. If it did not, it would not be justification."[489], because natural theology's empirical reasoning is blocked. Hence, while my epistemological contributions initially affect justification of religious beliefs, there is blatantly scope for those effects to spread and hamper the primary goals of natural theology, by removing foundational premises on the justifiability of belief.

The impact of natural theology on dialogue between science and religion is immense; if evolutionary agnosticism establishes itself in religious epistemology and spreads to affect natural theology, science-religion relations will soon feel the transformation. Questions surrounding the evolution of religion interest both scientists and theologians, but it is when considering the implications of the evolved nature of religious belief, and humanity itself, that momentous ramifications of my thesis emerge. Progressing from scientific theory to a conclusion of evolutionary epistemology, the central themes of this thesis indubitably hold relevance for dialogue between science and religion. That relevance goes beyond mere dialogue though, because it would appear to lead to conflict with religious belief, at least insofar as the latter aims to be rationally justified.

Conflict need not be irredeemable, but it is unpopular in this area of the academic, theological environment. Hence, I have advanced that field by embellishing the potential for science and religion to collide. As two hugely influential disciplines of human thought, it is not desirable for either science or religion for there to be friction. Yet that does not mean one can blind oneself to potential discord. An evolutionary epistemology, by working from scientific principles to limiting humanity's capacity to justify religious beliefs, is likely to deteriorate the relationship between science and religion. Thus, the cosy consensus that science and religion are fine bedfellows is challenged. There may be

[489] Wittgenstein, *Philosophical Investigations*. (2009). §485

solutions to the impediments that this thesis raises, but they must be found, or else interactions between science and religion will take an antagonistic turn.

At first one can consider the events of this thesis by surveying a small feature of the theological landscape, religious epistemology. Yet as one's lens widens and gains a full appreciation of what has occurred, there is an unmistakeable appearance that, from its beginnings in a niche field of philosophy of religion, a conclusion of the unjustifiability of religious beliefs spreads rapidly. Other segments of the theological environment, such as natural theological arguments, theological anthropology, and religion's relationship with science are evidently altered too. Ultimately, much of the panorama, especially those elements most concerned with rationality, is affected by the characteristic conclusions that I have drawn through the passage of this thesis.

Future Potential

"Man may be excused for feeling some pride at having risen, though not through his own exertions, to the very summit of the organic scale; and the fact of his having thus risen… may give him hopes for a still higher destiny in the distant future. But we are not here concerned with hopes or fears, only with the truth as far as our reason allows us to discover it. …[M]an with all his noble qualities, with sympathy which feels for the most debased, with benevolence…, with his god-like intellect…—with all these exalted powers—Man still bears in his bodily frame the indelible stamp of his lowly origin."

Charles Darwin[490]

"Faith is rightly made the most difficult thing of all, but with a qualitative dialectic, i.e. equally difficult for all".

Søren Kierkegaard[491]

Having summarised the principal conclusions of my thesis, and their considerable effects both on a narrow area and in a wider context, I wish also to survey where there is room for further development on the work undergone here. If this thesis could be lengthened, there are certainly several other questions that I would wish to answer, which I will describe in this sub-section, to demonstrate where potential for future discussions lingers. There are possible ramifications of the arguments I have proposed in this thesis that extend beyond the confines of what could be adequately surveyed using perspectives available here. I have made reference to some of these areas already, but there are many fruitful branches that this enquiry has been unable to pluck. My research raises a mixture of considerations: of religion's evolution, of Evolutionary Debunking Arguments, and of my own evolutionary agnosticism. I lack the space in this thesis to address each issue to the deserved extent, but believe much is left to be said in every case.

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[490] Darwin, *The Descent of Man*. (1872). p.387.

[491] Søren Kierkegaard, *Concluding Unscientific Postscript to the Philosophical Crumbs*, translated by Alastair Hannay (2009). p.527

The most apparent extension to my thesis would be to apply it to more areas of human thought than religion. I have focussed on religion for the moment because I believe it lends itself to unique discussion, as well as being among the most distinctively influential aspects of human culture. But, as mentioned, almost any area within which beliefs are formed that make a claim to objective truth ought to face my evolved epistemology. The domains of science, metaethics, history, and the arts, to name just a few, might each find that the justification of their beliefs is not so simple. Equally, they might be able to make my argument irrelevant within their own spheres. I believe that in these fields the potential applicability of an evolved epistemology ought to be put more thoroughly to the test, so there is evidently room for future exploration. I regret that I lacked the space to delve deeper into such possibilities here.

Where I have surveyed the evolution of religion, much work remains. The Cognitive Science of Religion is still a burgeoning discipline, with several disparate strands of thought in the way of methodology and conclusion. If one wishes to use the work there to counter my argument, then it will be necessary to find theories that contain explanatory gaps, for which a supernatural being or cause might be required.[492] From my own perspective, I believe that moving towards unifying the different models of religion's genesis, as I attempted in chapter 2, presents exciting opportunities. I agree with the prevailing opinion in the field that a utopian 'theory of everything' does not exist for the Cognitive Science of Religion, because of the incredibly diverse nature of 'religion', and the manifold ways in which to investigate its rise and persistence. Future work can certainly be done though, on trying to perfect individual elements of a descriptive theory, and making sure that the implications are well-understood for other investigations, without falling too deeply into the trap of reductionism.[493] In chapter 2 I presented ideas that, with more space, could form the foundation of an encompassing synthesis.

To consider the evolution of religion one requires a theory of evolution that is initially compatible with religious beliefs. Here again there is great room for discussion. Some contend that even by beginning from basic principles of Darwinian evolution, one is excluding the possibility of religious beliefs being justified. This was not my intention, but there is indubitably intriguing debate to be had on whether there is a methodologically naturalist conception of the theory of evolution that conflicts in no way with mainstream religious beliefs. I firmly believe that, distilled to their most basic principles, religion and the theory of evolution are not in conflict, but once one adds additional layers of complexity, assumptions may enter, with obstacles accompanying them. Productive work can be done in the future specifically addressing the metaphysical preconditions for establishing religious beliefs and scientific beliefs, noting where they concord and conflict, as Mahner, Visala, and others have already attempted to do to varying extents. The effects

[492] For example, if it were clear that there was no good explanation for a neurological module that produces religious beliefs, an explanation akin to Plantinga's *sensus divinitatis* may be necessary.
[493] Two pieces of encouraging work seeking to conglomerate CSR theories and appreciate that there may be consequences for religion are: Szocik and van Eyghen, *Revising Cognitive and Evolutionary Science of Religion: Religion as an Adaptation* (2021); Jong, "Explaining Religion (Away?)" *Sophia* (2013). pp.8-9.

on arguments, such as my own, that bring religion and evolution into joint focus could be serious, though I trust not debilitating.

Another area that I lacked the space to explore fully in this thesis was the possibility for natural theology under the conditions of my evolved epistemology. From an argumentative perspective, I believe I have thoroughly vanquished any hope of natural theology striking a blow against my position. Nonetheless, it would be fascinating to contemplate what beliefs someone could form, given only faculties that pass the test I set. Can a cosmological argument establish a first cause, using only faculties whose truth-tracking capabilities are fitness-enhancing? Is there any hope for an ontological argument to reach beyond mere wordplay? Given greater time, this thesis would assuredly have aimed to answer these questions in a fulsome manner. One of the primary virtues of my agnosticism is that it precludes the need for, and capabilities of, natural theology, but considering exactly how extensively that embargo holds sway would be invaluable.

Working further within evolved limits, there may yet be some possibility of constructing a religion restricted by the bounds of the argument that I proposed. This would be a quasi-Kantian move, accepting human limitations but manoeuvring within them.[494] Such a religious worldview would resemble very little that we would usually term 'religious', as it would necessarily be stymied from metaphysical doctrine. Nonetheless, my argument does not disallow claims about the natural world, so perhaps a wholly immanent God, akin to that of process theology, would be possible.[495] Whether success is ultimately feasible or not, there is a captivating discussion to be had, examining whether one can construct a theological worldview that obeys the evolutionary limits set by my argument, and what that 'religion' would resemble.

Finally, I have focussed throughout this thesis on theistic, primarily Christian beliefs. It is regrettable (though obligatory due to space limitations) that this is the case, as it somewhat diminishes the extent of my argument. This aspect of future potential relates to the prior point, because certain religions' truth claims may be constructed in such a way as to avoid falling afoul of my argument altogether, working within the boundaries I set quite coincidentally. But the slightly narrower focus in this thesis was deliberate- it was necessary to maintain concentration and specificity of insights. I also continue to hold that my argument *does* apply to religious beliefs of different backgrounds. As long as a religion promotes the holding of rational metaphysical beliefs, its claims will be vulnerable to dispute. Still, it would have been both advantageous and intriguing if I had space to stretch the discussion to include non-Christian and non-theistic faiths in my analysis. In particular, the extent to which Hinduism and Buddhism, both incredibly popular faiths, make metaphysical truth claims requires investigation. There is certainly plenty of room for discussion on how widely the consequences of my evolutionary agnosticism apply across the entire spectrum of world religions.

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[494] Kant, *Religion within the Bounds*. (2009).

[495] Alfred North Whitehead, *Process and Reality: An Essay in Cosmology* (1929). pp.248-9, 245-55, 526-30.

This sub-section illustrated that my thesis, while endeavouring to be as comprehensive as possible, could not satisfactorily address each issue raised, in part because they were not properly within the scope of consideration, though mainly because of the expansive consequences of my argument. It briefly discussed where, for each issue, there remains potential for future input. While I have primarily framed the thesis as a philosophical, epistemological treatise on religious beliefs, the shockwaves from my argument stretch much beyond that narrow consideration, echoing more widely into how we conceive of relations between the two major domains of science and religion. There remains, as always, much productive work to be done to comprehend fully the way evolution by natural selection influences human nature, across a wide range of possible beliefs. It is unfortunate that this thesis has insufficient room to address these related issues in the detail that they deserve.

To conclude, humanity must have humility in the face of epistemic obstacles. Evolution presents a good reason for one to reconsider how beliefs are justified, in light of limitations set by the process of natural selection that affected our development. As this thesis testifies, for religious beliefs, an evolutionary epistemology is pessimistic on the prospect of justification. Hence, I recommend a humble agnosticism, which admits that one cannot discern whether one has the ability to justify religious beliefs rationally. Such a conclusion on the fate of religious beliefs should greatly affect popular and academic conceptions of the relationship between science and religion, reinvigorating the prospect of conflict between these two great fields of human endeavour. Furthermore, my evolved epistemology has considerable consequences for several other domains of belief, including morality, aesthetics, and science itself. Notwithstanding these potential successes for my argument, I aim at least to have raised an array of intriguing, evolutionary issues, which merit further discussion and entreat provocative inquiries in the reader. The denouement of those deliberations may not be evolutionary agnosticism as I conjecture it, but must account properly for the cognitive constraints natural selection imposes. To ignore one's evolutionary history is to be condemned to epistemic arrogance.

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