

**The 2009 Gifford Lectures
University of Aberdeen**



**Professor Alister E. McGrath
King's College, London**

Lecture 6: Conclusion – Clues to the Meaning of the Universe?
Thursday 26 February 2009

These lectures have addressed one of the most fundamental questions of human existence: how do we make sense of the world around us? What is our place in the universe? What is the meaning of things? These questions have been debated since human beings began to think, and there is no reason to suppose that any form of closure is in sight, or even possible. They remain frustratingly and tantalizingly open, a source of constant irritation to those who demand certainty in all things. The Enlightenment's grand quest for a single unified narrative of reality, which could be expressed in terms of the necessary and universal truths of reason, has faltered under the weight of evidence urged against it. Yet this has done nothing to discourage the quest for the most reliable account of the meaning of life and the place of humanity within the universe. The brash overconfidence of the Enlightenment may have eroded our confidence in the answers it gave to these questions; it has not, however, seen those questions lose their power or allure.

In these lectures, I have set out an approach to natural theology – the age-old intellectual enterprise of exploring whether the natural world that we

observe around us can disclose another realm, traditionally described using the language of “the transcendent” or “the divine”. William Paley advocated an approach to natural theology based on intelligible and beautiful outcomes; the approach I adopted find a new sense of wonder in the vast, complex processes which brought them about, adding to – not diminishing from – the sense of awe and amazement that arises from encountering and engaging nature. Paley and I both engage in dialogue with the sciences; yet we do so from different perspectives, and with a different set of scientific spectacles through which to view the world.

Richard Dawkins is perhaps the best-known critic of Paley. His book *The Blind Watchmaker* (1986) argues that a purely natural account may be offered of what Paley took to be instances of special, direct divine creation. Dawkins appears to believe that the case for a natural theology is weakened through recognizing the forces within nature that have led to the world as we know it. Far from it; we now have an additional source of wonder in those processes themselves, and the “cosmic coincidences” that enabled them to operate in this manner. “We knew of old that God was so wise that He could make all things: but behold, He is so much wiser than even that, that He can make all things make themselves” (Charles Kingsley). Paley’s static vision of natural theology requires scientific revision, conceptual expansion, and theological elaboration, which I have attempted to explore in these lectures.

Yet there is another point of difference between the approach adopted in these lectures and older forms of natural theology. Where some have argued that the existence and at least some of the characteristics of God can be deduced from the natural world, I argue for a more modest and realistic approach, based on the idea of resonance or “empirical fit” between the Christian worldview and what is actually observed. The Christian faith, grounded ultimately in divine self-revelation, illuminates and interprets the natural world; the “Book of Scripture” enables a closer and more fruitful reading of the “Book of Nature”. Abduction, not deduction, is as characteristic of natural theology as it is of the natural sciences. The capacity

of the Christian vision of reality to illuminate and explain what is observed is to be regarded as important in its own right, as well as constituting an indirect confirmation of its own veracity, in a manner analogous to “self-evidencing truths”.

To make this point is not to imply that Christianity is simply a way of understanding things. I have taken some care to point out that a fundamental theme of the Christian gospel is the transformation of humanity, traditionally and rightly articulated in terms of atonement and salvation. Yet part of that transformation is intellectual, in that the Christian faith gives rise to a “renewal of the mind” (Romans 12: 1-2) which inevitably leads to seeing things in a new way. Augustine’s view that salvation entails the “healing of the eyes of the heart” is an important statement of this point. To extend Augustine’s imagery further, natural theology embraces both the healing of our spiritual vision, and what we subsequently perceive in nature. It designates both the process of the believing engagement with nature, and the understanding of nature which results. The approach here adopted thus represents rather more than a theology of nature, in that it enfolds both this process of assessment and engagement, and its outcome.

Nor does this approach imply that natural theology is to be understood primarily as a sense-making activity. It is clearly far richer and deeper than this, extending to the aesthetic appreciation of the natural world, and the moral inhabitation of its possibilities. The central image of “seeing” embraces the notions of interpretation, appreciation, and principled action, in that the way in which we “see” an object influences our attitudes towards it. Natural theology is about a theologically grounded quest for truth, beauty and goodness within nature. In these lectures, I have concentrated on the sense-making aspects of natural theology, not in order to limit this enterprise to an appeal to reason, but in order to enable a more focussed, detailed and extended engagement with the sense-making dynamics of faith than would otherwise be possible.

Christian theology certainly makes possible a mapping of conceptual space, allowing the apparent ambiguities and riddles of experience to be accommodated within its overall vision of the nature of reality. Iris Murdoch (1919-99) knew of “the calming, whole-making tendencies of human thought”, which, while respecting the singularities of experience and observation, is nonetheless able to transcend these particularities through generating a comprehensive vision of the world as a whole. Similarly, the great American psychologist William James (1842-1910) spoke of the manner in which infants experience the world as being “one great blooming, buzzing confusion.” The intellectual, aesthetic and moral ambiguity of the world often present a similar theological challenge, raising the question of how the noise of the world might be interpreted as a tune. The Christian faith, it is argued, offers a unitary and unifying vision of reality, which allows sense to be made of the bewildering complexity and apparent epistemic anarchy of the natural order. An authentically Christian theology provides us with a conceptual net to throw over our experience of the world, allowing us to make sense of its unity, and live with its seeming contradictions.

Where others have argued that a natural theology offers a causal explanation of the natural order, I take the view that its distinct characteristics are better described in terms of “explanatory unification”. Natural theology is a way of “seeing” the natural world that arises from within the Christian tradition, deriving both its foundations and coherence from a Trinitarian ontology – and that this way of “seeing” things resonates strongly with our observation and experience of the world. I argue for the “empirical fit” of a Trinitarian worldview with what may be observed of the natural world, human reason and experience, and culture in general. The notion of “empirical fit” was introduced into theological discourse by the Oxford mathematician and philosopher of religion Ian T. Ramsey (1915-72). Ramsey’s own formulation of the approach should be studied in full:

The theological model works more like the fitting of a boot or a shoe than like the “yes” or “no” of a roll call. In other words, we have a particular

doctrine which, like a preferred and selected shoe, starts by appearing to meet our empirical needs. But on closer fitting to the phenomena the shoe may pinch. When tested against future slush and rain it may be proven to be not altogether water-tight or it may be comfortable . . . In this way, the test of a shoe is measured by its ability to match a wide range of phenomena, by its overall success in meeting a variety of needs. Here is what I might call the method of empirical fit which is displayed by theological theorizing.

Now there are obvious risks of subjectivism in Ramsey's approach, if his imagery is taken at face value. For example, what criterion of epistemological comfort is appropriate to determine the extent of "empirical fit"? Yet Ramsey was clear that his idea of "empirical fit" had significant value for the evaluation of theoretical approaches to nature, where conclusive verification was impossible. It is a fundamentally empirical notion, originating within the natural sciences, which Ramsey believed – rightly, in my view – had considerable theological potential.

Its possible subjectivism aside, there are, of course, some difficulties with the notion, as a cursory engagement with the philosophy of science indicates. It might be pointed out, for example, that several "empirically equivalent" theories might be brought forward as explanations of a set of observations, forcing theory choice on other grounds (if, of course, it is possible to make a meaningful adjudication in the first place). Nevertheless, despite his failure to produce a viable general theory of justification of religious beliefs, Ramsey's loose appeal to the idea of "empirical fit" draws attention to the need for a natural theology to possess some conceptual symmetry with what is actually observed.

This, however, might provoke an indignant response from a critic, along the following lines: what you are proposing is simply an *ad hoc* theology, which is adjusted until a sufficient degree of resonance with experience is achieved. Your theology has simply been invented in response to what is

observed. It is a malleable affair, more characterised by intellectual plasticity and apologetic opportunism rather than by conceptual rigour.

The point being made is fair, and is undoubtedly significant in regard to some forms of natural theology. However, the approach adopted in these lectures is *not* to ground a natural theology on an engagement with the purely natural world, but to see natural theology as the outcome of seeing nature from the standpoint of the Christian tradition. In my view, a Trinitarian reading of the world offers a significant degree of empirical fit with what may be observed, despite the fact that this reading of things rests primarily, not on a reading of nature, but upon reflection on divine revelation. An appeal is thus made to the notion that the explanatory power of an explanation is itself seen as evidence of its correctness, an assumption that is found in most forms of “inference to the best explanation.”

In these lectures, I have argued that natural theology, as it is here presented, has considerable explanatory capacity. Yet some might not unreasonably wish to raise an objection here. How can natural theology be said to “explain”, when it seems incapable of predicting? The validity of scientific theory, after all, is partly assessed in terms of whether it can predict novelties. Natural theology appears to have somewhat limited potential in this respect. Does not this imply that it represents a deficient and inferior form of “explanation”, assuming that it is entitled to be thought of in terms of this category at all?

This issue emerged as important in the debate between William Whewell and John Stuart Mill over the role of induction as a scientific method. Whewell emphasized the importance of predictive novelty within the scientific method; Mill argued that there was nothing more than a psychological distinction between prediction of novel observations and theoretical accommodation of existing observations. It remains important, however, as the issues are far from settled. In their recent discussion of the issue, Christopher Hitchcock and Elliott Sober argue that while prediction can

occasionally be superior to accommodation, this is not always the case. Situations can easily be envisaged where accommodation is superior to prediction. Prediction is neither intrinsically nor invariably to be preferred to accommodation. If a Trinitarian natural theology is able to offer a robust accommodation of known observations, this may in itself be seen as sufficient justification of its ideas, without the necessity of prediction of novel observations.

Historical examples can easily be given of situations in which accommodation played a critically important role in the development of scientific theory. Perhaps the most accessible is Darwin's account of natural selection, which primarily entailed offering a new explanation of a wide range of observational data, some assembled by Darwin himself, others drawn from the works of his predecessors and contemporaries. For Darwin, the all-important question was how these observations could be best accommodated within a grand theory of development. The hypothesis of natural selection seemed to offer an intellectual vantage point from which the biological landscape could be understood in a more profound manner than before, allowing surprising or puzzling phenomena – such as the continued existence of rudimentary organs – to be accommodated with relative ease. Prediction has a role to play in theory choice; nevertheless, some theories concern entities or situations in which prediction may seem inappropriate or simply impossible. If natural theology rests primarily upon accommodation, it is in good scientific company.

I have argued that a Trinitarian natural theology, which is able to offer a rich conceptual resource for accounting for the complex variegations of the natural world. In an earlier lecture, we reflected on some aspects of a Trinitarian theological vision, and their relevance for natural theology. However, our recent reflections on “accommodation” raises some interesting questions – above all, whether Christian theologians have “adapted” or “modified” classic Christian doctrines in the light of contemporary cosmology or evolutionary biology. A critic might argue that these are forced

into forms alien to their original formulation, with the objective of securing a high degree of resonance with contemporary scientific thought. In what follows, I propose to outline some basic features of a classic Trinitarian vision of reality, which has the potential for development and enrichment for an engagement with the natural sciences. Augustine of Hippo (354-430) is unquestionably the most respected and widely cited theologian in western Christianity, serving both as a major intellectual stimulus and resource to virtually every subsequent period of theological reflection and activity. Augustine's doctrine of creation is classic, both in the sense of establishing a norm and offering a resource for future generations. While Augustine's successors have felt free to modify and develop as much as endorse his ideas, it is clear that they have been one of the most productive and significant influences on the shaping of Christian theology in the west, and seem set to remain so.

Yet my reason for setting out Augustine's conceptually rich approach goes beyond its historical influence and potential fruitfulness. I have deliberately chosen a classic Christian writer who developed his system in the light of a close reading of Scripture and the Christian tradition long before the emergence of modern scientific revolution – the period, usually identified as 1500-1700, which is often seen as the historical moment when “modern science” and its attendant institutions emerged – to avoid any suggestion that these systems were somehow accommodated or adapted to conform with modern scientific knowledge. There is a widespread suspicion that certain theories, philosophical and theological, are merely constructed *ad hoc* in order to accommodate data. As Peter Lipton has pointed out, such theories are often “forced” and “fudged”. While there is a sense in which every theory is a response to observation, many are rightly suspicious of a theory which appears to have been developed opportunistically as a matter of intellectual convenience, rather than integrity. It is for this reason that many philosophers of science have stressed the importance of prediction, holding this to be of greater intellectual virtue than accommodation, even though some have rightly pointed out that this distinction ultimately seems

to rest more on the psychology of dramatic discovery, rather than the epistemology of confirmation.

My point here is that Augustine offers us theological paradigms which are deeply rooted in the Christian faith, offering us a way of engaging with modern scientific knowledge without being constituted or determined by that knowledge in the first place. If Augustine's approach is capable of accommodating modern scientific insights, this undoubted epistemic virtue would have been unknown to him. If we accept Alan Musgrave's distinction between "historical" and "logical" approaches to confirmation, then it is of no small significance that Augustine's approach has merits which he himself could not have known or anticipated at the time of writing.

The basic aspects of Augustine's doctrine of creation have been carefully studied, and are reasonably well understood. It represents a set of beliefs that are rigorously grounded in the biblical witness on the one hand, yet which are also subtly textured by prevailing trends in both philosophy and the natural sciences. Although Augustine wrote no fewer than four commentaries on the creation narratives of Genesis, the most significant and influential of these is entitled *On the Literal Meaning of Genesis*, written between 401 and 415. As the title makes clear, Augustine intended this to be a "literal" commentary on the text – not, however, in the modern sense of the term, but in contrast to the then popular "allegorical" mode of interpretation which saw the Old Testament as prefiguring the New. Augustine understood the term "literal" to mean something like "in the sense intended by the author". In what follows, I shall offer a close reading of this text, considering the importance of its ideas in engaging with the phenomenon of "fine-tuning".

Augustine is widely credited with playing a major role in the shaping of the western theological tradition, especially in relation to the doctrines of the Trinity, church, and grace. Yet his signal contribution to the formulation of a Christian doctrine of creation is often overlooked. Augustine's highly

important formulation of the concept of creation distinguished the emerging views of the Christian tradition, grounded in the biblical narratives, from those of contemporary Greek science and the prevailing cultural trends. Whereas most neo-Platonic thinkers regarded the world as an eternal entity, Augustine categorically affirmed that it was a created entity. God created the universe *ex nihilo* as an act of freedom. The universe is neither eternal nor necessary, but is a contingent entity which had its origins at a specific moment in time.

This distinctively Christian belief, found in the New Testament and given systematic expression during the patristic era, was regarded as ludicrous by the pagan critics of Christianity. One such critic was Claudius Galen (c. 129 – c. 200), who served as court physician to the emperor Marcus Aurelius. Galen objected to the idea, which he held to be implicit in the Genesis creation account, that the world was created out of what did not already exist, regarding this as both a logical and metaphysical absurdity. His concern here appears to have been the idea that God should bring things into being solely by an act of will, without regard to any prior act of reasoning or foresight, so that God has to be thought of as creating the world in an essentially arbitrary act of volition.

In insisting that the world came into being from nothing, Augustine was therefore adopting a profoundly counter-cultural position, which distanced him from the prevailing wisdom of contemporary classical science. Yet Augustine distanced himself further from contemporary science by arguing that time was itself part of the created order. Augustine does not hold to a temporal continuum, as if there were a continuous timeline along which the origins of the universe may be located. Time is itself an integral aspect of the created order. God, Augustine insists, could not be considered to have brought the creation into being at a certain definite moment in time, as if “time” itself existed prior to creation, or as if creation took place at a definite moment in a chronological continuum. For Augustine, time itself must be seen as an element of the created order, to be contrasted with the

timelessness which he held to be the essential feature of eternity. Augustine thus speaks of the creation of time (or “creation with time”), rather than envisaging the act of creation as taking place in time. Time is a constituent characteristic of the domain of the created, which remains dependent upon its creator. “We speak of ‘before’ and ‘after’ in the relationship of creatures, although everything in the creative act of God is simultaneous.” There is no concept of a period intervening before creation, nor an infinitely extended period which corresponds to “eternity”. Eternity is timeless; time is an aspect of the created order. Time must therefore be thought of as one of God’s creatures and servants. Augustine thus answers the question “What was God doing before he created the universe?” by pointing out that there is no temporal “before” in relation to the creation of the universe. God does not exist *in* time, which is a characteristic feature of the created order.

The term “created” also needs comment. Augustine does not limit God’s creative action to the primordial act of origination. God’s creation of things is understood to embrace both the origination of the world and the direction of the subsequent unfolding and development of the causalities which were embedded within the created order by that act of creation. There are thus two “moments” in creation, corresponding to a primary act of origination, and a continuing process of providential guidance. While conceding that there is a natural tendency to think of creation as a past event, he insists that God must be recognized to be working even now, in the present, sustaining and directing the unfolding of the “generations that he laid up in creation when it was first established”.

Perhaps the most significant aspect of Augustine’s account of creation lies in his notion of “seminal reasons” (*rationes seminales* or *rationes causales*). We have already noted how Augustine’s interpretation of Genesis is partly shaped by his knowledge of the natural science of his day – note, for example, his respectful recognition of the authority of contemporary medical opinion in his discussion of aspects of the human body, as created by God. In elaborating his idea of instantaneous creation, Augustine argued that

certain principles of order were embedded within the creation, which developed as appropriate at later stages.

The idea was not new. Earlier Christian writers had noted how the first Genesis creation narrative spoke of the earth and the waters “bringing forth” living creatures, and had drawn the conclusion that this pointed to God endowing the natural order with a capacity to generate living things. Augustine’s contribution to the further development of this notion was a powerful metaphor, almost certainly borrowed from Stoic writers: *rationes seminales* or seedlike principles that are present from the cosmic beginning, in each of which is contained the potential for the later development of a specific living kind. Augustine exploits this notion in his interpretation of Genesis 1: 12, which he holds to mean that the earth has received the power or capacity to produce things by itself:

Scripture has stated that the earth brought forth the crops and the trees causally (*causaliter*), in the sense that it received the power of bringing them forth. God created what was to be in times to come in the earth from the beginning, in what I might call the “roots of time”.

The image of a seed provided Augustine with a suitable analogy on which he could draw to support his more general thesis about the role of potential existing entities within the earth prior to their appearance in mature form when the conditions were right: “There is, indeed, in seeds some likeness to what I am describing because of the future developments stored up in them.” This also allowed him to maintain his emphasis on the simultaneous creation of all things, while additionally insisting that God, through his providence, was able to direct the subsequent actualization of the potentialities thus created. What some might attribute to chance, the believer attributes to providence. Yet Augustine was emphatic that these *rationes seminales* are not “seeds” in the normal sense of the term. The notion of the seed is heuristic, providing an inexact, though helpful, means

of visualization for the theologically difficult notion of a hidden force within nature through which latent things are enacted.

Augustine's basic argument is that God created the world complete with a series of dormant multiple potencies, which were actualized in the future through divine providence. Where some might think of creation in terms of God's insertion of new kinds of plants and animals ready-made, as it were, into an already existing world, Augustine rejects this as inconsistent with the overall witness of Scripture. Rather, God must be thought of as creating in that very first moment the potencies for all the kinds of living things that would come later, including humanity.

This does not mean that God created the world incomplete or imperfect, in that "what God originally established in causes, he subsequently fulfilled in effects." God's creation extends from actualities to potentialities, all of which were bestowed in the primordial act of origination. This process of development, Augustine declares, is governed by fundamental laws, which reflect the will of their creator: "God has established fixed laws governing the production of kinds and qualities of beings, and bringing them out of concealment into full view."

While Augustine's doctrine of the *rationes seminales* may well rest primarily on his biblical exegesis, shaped at least to some extent by previous philosophical reflection on the issue, his understanding of how these "seeds" develop is determined by the natural science of his day. Unsurprisingly, we find Augustine is firmly committed to what we would now term the "fixity of species". Yet intellectual alternatives were simply denied to Augustine on account of his historicity. It is perhaps worth noting that it is only when Augustine borrows ideas from the scientific outlook of the culture within which he was embedded that he makes mistakes that his successors need to correct.

Augustine approached his text with the culturally prevalent presupposition of the fixity of species, and found nothing in the text to challenge him on this point. Yet the ways in which he interacts with his scientific authorities and personal experience, suggests that, on this point at least, his views would be open to correction in the light of prevailing scientific opinion. Augustine was emphatic that the interpreter of Scripture must not become frozen or locked into a specific pattern of biblical interpretation.

Augustine thus interweaves biblical interpretation, an appeal to “right reason”, and a knowledge of contemporary science in his theological reflections concerning creation, which can be summarized as follows.

1. God brought everything into being at a specific moment.
2. Part of that created order takes the form of embedded causalities which emerge or evolve at a later stage.
3. This process of development takes place within the context of God’s providential direction, which is integrally connected to a right understanding of the concept of creation.
4. The image of a dormant seed is an appropriate, but not exact, analogy for these embedded causalities.
5. The process of generation of these dormant seeds results in the fixity of biological forms.

The first four of these points are all derived from Augustine’s reading of Scripture; the fifth represents what seemed to be a self-evident truth to Augustine, in the light of his personal experience and the contemporary scientific consensus. Augustine’s espousal of the fixity of species is best seen as a provisional judgement of experience, not a fixed statement of theological interpretation. As Augustine himself constantly and consistently emphasised, there is a danger of making biblical interpretation dependent on contemporary scientific opinion, leaving its outcome vulnerable when today’s provisional scientific consensus is replaced with tomorrow’s.

Augustine’s use of the metaphor of *ratio seminalis* is clearly open to evolutionary exploration, particularly when the fifth of his five elements of

creation is seen as a historically situated notion, open to scientific revision and development. The publication of Darwin's *Origin of Species* (1859) created new intellectual space for Augustine's approach, not least in that Darwin himself explicitly created space for divine action through secondary causes in his account of natural selection. Indeed, Darwin's notion of natural selection required him to postulate some means by which genetic characteristics might be "remembered", and hence transmitted to future generations without dilution. The genetic analogy he adopted was that of the "gemmule", a seed-like entity. Although now known to be an incorrect hypothesis, the "gemmule" clearly represents a recognition of the potential heuristic value of seed-based analogues in Darwin's understanding of natural selection.

Darwin's theory of natural selection, then, might have seemed to have opened the doors for a major theological re-evaluation, if not reappropriation, of Augustine's doctrine of creation. Yet it must be reported that virtually no writer of the later nineteenth century appears to have seen the potential of Augustine for the dialogue between Christian theology and Darwinian theory. An exception must be made in the case of the English Catholic biologist St George Mivart (1827-1900). In his original discussion of how, and to what extent, biological evolution might be accommodated theologically, Mivart appealed to the arguments of Augustine, as set out in the major work we have been considering in the present lecture: "St. Augustine insists in a very remarkable manner on the merely derivative sense in which God's creation of organic forms is to be understood; that is, that God created them by conferring on the material world the power to evolve them under suitable conditions."

Augustine, we must again emphasise, neither accepted nor anticipated Darwinian evolutionary paradigms; he shared the common human condition of being limited in his intellectual options on account of his historical location. Yet the potential of his approach to offer a theological framework for discussion of the evolutionary process in particular, and the historical

development of the universe in general, cannot be overlooked, and clearly merits closer examination as part of a renewed natural theology. A classic doctrine of creation resonates strongly with both the notion of a “big bang” and biological evolution. There is no accommodation here; simply the observation of consonance between Augustine’s position and what is currently accepted.

Yet recognition of an evangelical capacity to explain leads on to something much more significant: the capacity to confer meaning. And here we encounter one of the most distinctive and important aspects of the Christian faith: the throwing of a net of meaning over the raw data of experience. The gospel is not, we must remind ourselves, not primarily an explanatory account of cosmic or human origins. Its essence lies in its conferral of *meaning*, expressed in such notions as purpose, value, significance, and agency. The arguments set out in these lectures confirm the explanatory potential of faith, which needs to be converted into confidence in its related capacity to endow life with meaning.

Yet our concern in these lectures has been primarily with the explanatory potential of the Christian faith for an encounter with nature. The great English natural philosopher William Whewell (1794-1866) used a rich visual image to communicate the capacity of a good theory to make sense of, and weave together, observations. “The facts are known but they are insulated and unconnected . . . The pearls are there but they will not hang together until someone provides the string.” The “pearls” are the observations and the “string” is a grand vision of reality, a worldview, that *connects* and *unifies* the data. A grand theory, Whewell asserted, allows the “colligation of facts”, establishing a new system of relations with each other, unifying what might have otherwise been considered to be disconnected and isolated observations.

Continuing with this imagery, these lectures can be said to be about identifying pearls and searching for the best string on which to thread them.

The pearls are the anthropic phenomena that we briefly explored in the third and fourth of these lectures; the string is the Trinitarian vision of reality that is characteristic of classical Christianity. Both the string and the pearls are of considerable interest in their own right; yet the manner of their “colligation” is perhaps even more interesting. It is hoped that the explorations set out in these lectures will stimulate further interest in the future of natural theology, the explanatory dimensions of Trinitarianism, and the significance of anthropic phenomena. I have sought to avoid the excesses of those theist enthusiasts who fix upon fine-tuning as certain evidence for the existence of God on the one hand, and their atheist counterparts on the other, who often seek refuge in the notion of a multiverse simply to avoid the theistic implications of the phenomena we have been surveying.

These lectures have focused on examples of “fine-tuning” in nature, using them as examples of “surprising facts” (Charles Peirce) which require explanation, or potential “clues to the meaning of the universe” (C. S. Lewis). These are the pearls that need to be strung together in such a way that they make the most sense. A Christian vision of reality offers us a way of seeing things in which these observations are no longer surprising; if anything, they are to be expected. In particular, I have noted how Augustine of Hippo’s theology of creation offers an excellent theological platform from which to explore two of the most significant developments in the natural sciences in the last two hundred years: contemporary understandings of the origins of the universe, often referred to as the “big bang”; and our understanding of the development of life on earth, particularly the process which is often still referred to as “Darwinian” evolution.

There is little doubt that this discussion is set to continue, with the potential to illuminate and enrich both science and religion, and further the human quest for meaning in this often puzzling and bewildering universe. A growing willingness on the part of empirical, non-dogmatic scientists to consider the metaphysical and religious implications of the scientific enterprise has created new and exciting conceptual possibilities. This is

matched by an increasing awareness within the scientific community that, to quote the distinguished biologist Francisco J. Ayala, the “scientific view of the world is hopelessly incomplete” and that there are “matters of value, meaning, and purpose that are outside science’s scope.” Both Christian theology and the natural sciences have exaggerated their capacities in the past, doubtless with the best of intentions. The time is now right for both disciplines to acknowledge their limitations, and open the way to new possibilities of collaboration, dialogue and sheer intellectual delight. Natural theology, it seems, is back in fashion. And while these lectures offer a modest contribution to its further development, there is much more that needs to be done to continue its rehabilitation and extend its horizons.

I must end these lectures by thanking the University of Aberdeen for their kindness and graciousness in inviting me to deliver them, and their kind hospitality to me throughout my stay in this ancient Scottish seat of learning. But above all, I must thank you, my audience, for so faithfully turning up week after week in the depths of an Aberdonian winter. The question of God never goes away. I am sure that many of you will disagree with my explorations of the great themes that we have considered. But whatever you make of my ideas, I hope that you have nevertheless enjoyed the ride.

Alistair McGrath is Professor of Theology, Religion and Culture, and Head of the Centre for Theology, Religion, and Culture at King’s College, London.