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The Boyle Lecture 2014: New Atheism – New Apologetics: The Use of Science in Recent Christian Apologetic Writings

It is a great pleasure to deliver the 2014 Boyle Lecture here at the historic church of St Mary-le-Bow, in the City of London. In doing so, I am conscious of standing in the shadows of some great figures, in both the immediate and more distant past. Shortly before his death in 1691, Robert Boyle – then one of England’s greatest scientists – bequeathed a sum of money to endow a series of lectures devoted to ‘proving the Christian Religion against notorious Infidels’.¹ The Boyle lectures, delivered over the period 1692-1732, are widely regarded as the most significant public demonstration of the ‘reasonableness’ of Christianity in the early modern period, characterised by that era’s growing emphasis on the importance of a rational defence of faith, and an increasing suspicion of ecclesiastical authority. Intellectual and cultural historians are increasingly appreciating the importance of what is often known as the ‘Augustan Age’ (c. 1690-1745) in shaping modern attitudes towards science and religion.²

The first series of Boyle Lectures, delivered in 1692 by Richard Bentley, was devoted to a ‘confutation of atheism’. I thought it might be interesting to make a connection with our own times and to consider some issues in the field of science and religion which are highlighted by the rise of what we have come to term, for better or worse, the ‘New Atheism’.³ The phrase is, perhaps, unhelpful, in that most of the ideas associated with this movement are far from new. I think that what is ‘new’ about this movement is not so much its intellectual outlook as its tone of engagement. As has often been pointed out in scholarly assessments of the movement, its novelty value lies primarily in its aggressive rhetoric, on the one hand, and its unpleasant tendency to focus its polemic against religious people, rather than religious ideas, on the other.

It is not my intention to engage the ideas of the New Atheism in this lecture. This has been done by so many people in so many ways that it seems

1 For the background, see Dahm, J.J. ‘Science and apologetics in the early Boyle lectures’, *Church History* (1970) 39, 172-186; Byrne, M. ‘The Boyle lectures at St Mary-Le-Bow’, *Science and Christian Belief* (2005) 17, 2-4.

2 For the use of this phrase, see Gippert, S. *Joseph Addison’s Ovid: An Adaptation of the Metamorphoses in the Augustan Age of English Literature*, Sankt Augustin: Gardez (2003).

3 There is a large literature. See e.g. Amarasingam, A. *Religion and the New Atheism: A Critical Appraisal*, Leiden: Brill (2010); Markham, I.S. *Against Atheism: Why Dawkins, Hitchens, and Harris Are Fundamentally Wrong*, Malden, MA: Wiley- Blackwell (2010).

pointless to add further to an increasingly tired and stale discussion.⁴ My intention rather is to explore how the assertion of epistemological priority and privileges on the part of the natural sciences by leading ‘New Atheist’ writers, such as Richard Dawkins, has been reflected in the way in which Christian apologetics has deployed recognisably scientific strategies and working assumptions in responding to them. This is not about ‘science versus religion’, although it suits the purposes and agendas of some to present it as such. As we shall see, it is fundamentally about competing interpretations of science, and diverging applications of the scientific method.

Reflecting on the influence of science on theology

I began my academic career as a scientist, studying chemistry at Oxford University under the mentorship of Jeremy Knowles and then researching in the biological sciences at Oxford under Professor Sir George Radda. This immersion in a scientific research culture is meant to shape minds and patterns of thought, and it certainly shaped mine. As I look back on my own intellectual development, I can see four points at which Oxford’s scientific culture had a decisive impact on my approach to thinking and writing.

First, I absorbed an emphasis on clarity of writing and presentation. Opaque, ambivalent and highly nuanced forms of speech were to be avoided, in that they constituted a barrier to grasping your methods, results and interpretations. I remain suspicious of the habit that some theologians seem to regard as some kind of intellectual virtue – namely, apparently hiding behind words – and take particular pleasure in the writings of those who aim for clarity of expression and formulation. After taking advice, the first Christian theologian that I read seriously was Karl Barth; and he persuaded me that theology could be taken seriously by a scientist. I often wonder what might have happened if I had begun my reading elsewhere. Happily, other theologians I studied reinforced this perception – most notably, Thomas F. Torrance and Austin Farrer.⁵

Secondly, an evidence-based approach to argument is now hard-wired into my soul and is reflected in the fundamental questions that I ask as a theologian. Why should someone think this? How might they be shown to be wrong? What evidence underlies your position? The capacity to assemble a well-ordered evidential argument seems to me to be one of the most important skills that any scientist can develop. And I must insist that theologians learn from this. I intend no disrespect, but I am unhappy

⁴ See esp. Hart, D.B. *Atheist Delusions: The Christian Revolution and Its Fashionable Enemies*, New Haven: Yale University Press (2009).

⁵ See e.g. Torrance, T.F. *Theological Science*, London: Oxford University Press (1969); Farrer, A. *A Science of God?*, London: Bles (1966).

about the tendency I see in some theologians to assert, rather than to argue; or to appeal to an authority rather than to evidence, without providing reasons for these assertions, or anticipating objections and alternatives. It seems to me that more theologians need to take seriously the intellectual discipline of evidence-based thinking, not least in engagement with the public domain.

A third habit of thought that I picked up during my time as a scientist is related to this. The core question that many of my philosophical colleagues want to ask about an idea is this: ‘Is it reasonable?’ I have always baulked at this. This seems to be a sure-fire way of locking us into some form of rationalism, which allows reason to determine what can be right and thus imprisons the scientific enterprise within a rationalist straitjacket. The fundamental question a scientist is going to ask is not ‘Is this reasonable?’ but ‘What are the reasons for thinking this is true?’ We cannot lay down in advance what ‘rationality’ is characteristic of the universe; we have to find out either by letting the universe itself tell us, or figuring out ways of uncovering it.

Scientific rationality is thus best thought of as something that is discovered, rather than predetermined or predicted. In my first year studying chemistry at Oxford I specialised in quantum theory and soon realised that I had to learn to conform my own thinking to the nature of the universe, rather than tell the universe what form it should take, based on what seemed to me to be ‘reasonable’. I exaggerate slightly, but we might suggest that rationalism tells the universe what it ought to be like, whereas science allows the universe to answer back – and listens to it.

You will not need me to tell you how this line of thought is theologically productive and responsible. To give one obvious example: the key question to ask about the doctrine of the Trinity is not ‘is this reasonable?’ As Augustine of Hippo pointed out ages ago, the task of theology is not to reduce God to the intellectually manageable (and then label this ‘reasonable’). It is to expand the vision of the human intellect so that it can grasp as much about God as it can – an idea that is best expressed using the notion of ‘mystery’ – namely, ‘something that we cannot grasp in its totality’. The task of a responsible Christian theology is to discover the internal logic of the Christian faith, not to lay down in advance what form this should take.

But it is a fourth habit of thought that I want to highlight. When confronted with a mass of observations, the scientist’s fundamental instinct is to try and figure out what ‘big picture’ or ‘theory’ makes the most sense of them. Let us remember here that a theory (Greek: *theoria*) is ultimately a way of seeing or ‘beholding’ things. Although I remain unpersuaded by Martin Heidegger’s more adventurous explorations of this theme – such as

his intriguing idea that *theoria* is a kind of ‘sacral beholding’⁶ – his more modest reflections on the need to ‘see’ things properly are entirely plausible.

We might term this style of thinking ‘induction’. Or we might turn to the great American philosopher Charles Peirce – himself a scientist – and speak instead of ‘abduction’.⁷ By ‘abduction’, Peirce meant a search for a way of seeing things that fitted in observations naturally and persuasively. Sometimes this arose from intense rational reflection; sometimes by what I can only describe as imaginative leaps. A classic example is August Kekulé’s idea that benzene possessed a cyclical structure, first set out in a French article of 1865, and then in a German article of 1866. Kekulé did not explain the ‘logic of discovery’ lying behind this idea at that time, although his subsequent work provided an extensive ‘logic of justification’ for the ring structure of benzene.

Yet in 1890, at a celebration marking the twenty-fifth anniversary of this suggestion – by then widely accepted – Kekulé spoke of how this idea came to him. Perhaps because his reputation was by then beyond reproach, Kekulé was able to tell his astonished audience of the unorthodox manner by which he developed the idea in the first place.⁸ He had a dream of a snake chasing its own tail. Happily, Sigmund Freud had yet to develop his own distinctive way of explaining dreams about snakes! But while the origins of this idea might indeed be somewhat speculative, even mystical, the fact remains that, when it was checked out against the evidence, it seemed to work. The manner of its derivation might be opaque; the manner of its verification, however, was perfectly clear – and ultimately persuasive.

Scientific rationality and apologetics: some initial reflections

But these historical reflections are rather more than a mere prelude to my main themes in this lecture. The question I wish to explore is this. Given the emphasis of the ‘New Atheism’ on the natural sciences as a model for rationality, what response might Christians make? Answering this question allows us an angle of approach to the relation of science and religion which I believe to be illuminating and helpful, providing that its limits are understood and acknowledged. Although this question is given a new prominence by the ‘New Atheism’, it is important in its own right. And I want to suggest to you that this fourth habit of thought that I developed as a scientist – namely, looking for the ‘big picture’ or the ‘best explanation’ – is both theologically and apologetically important. Let me emphasise that

6 Those interested might enjoy McNeill, W. *The Glance of the Eye: Heidegger, Aristotle, and the Ends of Theory*, Albany, NY: State University of New York Press, (1999).

7 Paavola, S. ‘Peircean abduction: instinct, or inference?’, *Semiotica* (2005) 153, 131-154.

8 The text of the speech is reproduced in Kekulé, A. ‘Benzolfest Rede’, *Berichte der Deutschen Chemischen Gesellschaft zu Berlin* (1890) 23, 1302-1311.

I make no claim to personal acuity here; my point is simply that this habit of thought is typical of the scientific enterprise, and reflects its empirical and evidential orientation.

I think that we must recognise that in bringing science and religion into discussion with one another we are only dealing with a partial encounter. Science and religion can neither be elided nor declared to be ‘non-overlapping magisteria’. There are clearly areas of shared interest and concern, despite important divergences that must be noted and respected. One of those is a desire to make sense of things.⁹

The whole issue of making sense of reality is deeply embedded in both the natural sciences and the Christian faith. Indeed, if I might offer a personal perspective, one factor that led me decisively away from my youthful atheism to Christianity was my growing realisation that the Christian faith made far more sense of what I saw around me and experienced within me than its atheist alternatives. I gladly endorse C. S. Lewis’s statement, now inscribed on his memorial stone in Poet’s 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.’¹⁰

Yet there is more to Christianity than making sense of things. We can hardly overlook its emphasis on the existentially transformative nature of salvation, nor the rich experience of beauty and awe which is so often evoked in Christian worship. Yet the fact remains the intellectual capaciousness of faith cannot be overlooked. As the Harvard psychologist William James suggested many years ago, religious faith is basically ‘faith in the existence of an unseen order of some kind in which the riddles of the natural order may be found and explained’.¹¹

I concede that this aspect of Christianity can be overemphasised, leading to an impoverishment of faith. Dorothy L. Sayers, unquestionably one of the finest lay theologians of the twentieth century, was convinced that Christianity seemed to offer ‘the only explanation of the universe that is intellectually satisfactory’.¹² Yet she subsequently wrote to William Temple, then archbishop of Canterbury, confessing that she was so attracted to this aspect of Christianity that at times she wondered whether she had ‘fallen in love with an intellectual pattern’.¹³ Looking back on my

9 Dear, P.R. *The Intelligibility of Nature: How Science Makes Sense of the World*, Chicago: University of Chicago Press (2008).

10 Lewis, C.S. ‘Is Theology Poetry?’, in *C. S. Lewis: Essay Collection*, London: Collins (2000), p. 21.

11 James, W. *The Will to Believe*, New York: Dover Publications (1956), p. 51.

12 Letter to L. T. Duff, 10 May 1943; Reynolds, B. (ed.) *The Letters of Dorothy L. Sayers: vol. II, 1937 to 1943*, New York: St Martin’s Press (1996), p. 401.

13 Letter to William Temple, Archbishop of Canterbury, 7 September 1943; Reynolds (ed.) *op. cit.*, (13), p. 429.

own exploration of my faith, I can see this failing – and it is a failing! – reflected in my own early thinking. Yet as I grew in faith, its imaginative and aesthetic dimensions became increasingly evident to my mind and increasingly important to my theological articulation. Yet that intellectual foundation remains firmly embedded in my mind, giving structure and stability to everything else that is based upon it.

At the other end of this spectrum of possibilities, we might note the brilliantly argued critique of the ‘New Atheism’ provided by Terry Eagleton, who was severely critical of those who treat religion as a fundamentally explanatory phenomenon. ‘Christianity was never meant to be an explanation of anything in the first place’, he wrote. ‘It’s rather like saying that thanks to the electric toaster we can forget about Chekhov.’¹⁴ Eagleton suggests that believing that religion is a ‘botched attempt to explain the world’ is about as helpful as ‘seeing ballet as a botched attempt to run for a bus’.

Eagleton is surely right to argue that there is more to Christianity than an attempt to make sense of things. Yet this explanatory theme is – as Dorothy Sayers appreciated – part of its rich heritage. Christians have always held that their faith makes sense in itself and makes sense of the enigmas and riddles of our experience. The gospel is like an illuminating radiance that lights up the landscape of reality, allowing us to see things as they really are. The French philosopher Simone Weil (1909-43) made this point especially well, and I would like to cite from her in making this point:

If I light an electric torch at night out of doors, I don’t judge its power by looking at the bulb, but by seeing how many objects it lights up. The brightness of a source of light is appreciated by the illumination it projects upon non-luminous objects. The value of a religious or, more generally, a spiritual way of life is appreciated by the amount of illumination thrown upon the things of this world.¹⁵

The ability to illuminate reality is an important measure of the reliability of a theory and an indicator of its truth.

The best theory is the one that is able to fit in observations and experiences most elegantly, most simply, most comprehensively and most fruitfully.¹⁶ This way of approaching things has come to play a significant

14 Eagleton, T. *Reason, Faith, and Revolution: Reflections on the God Debate*, New Haven, CT: Yale University Press (2009), p. 7.

15 Weil, S. *First and Last Notebooks*, London: Oxford University Press (1970), p. 147.

16 For some of the issues, see Kleiner, S.A. ‘Explanatory coherence and empirical adequacy: the problem of abduction, and the justification of evolutionary models’, *Biology and Philosophy* (2003) 18, 513-527; Glass, D.H. ‘Coherence measures and inference to the best explanation’, *Synthese* (2007) 157, 275-296; Psillos, S. ‘The fine structure of inference to the best explanation’, *Philosophy and Phenomenological Research* (2007) 74, 441-448.

role in recent Christian apologetics. The approach adopted is not primarily deductive. Instead of saying that there are certain incorrigible considerations that force us to draw the conclusion that God exists, we suggest that the Christian faith is like a good scientific theory: it gathers together or ‘colligates’ observations and experiences in a manner that is plausible, expansive and productive.

I mentioned C.S. Lewis earlier. As many of you will know, Lewis was an atheist as a young man, taking the view that modern science (by which he meant the science of the 1910s) had discredited faith.¹⁷ So what were his reasons for returning to faith after his atheist experimentations? In an unpublished manuscript dating from around 1930 and recording his musings about his conversion, Lewis makes the remarkable statement: ‘I am an empirical theist. I arrived at God by induction.’¹⁸ This fits perfectly, not simply with the general trajectory of Lewis’s intellectual development, but with his apologetic writings of the early 1940s, in which the rationality of faith is treated as a matter of supreme importance.¹⁹ And interestingly, Lewis makes an implicit appeal to a characteristically empirical mode of reflection in explaining the rational basis of his conversion.

Lewis may well have found this way of thinking already expressed in the writings of his great hero, G. K. Chesterton. After his initial agnosticism, Chesterton’s spiritual journey took a decisive new turn in 1903. He published a newspaper article explaining why he and many others now regarded Christianity with intense intellectual seriousness. ‘We have returned to it because it is an intelligible picture of the world.’ Chesterton realised that testing a theory meant checking it out against observation. ‘The best way to see if a coat fits a man is not to measure both of them, but to try it on.’ Let Chesterton himself explain what he has in mind.

Numbers of us have returned to this belief; and we have returned to it, not because of this argument or that argument, but because the theory, when it is adopted, works out everywhere; because the coat, when it is tried on, fits in every crease . . . We put on the theory, like a magic hat, and history becomes translucent like a house of glass.²⁰

Chesterton’s argument is that it is the Christian vision of reality as a whole – rather than any of its individual components – that proves so compelling. Individual observations of nature do not ‘prove’ Christianity

17 I explore the contours of Lewis’s conversion (or ‘re-conversion’) in McGrath, A.E. *C. S. Lewis – A Life: Eccentric Genius, Reluctant Prophet*, London: Hodder & Stoughton (2013), pp. 135-151.

18 This statement is found in the manuscript known as ‘Early Prose Joy’, held at the Wade Center, Wheaton College, Illinois.

19 See ‘Reason, experience, and imagination: Lewis’s apologetic method,’ in McGrath, A.E. *The Intellectual World of C. S. Lewis*, Oxford: Wiley-Blackwell (2013), pp. 129-146.

20 Chesterton, G.K. ‘The Return of the Angels’, *Daily News*, 14 March 1903.

to be true; rather, Christianity validates itself by its ability to make sense of those observations. Take note of this statement, which seems to me to be both beautifully phrased and fully of inductive insight: ‘The phenomenon does not prove religion, but religion explains the phenomenon.’ For Chesterton, a good theory – whether scientific or religious – is to be judged by the amount of illumination it offers, and its capacity to accommodate what we see in the world around us and experience within us. ‘With this idea once inside our heads, a million things become transparent as if a lamp were lit behind them.’ Once more, we note an implicitly inductive approach being adopted to apologetic questions, fitting in well with the habits of thought of many scientists.

Chesterton and Lewis are widely regarded as two of the best apologists of the twentieth century and they were not writing in reaction against the ‘New Atheism’ or its forebears. Their approach here is not conditioned by circumstances, nor provoked by a specific controversy. Neither Chesterton nor Lewis would claim any scientific credentials, yet their inductive mode of thinking is one familiar to any scientist.

Let us tease out some aspects of this approach and bring some other people into the conversation. First – to go back to Chesterton’s nice little aphorism: ‘The phenomenon does not prove religion, but religion explains the phenomenon’ – we need to ask what Chesterton means by ‘explain’ in this context. The late Christopher Hitchens, one of the leading (and loudest) representatives of the ‘New Atheism’, famously declared that religion explains nothing. However, the rhetorical force of this bold assertion is significantly reduced by Hitchens’s failure to explain what he means by ‘explain’.²¹ To explore this point a little further, let me begin by turning to the writings of William Whewell, one of the greatest early Victorian philosophers of the empirical sciences, whose writings remain luminous and rewarding, even if few now read them.

One of Whewell’s most interesting reflections concerns the capacity of a good theory to ‘colligate’ observations, like a string holding together a group of pearls in a necklace. Whewell held that all observation involves what he terms ‘unconscious inference’, in that what is observed is actually unconsciously or automatically interpreted in terms of a set of ideas. Whewell rejected the somewhat deficient notion of induction as the mere enumeration of observations. Instead, Whewell developed the richer idea that induction was a process of reflection that added something essential to this process of enumeration – namely, some kind of organising prin-

21 For some useful recent contributions to this discussion, see Press, J. ‘Physical explanations and biological explanations, empirical laws and a priori laws’, *Biology and Philosophy* (2009) 24, 359-374; Schweder, R. ‘A defense of a unificationist theory of explanation’, *Foundations of Science* (2005) 10, 421-435; Humphreys, P. ‘Causal models of explanation remain significant’, in *The Chances of Explanation: Causal Explanation in the Social, Medical, and Physical Sciences*, Princeton, NJ: Princeton University Press (1989).

ciple. In the process of induction, he suggested, ‘there is a New Element added to the [combination of instances] by the very act of thought by which they were combined’.²² Whewell held that this ‘act of thought’ was to be understood as a process of ‘colligation’ – the mental operation of bringing together a number of empirical facts by ‘superinducing’ upon them a way of thinking which unites the facts. For Whewell, this renders them capable of being expressed by a general law, which both identifies and illuminates the ‘true bond of Unity by which the phenomena are held together’.²³

One of the points that emerges from Whewell’s perceptive analysis is that a good theory is able to ‘colligate’ observations that might hitherto have been regarded as disconnected. We might think, for example, of Newton’s theory of gravity as ‘colligating’ observations that had up to that point been seen as unconnected – such as the falling of an apple to the ground and the orbiting of planets round the sun. As many of you will know, this idea of explanation as colligation of what might otherwise be seen as unrelated and disparate events underlies Margaret Morrison’s recent notion of unitative explanation, which has obvious importance for Christian apologetics.²⁴ It also underlies the approach known as ‘inference to the best explanation’, now widely regarded as the dominant philosophy of science.

The rise of the New Atheism has led to Christian apologists reaffirming and representing the fundamental reasonableness of the Christian faith and to an appeal to the natural sciences in support of faith, leading to inferential, inductive or abductive approaches being deployed apologetically. It could be argued that this development is essentially both opportunistic and tactical, a response to a short-term need. But I am not so sure. The cultural changes within England during the late seventeenth and eighteenth centuries made it clear that Christianity had to assert and defend its reasonableness in the public domain if it was to hold its own in an increasingly sceptical world of ideas.²⁵

Bishop Butler’s classic *Analogy of Religion* (1736) is important both as a work of apologetics in its own right and as a talisman of a church which was willing and able to engage cultural concerns and criticisms relating to its intellectual foundations.²⁶ Back in the 1960s, in an age of cultural

22 Whewell, W. *The Philosophy of the Inductive Sciences, Founded upon their History*. 2nd edn. 2 vols., London: John W. Parker (1847), vol. 2, p. 48. For more on Whewell’s approach and its wider impact, see Snyder, L.J. *Reforming Philosophy: A Victorian Debate on Science and Society*, Chicago: University of Chicago Press (2006).

23 Whewell *op. cit.*, (22), vol. 2, p. 46.

24 e.g. Morrison, M. *Unifying Scientific Theories: Physical Concepts and Mathematical Structures*, Cambridge: Cambridge University Press (2000).

25 I explore this point in McGrath, A.E. *Darwinism and the Divine: Evolutionary Thought and Natural Theology*, Oxford: Wiley-Blackwell (2011), pp. 49-84.

26 Rurak, J. ‘Butler’s analogy: a still interesting synthesis of reason and revelation’, *Anglican Theological Review* (1980) 62 no. 2, 365-381.

unrest and transition, Austin Farrer made much the same point. Listen to him – he is right:

Though argument does not create conviction, the lack of it destroys belief. What seems to be proved may not be embraced; but what no one shows the ability to defend is quickly abandoned. Rational argument does not create belief, but it maintains a climate in which belief may flourish.²⁷

In my view, the New Atheism prompted the church to recover an apologetic tradition that seems to have faltered after the 1960s. The continued popularity of the apologetic writings of C. S. Lewis – whose books sell more copies today than during his lifetime – is partly a reflection of their merits, but also a reflection of the fact that nobody has really emerged as Lewis's obvious successor as a popular Christian apologist.

What I want to highlight in this lecture is the way in which the New Atheism's somewhat unsophisticated evidential appeal to science as indicative of atheism is being matched in Christian circles by a rather more sophisticated appeal to the scientific method as supportive of faith. I hope that I will need to offer no justification for my choice of John Polkinghorne to illustrate this approach. I also hope that he will need nothing in the way of introduction, not least because he wrote – though sadly, on account of illness, was unable to deliver – the Boyle Lecture last year.²⁸

The approach of John Polkinghorne

I first began to read Polkinghorne's works in the early 1980s, and continue to do so, with both profit and admiration. So what approach does he use? A number of studies of Polkinghorne's approach have picked up on his idea of 'congruence'. This is expressed at a number of levels, including his important reflections on the 'unreasonable effectiveness of mathematics':

We are so familiar with the fact that we can understand the world that most of the time we take it for granted. It is what makes science possible. Yet it could have been otherwise. The universe might have been a disorderly chaos rather than an orderly cosmos. Or it might have had rationality which was inaccessible to us.... There is a congruence be-

27 Farrer, A. 'The Christian Apologist', in Gibb, J. (ed.) *Light on C.S. Lewis*, London: Bles, G. (1965), pp. 23-43, p. 26.

28 The best studies of Polkinghorne are in German: Irlenborn, B. 'Konsonanz von Theologie und Naturwissenschaft? Fundamentaltheologische Bemerkungen zum interdisziplinären Ansatz von John Polkinghorne', *Trierer Theologische Zeitung* (2004) 113, 98-117; Stenke, J.M. *John Polkinghorne: Konsonanz von Naturwissenschaft und Theologie*, Göttingen: Vandenhoeck & Ruprecht (2006). For a somewhat mixed collection of articles in English, see Watts, F.N. & Knight, C.C. (eds.), *God and the Scientist: Exploring the Work of John Polkinghorne*, Farnham: Ashgate (2012). John Hedley Brooke delivered the 2013 Boyle Lecture in Polkinghorne's place.

tween our minds and the universe, between the rationality experienced within and the rationality observed without.²⁹

Yet this congruence itself requires explanation. We might recall Albert Einstein's famous quip here: 'The most incomprehensible thing about the universe is that it is comprehensible.'³⁰ So, what way of looking at things makes sense of this? How can we render intelligibility intelligible? Polkinghorne's answer over the years, increasingly framed in explicitly Trinitarian terms, is that Christianity provides us with a framework that explains what is otherwise a miracle or a most fortunate accident. In what follows, I want to look at several themes that I discern within Polkinghorne's approach, which seem to be to be both warranted and helpful.

To begin with, Polkinghorne makes a critical and important distinction between what critical realists call different 'levels of explanation'. He uses an analogy which is familiar to the British and endearing to the Americans.³¹ Suppose, Polkinghorne suggests, that he decides to make a pot of tea and puts a kettle on his gas stove. An observer might see this kettle of water on the stove and ask 'Why is the water in the kettle boiling?' At one level, the answer is to be framed scientifically. Burning gas generates heat, which is transferred to the water, and thus raises the temperature of the water to its boiling point.

Yet the question can – and should – be answered at another level. The kettle is boiling because Polkinghorne wanted to make a pot of tea. Now I think you can see that these two responses are both valid and grounded in reality. Yet they are not in competition; indeed, the two explanations complement each other, providing a more complete picture of the whole tea-making enterprise. The two explanations are to be seen as 'friends, not foes'.

Why is this point so important? The 'New Atheism' takes a strongly positivist view of science, holding that it explains (or has the potential to explain) everything, including matters traditionally regarded as lying within the religious realm. Science and religion offer competing explanations. For the 'New Atheism', science will ultimately triumph and religious explanations will fade away. There cannot be multiple explanations of the same things and only the scientific explanation can be valid.

29 Polkinghorne, J. *Science and Creation: The Search for Understanding*, London: SPCK (1988), pp. 20-21.

30 'Physics and Reality' (1936), in Einstein, A. *Ideas and Opinions*, New York: Bonanza (1954), p. 292.

31 Randall D. Isaac has pointed out to me that the analogy of the boiling kettle on a gas ring seems to have been first used by Professor Douglas C. Spanner in the early 1960s: see Rhodes, F.H.T. 'Christianity in a mechanistic universe', in MacKay, D.M. (ed.) *Christianity in a Mechanistic Universe and Other Essays* (London: InterVarsity Fellowship, 1965), pp. 11-48, esp. 42.

Let me explore this a little further.³² A scientific description of the world describes how it arose from the initial cosmological event we know as the ‘big bang’, which led, over a long period of time, to the formation of stars and planets, creating conditions favourable to the origination and evolution of living creatures. No reference is made, or needs to be made, to God in this scientific account of things. Yet the Christian will supplement this account, speaking of God bringing the world into existence and directing it towards its intended outcomes. For some, this process involves direct divine action; for others, it involves God creating and working through natural forces to achieve those goals.

Now my point is that these two accounts supplement, rather than contradict each other. They are not in competition. As Polkinghorne rightly notes, ‘our goal is an integrated picture of the way the world is’ – and that means weaving together different levels of explanation to provide a rich and comprehensive whole.

Next, we need to look at the question of whether religious faith can be proved. Polkinghorne makes it clear that Christian belief can be regarded as warranted or justified. Yet it is not something that is – or, indeed, can be – proved. Good reasons can be given for faith, even if these fall short of the rigorous proof that we expect in logic or mathematics. But on further reflection, we realise that this form of rigorous proof is actually limited to logic and mathematics. Here’s what Polkinghorne has to say on this matter.

Neither science nor religion can entertain the hope of establishing logically coercive proof of the kind that only a fool could deny. No one can avoid some degree of intellectual precariousness, and there is a consequent need for a degree of cautious daring in the quest for truth. Experience and interpretation intertwine in an inescapable circularity. Even science cannot wholly escape this dilemma (theory interprets experiments; experiments confirm or disconfirm theories).³³

This account of the place of proof and faith in science should be compared with that set out by Richard Dawkins in *The Selfish Gene*, on which he bases his criticisms of religious faith in *The God Delusion*. Dawkins argues that there is no need for faith in science, in that the evidence for a correct conviction compels us to accept its truth. This is what he has to say.

[Faith] is a state of mind that leads people to believe something – it doesn’t matter what – in the total absence of supporting evidence. If

³² I offer a fuller (but accessible) exploration of these ideas in McGrath, A. *Surprised by Meaning: Science, Faith, and How We Make Sense of Things*, Louisville, KY: Westminster John Knox Press (2011).

³³ For the context of this remark, see Polkinghorne, J. *Theology in the Context of Science*, London: SPCK (2008), pp. 84-86.

there were good supporting evidence, then faith would be superfluous, for the evidence would compel us to believe it anyway.³⁴

Yet on reflection, this turns out to be an unsustainable view of the relation of evidence and belief in the natural sciences, not least because it fails to make the critical distinction between the ‘total absence of supporting evidence’ and the ‘absence of totally supporting evidence’.

For example, consider the current debate in cosmology over whether the ‘big bang’ gave rise to a single universe, or a series of universes (the so-called ‘multiverse’). Many distinguished scientists support the former approach and equally distinguished scientists support the latter.³⁵ Both are real options for thinking and informed scientists, who make their decisions on the basis of their judgements about how best to interpret the evidence. The issue is that of evidence-based judgement, in which decisions have to be taken on the basis of a less than total apprehension of reality. The issue is about justification, rather than proof – being able to show that there are good reasons for thinking something is right, without the luxury of total confirmation.

Polkinghorne thus emphasises the ability of the Christian faith to make sense of the world, including the successes of the natural sciences. We see this especially in his 2003 essay ‘Physics and metaphysics in a Trinitarian perspective’.³⁶ A Trinitarian view of reality, Polkinghorne here argues, offers a lens through which the scientific enterprise can be satisfactorily explained. Science raises questions which it cannot answer on the basis of its own methods, thus pointing the way to the need for a renewed theological engagement with nature. This general approach, often in redacted forms, is now encountered widely throughout the Christian community, particularly among natural scientists, who find it to resonate strongly with their working methods and assumptions.

Thus far, I have commended an appeal to the natural sciences in engaging the ‘New Atheism’. Yet I need to add a little more texture and depth to this discussion. We must, I think, appreciate that the use of such scientific approaches to apologetics is not without risk. To appreciate this point, let us reflect further on the original Boyle Lectures of the 1690s and early 1700s. While these lectures are of interest to historians for many reasons, one of their more intriguing features is how they demonstrate that critiques of Christianity often determine the shape of the Christian response – and hence a broader cultural perception of what Christianity actually is.

34 Dawkins, R. *The Selfish Gene*, Oxford: Oxford University Press (1976), p. 330.

35 There is a large literature. A good starting point is the collection of essays in Carr, B. (ed.) *Universe or Multiverse?*, Cambridge: Cambridge University Press (2007).

36 Polkinghorne, J.C. ‘Physics and metaphysics in a Trinitarian perspective’, *Theology and Science* (2003) 1, 33-49.

Let me explain what I mean. Any attempt to describe Christianity properly would have to take into account its rational, moral and aesthetic dimensions, acknowledging that it is a multifaceted phenomenon which is supremely resistant to reductionist accounts of either its identity or significance. Yet the 'sceptical' criticisms of Christianity of the early Augustan Age primarily challenged its intrinsic rationality. In response, the apologists of that landmark age reasserted and defended the rationality of their faith, concentrating on meeting specific cognitive objections, rather than setting out a full vision of their faith, indicating as appropriate how this related to the controversies of their day.³⁷

At one level, of course, this is a sound rhetorical strategy, in that objections are seen to be engaged and to be met. But I must suggest that it also unintendedly creates the impression that Christianity is essentially a rational belief system. And that, I must insist, is an impoverished view of Christianity. A defensible apologetic strategy thus unintentionally creates a misleading or impoverished perception of what Christianity is all about.

I see a similar trend in today's responses to the New Atheism. The New Atheists – especially Richard Dawkins and the late Christopher Hitchens – launched a critique of Christianity which focused on its alleged rational and moral defects. Christian apologists responded by meeting these rational and moral concerns, point by point. Yet with hindsight, we can see that the New Atheism set the terms of the debate, in effect determining the battleground. That is why the initial 'New Atheist' critique served to crystallise so many popular perceptions about the nature of Christianity. If we were to judge Christianity by the manner in which it is presented in refutations of the New Atheism, I think it would be found to be excessively rational, lacking any real concern for beauty (to mention one obvious point). And here I must, by the way, concede my own complicity in this unhelpful development!³⁸

Things are now changing, of course, and the waning of media interest in the New Atheism and in the public credibility of its approach now allows for a much fuller and more authentic public articulation of the nature and characteristics of Christianity. The New Atheism raised some very good questions, without providing satisfactory answers. The debate and discussion continues, and we must ensure that we are part of that. The huge recent public interest in the fiftieth anniversary of the death of C. S. Lewis partly reflects his rich imaginative vision of the Christian faith. As his Ox-

37 For some helpful observations concerning the emergence of these intellectual trends, see Dixon, T. 'Scientific atheism as a faith tradition', *Studies in History and Philosophy of Science*, (2002) C 33, 337-359.

38 For example, my own bestselling rebuttal of Dawkins's approach focuses too narrowly on cognitive issues (though for understandable reasons): McGrath, A.E. and McGrath, J.C. *The Dawkins Delusion? Atheist Fundamentalism and the Denial of the Divine*, London: SPCK (2007).

ford colleague Austin Farrer once suggested, Lewis's remarkable success as an apologist was partly due to his ability to offer 'a positive exhibition of the force of Christian ideas, morally, imaginatively, and rationally.'³⁹

The Boyle Lectures, as originally conceived, were concerned with engaging the questions raised in the increasingly sceptical culture of the Augustan Age in England, and in particular demonstrating the intrinsic rationality of the Christian faith in an emerging scientific culture. I believe that this task needs to be continued and I see plenty of encouraging signs that this is taking place – not least the impressive series of new Boyle Lectures at St Mary-le-Bow. In this lecture I have noted some of the themes and characteristics of these responses, as well as identifying some points of concern that appear to need further consideration as the discussion progresses.

But I would like to end on a personal note. As many of you will know, I shall be taking up the Andreas Idreos Professorship of Science and Religion at Oxford University in a few weeks' time. I have the privilege of succeeding two distinguished historians – John Hedley Brooke and Peter Harrison – who each made landmark contributions to the field of science and religion. During its first phase, the Idreos chair has become associated with outstanding research and teaching in the field of science and religion. Yet for the reasons I have outlined in his lecture, I have concluded that the Idreos chair, without losing its vital focus on excellence in teaching and research, must also be a chair of public engagement. That is to say, it must become a focus for engagement with the issues about science and religion that are being asked right now within our culture, and not simply within the academy. We need to think more about the public dissemination and cultural interpretation of knowledge and research, not simply its academic generation. I believe that this can be done – but I know it needs to be done!

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³⁹ Farrer *op. cit.*, (27), p. 26.