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ENRICHING OUR VISION OF REALITY

*Theology and the natural
sciences in dialogue*



Alister McGrath

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Contents

<i>Preface</i>	vii
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Part 1 SETTING THE SCENE

1 Intelligibility and coherence: the Christian vision of reality	3
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Part 2 SCIENCE AND THEOLOGY: THREE PRACTITIONERS

Introduction	25
2 Charles A. Coulson	27
3 Thomas F. Torrance	42
4 John Polkinghorne	59

Part 3 THEOLOGY AND SCIENCE: SOME PARALLEL CONVERSATIONS

Introduction	77
5 Theories and doctrines: ways of seeing reality	79
6 The legitimacy of faith: proof, justification and intelligibility	97
7 Analogies, models and mystery: representing a complex reality	115

Contents

8	Religious and scientific faith: the case of Charles Darwin	132
9	Human identity: scientific and theological perspectives	149
10	Natural theology: the interface of science and theology	164
	Conclusion	183
	<i>Notes</i>	185
	<i>For further reading</i>	213

Preface

This is a book I never thought I would write. It's a traveller's tale from a strange land I never expected to visit, but came to love so much when I discovered it that I now live there permanently. Like so many in the 1960s, I grew up thinking that science was at war with religious faith. My youthful love for science seemed to rule out any interest in religious belief, which I regarded as irrational nonsense best left to intellectual low-achievers. I confidently expected that science would answer all my questions. And if it couldn't answer them, they weren't valid questions in the first place. Atheism seemed the only viable intellectual option for a thinking scientist such as myself.

Then something happened to me in my first year at Oxford University in late 1971, as I began the serious study of science. It's not something I fully understand even to this day. To cut a long story short, I realized – much to my surprise and irritation – that Christianity made much more sense of things than atheism. I began to see things in a new way, as if my eyes had been opened. Science and Christian theology could be seen as two different ways of exploring a complex and wonderful reality. Sometimes they might be in tension with each other; more often they could enhance each other's grasp of reality and open up a deeper vision of life. It all depended on how you placed them on a mental map. And as my old atheist map of reality gave way to its Christian counterpart, I found I could position the natural sciences and the Christian faith in a new and more satisfying way. I still think that way after 40 years, despite my constant interrogations and refinements of my basic ideas.

I initially studied chemistry while at Oxford, specializing in the area of molecular quantum theory. For my doctorate, I moved into the biological sciences, working in the research group of Professor Sir George Radda, trying to develop new physical

methods for the investigation of complex biological systems. I then went on to study Christian theology in detail, looking at the historical development of some key Christian ideas, especially during the early modern period, laying the groundwork for bringing the natural sciences and Christian theology into serious conversation and dialogue. I served as Professor of Historical Theology at Oxford University from 1999 to 2008, before taking up a chair of theology at King's College London from 2008 to 2014. I then returned to Oxford University, where I now serve as the Andreas Idreos Professor of Science and Religion and as Director of the Ian Ramsey Centre for Science and Religion, which gives me a marvellous public platform from which to explore the interaction of science and theology.

This isn't really an academic book aimed at professionals already immersed in the fields of science and theology and thus familiar with the literature and issues. My anticipated readership is much wider, embracing scientists with an interest in theology and theologians aware of the importance of the natural sciences. I hope to open up some important and interesting issues, without going into the technical scholarly detail a more academic work would require. I've kept the text as simple and accessible as possible but have provided ample references for those who want to follow through on these ideas.

This book is a traveller's guide to the new world I discovered back in the early 1970s. It aims to help both theologians and scientists to integrate their ideas into a richer whole, allowing them a stereoscopic view of a richly textured and complex world. Both the sciences and theology *on their own* run the risk of offering us a limited and deficient account of our world, lacking any sense of depth. What follows is an invitation to go deeper into what Isaac Newton famously called the 'ocean of truth', enriching our vision of reality through an informed dialogue between Christian theology and the natural sciences.

The chief motivation for writing this book is to encourage others to explore how the natural sciences and Christian theology can speak meaningfully to each other. The best defeater of the New Atheist myth of the warfare of science and faith is not an

isolated intellectual argument but a thinking person who has integrated understanding of the natural sciences and the Christian faith. In our postmodern culture, embodiment trumps argument.

Yet my aim is not simply to encourage the enriching and deepening of a *personal* vision of faith. In what follows, I highlight the importance of changing public perceptions about science and faith. A recent empirical study suggested that American public perceptions of the religion–science relationship were not influenced when they read about a scientist (such as Richard Dawkins) who believes science and religion are in conflict; however, reading about a scientist (such as Francis Collins) who believes both science and religion can influence and guide each other positively shifted people towards a more collaborative view of religion and science.¹ This is clearly a development I would wish to encourage.

Part 1 of the book consists of a chapter setting the scene by reflecting on the general question of the relation of the natural sciences and Christian theology. The natural sciences are outstanding in offering an explanation of how our world works. But what if human beings need something more than a ‘purely rational conception of our existence’ (Albert Einstein)? This chapter explores the importance of the human quest for intelligibility and coherence and how Christian theology offers a big picture of the world that holds these together in a winsome and rationally plausible manner.

Part 2 then considers three figures who have played an important role in stimulating discussion of the relation of science and theology in the recent past and whom I personally have found helpful: the theoretical chemist Charles A. Coulson, the theologian Thomas F. Torrance and the quantum physicist John Polkinghorne. In each case, I will consider some of their core contributions to the conversations between science and theology and reflect on their wider significance. Without doubt there are other excellent representatives of theologically engaged scientists and scientifically informed theologians who might also have been included here. However, I have limited myself to these three individuals on account of their outstanding contribution to the

correlation of theology and science, their accessibility as leading thinkers in their field and the stimulus they have provided to my own reflections on these themes.

Part 3 consists of six parallel conversations between science and theology that lay the groundwork for the kind of enriched vision of reality I hope to enable and encourage. Each of these conversations represents an attempt to get a handle on a greater reality, allowing us to see it in a focused and manageable way. Chapter 5 offers a short preliminary discussion of the parallels and divergences between scientific theories and Christian doctrines. After this, we turn to consider the rational transparency of reality in Chapter 6. Why are we able to make so much sense of the world? How does this fit in with the Christian way of thinking about it? And what reasons can we give for thinking that our scientific beliefs about the world and religious beliefs about God are defensible?

This naturally leads into Chapter 7, which looks at the use of analogies and models in science and theology. Both the natural sciences and Christian theology acknowledge that they attempt to represent a reality that somehow seems to elude being reduced to words, raising important questions about the limits and scope of both disciplines. We'll look at a theological example to help us grasp this point – the classic doctrine of the 'two natures' of Christ – before considering the notion of mystery in science and theology, focusing on the doctrine of the Trinity.

Chapter 8 moves into the territory of the life sciences. Most discussion about the relation of the natural sciences and theology tends to focus on the physical sciences; it is clearly important to extend this to include other scientific disciplines. In this chapter, we consider the role played by faith – in both its general fiduciary sense as well as its more specifically religious one – in Charles Darwin's presentation of his theory of natural selection in his famous *On the Origin of Species* (1859), and reflect on the wider question of how Darwin thought this theory interacted with religious belief.

We then move on in Chapter 9 to consider the complexity of human nature, and raise concerns about some reductionist

Preface

tendencies in recent discussions that offer truncated and purely functional accounts of human identity. This analysis highlights the importance of multiple perspectives on a complex reality and the inadequacy of single perspectives or levels of engagement with human nature and identity.

Chapter 10 explores the fascinating area generally known as ‘natural theology’, usually understood as the conceptual and imaginative interface between God and the natural world. What opportunities does this approach offer for an enrichment of the dialogue between science and faith? And how might this play into broader discussions? Finally, the book concludes by highlighting the need for at least some degree of integration between science and faith – especially on the part of believing scientists – and the opportunities this opens up.

I take great pleasure in acknowledging many conversations and discussions with those involved in exploring the relation of science and religion, which have given greater depth and rigour to my own ideas. As will be clear from what follows, I owe much to Charles A. Coulson, Thomas F. Torrance and John Polkinghorne. Yet others have helped me through conversations and other scholarly means, most notably John Hedley Brooke, Joanna Collicutt, Francis Collins, Peter Harrison, Denis Noble and Rowan Williams. I also owe a more complex debt to three leading representatives of the New Atheism, whom I had the privilege of debating in recent years: Richard Dawkins, Daniel Dennett and the late Christopher Hitchens. It is right to acknowledge their collegiality. They would not agree with my approach but they helped me realize why these questions were so important, and challenged me to develop my thinking further.

Alister McGrath

Part 1

SETTING THE SCENE



1

Intelligibility and coherence: the Christian vision of reality

The topic of this book is the relation of the natural sciences and Christian theology. It is a subject of no small importance, given the high profiles of both science and religion in contemporary cultural debates and discussions, and the growing realization that religion is not disappearing from public life, despite the confident prophecies of the New Atheism. Yet a mere pragmatic recognition of the importance of these issues is not enough. Any discussion of the relation of the natural sciences and Christian theology must be located within a framework of understanding that helps us position them both. We need a big picture of reality that does more than simply create space for science and theology but allows the nature, limits and benefits of their interaction to be grasped.

Theories and big pictures: some initial reflections

There is growing interest across intellectual disciplines in retrieving this notion of a big picture – a rich way of seeing things that aims to frame and hold together the elements of our experience and observation, bringing a sense of stability and coherence to life and thought.¹ The New Testament speaks of the ‘mind of Christ’ (1 Corinthians 2.16; Philippians 2.5), a pattern of communal thinking about life and the world that is disclosed in Jesus Christ as God incarnate.² From the outset, Christian theologians realized the potential of their faith to generate and sustain a greater vision of life. C. S. Lewis famously declared that his Christian faith allowed him to make sense of every other aspect

of his rational and imaginative life – including the natural sciences. This is beautifully expressed in his signature affirmation (now inscribed on his memorial stone in Poets' Corner, Westminster Abbey): 'I believe in Christianity as I believe that the Sun has risen, not only because I see it but because by it, I see everything else.'³

Before we begin to engage the question of theories and big pictures of reality in more detail it will be helpful to reflect briefly on the more general issue of their importance. What use are they? What advantages do they confer? And how can they go wrong? The important point to appreciate here is that it is deeply human to search for a big picture or a larger narrative of life, including our place in the universe. Whether this is right or wrong, good or bad, it is deeply embedded within our nature as human beings. Many of those who deny having any theories or beliefs about life – such as some representatives of the New Atheism⁴ – actually turn out to have implicit theoretical commitments or assumed beliefs, which are simply treated as self-evidently true and hence requiring no justification of any kind. One of the motivations for the anger directed by some New Atheists against their many critics is that the process of criticism has exposed the vulnerability of their core beliefs, which they unwisely treated as facts.

There are two fundamental benefits of a big picture, which we shall explore throughout this book, especially in this chapter. First, it gives us a way of seeing the world that brings it into focus and allows it to be seen more clearly. Second, a good theory shows how things are interconnected, allowing us to place events and observations within a web of meaning. A good big picture thus discloses – but does not *invent* – both the *intelligibility* and *coherence* of reality.

Yet there are potential dangers to such an approach, of which three are of particular importance. The first is that a theory can easily make us blind to certain things, which we fail to see because we believe there is nothing to be seen. The New Atheism is probably the most obvious example of this problem. Its dogmatic insistence that there is no God, and its rhetorical demonization

of those who believe in God as deluded fools or dangerous lunatics, generates a fundamental disinclination within the movement to give serious consideration to the idea that the world might point towards God or that it might make more sense from a theistic viewpoint.

The second is that we become so fixated on the intellectual pattern that we find in theories that we lose sight of the greater wonder and beauty of the universe itself that these theories represent or describe. The Christian novelist Dorothy L. Sayers (1893–1957), for example, from time to time found herself wondering whether she had fallen in love with the intellectual pattern she found in Christian theology, which led her to lose sight of the central figure of her faith – Jesus Christ (see p. 111). When rightly understood, theory is not an end in itself; it is a means of enriching our delight and grasp of what it represents. When wrongly understood, it leads to an overthinking of things, in which we end up focusing on provisional and partial representations of reality rather than an untamed and undiluted reality itself.

Yet there is a third cause for concern here: the risk of excessively ambitious or dogmatic theory-driven readings of nature. We might think, for example, of Arthur Koestler (1905–83), whose commitment to a Marxist-Leninist ideology in the 1930s led him to see the world in a simplistic and highly politicized way. In his autobiography, Koestler describes his own gradual movement away from his youthful ideological certainties about the world to a reluctant recognition of its obscurity and resistance to definitive interpretation.

In my youth, I regarded the universe as an open book, printed in the language of physical equations and social determinants, whereas it now appears to me as a text written in invisible ink, of which, in our rare moments of grace, we are able to decipher a small fragment.⁵

Koestler's account of his disenchantment with the theoretical certainties of Marxism-Leninism makes fascinating reading. In the end, however, his problem was not that he recognized

the need for a theory to understand the world but his dawning realization that he had chosen the *wrong* theory. We all need some sort of theoretical framework – however modest, provisional and correctable – for making sense of nature, history and life. Whether consciously or unconsciously, we all see life through theoretical spectacles that shape what we see and – perhaps more importantly – what we fail to see. That’s why it matters to get the theory right.

Throughout this book I shall be defending the view that the Christian big picture of reality is defensible, useful and trustworthy – above all, in making sense of the successes and limits of the natural sciences, and offering an enriched vision of reality that goes beyond that offered by the rigorous application of the scientific method. Along the way we shall deal with a series of important issues and concerns, including those noted above.

So where should we begin? Perhaps the most obvious starting point is to celebrate the natural sciences and reflect on their deeper implications – including their limits.

Science is great – but we need more than this

Science is one of humanity’s most significant and most deeply satisfying achievements. I fell in love with it when I was a teenager and have never lost a sense of delight in the scientific study of nature. Yet though I loved science as a young man, I had a sense that it wasn’t complete. Science helped me to understand how things worked. But what did they *mean*? Science gave me a neat answer to the question of how I came to be in this world. Yet it seemed unable to answer a deeper question. *Why* was I here? What was the point of life?

The question is whether the natural sciences can help us engage with these deeper issues, which Karl Popper famously framed in terms of ‘ultimate questions.’⁶ For Popper, these were existentially significant questions, rooted in the depths of our being, yet which transcended the capacity of the natural sciences to answer. The physicist John Wheeler (1911–2008) argued that our scientific observations at best yield only an ‘island of knowledge’ in an

ocean of uncertainty.⁷ There are limits to science's capacity to answer fundamental philosophical questions of value and meaning, partly reflecting limitations on the part of the tools we use to explore reality and partly the nature of physical reality itself.

So why don't we just limit ourselves to the relative security of this small island of knowledge? There are two obvious answers. First, we sense that there is more that can be known and are restless until we find it. We find strange objects washed up on the shoreline of our island, possibly pointing to mysterious unknown worlds beyond its coast. And perhaps more significantly, the kind of knowledge to be had on this island is existentially inadequate. It doesn't answer the really big questions of life. That's why the Spanish philosopher José Ortega y Gasset (1883–1955) argued that we need more than the partial account of reality that science offers.

Scientific truth is characterized by its precision and the certainty of its predictions. But science achieves these admirable qualities at the cost of remaining on the level of secondary concerns, leaving ultimate and decisive questions untouched.⁸

Ortega suggests that human beings need an 'integral idea of the universe' that possesses existential depth and not merely cognitive functionality. Science has a wonderful capacity to explain how the world works, while nevertheless failing to satisfy the deeper longings and questions of humanity. For Ortega, the great intellectual virtue of science is that it knows its limits, which are determined by its research methods. At its best, science will only answer questions it knows it can answer on the basis of the evidence and thus avoids the kind of inflationary speculation to which theologians and philosophers are prone.

Yet there is a problem here: human beings want to press beyond the point at which science must stop, if it is to remain faithful to its methodological commitments. Ortega concedes that there is no arc of evidence that securely and unequivocally links the empirical world and some transcendent reality. Yet he invites us to imagine an arch linking two stone pillars. Part of

the arch has collapsed. Yet in our mind's eye we can still see the trace of its original arc and make the now imaginative, but once real, connection between the two pillars. So it is, he suggests, with the worlds of experience and meaning, science and faith. We can see that there is a link and follow it through in an act of imaginative embrace, rather than logical analysis.

For Ortega, 'we are given no escape from ultimate questions. In one way or another, they are in us, whether we like it or not. Scientific truth is exact but it is incomplete.'⁹ We feel impelled to ask deeper questions about meaning and try to find a big picture that makes sense of life as a whole.¹⁰ To be true to ourselves, we have to follow these roads and see where they lead.

Scientists are human beings and thus are naturally prone to ask these fundamental questions, just like everyone else. So what happens if science cannot answer them? Science is very good at taking things to pieces. Yet analysis is not enough; we need to weave together the various elements of our world in order to perceive the big picture. That's why we need an enriched vision of reality that consolidates and expands what science can tell us about reality. Science can fill in part of the big picture of the universe; but it leaves empty significant expanses of this canvas. Yet we feel that we need more than this partial picture if we are to lead meaningful lives.

The great physicist Albert Einstein (1879–1955) explored this point in a landmark lecture given at Princeton Theological Seminary in 1939 on the general theme of 'science and religion'. It is a classic piece from one of the world's landmark thinkers and merits close reading. Noting that, until quite recently, it was widely held that 'there was an irreconcilable conflict between knowledge and belief', Einstein pointed out how this view needed to be challenged. Conceding that 'convictions can best be supported with experience and clear thinking', Einstein then made a remarkably perceptive comment: 'those convictions which are necessary and determinant for our conduct and judgments cannot be found solely along this solid scientific way.'¹¹