

**The 2009 Gifford Lectures  
University of Aberdeen**



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Lecture 1: Yearning to make sense of things  
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It is a privilege and a pleasure to be able to spend six evenings with you here in Aberdeen, speaking on the theme of natural theology. I believe that it is one of the most exciting and interesting aspects of contemporary Christian theology, with considerable potential to illuminate and encourage the dialogue between science and Christian theology on the one hand, and between theology and the arts on the other.

It is a truth of nature that we yearn to make sense of nature, often with the profound sense that there is more to things than meets the eye. "Religious faith", wrote the celebrated psychologist William James, 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." Human beings long to make sense of things – to identify patterns in the rich fabric of nature, to offer explanations for what happens around them, and to reflect on the meaning of their lives. It is as if our intellectual antennae are tuned to discern clues to purpose and meaning around us, built into the structure of the world. "The pursuit of discovery," the philosopher of science Michael Polanyi noted, is "guided by sensing the presence of a hidden reality toward which our clues

are pointing”. Small wonder, then, that men and women have pondered what they observe around them, alert to the possibility of deeper levels of meaning lying beneath the surface of experience.

The quest for meaning transcends historical and cultural boundaries, even if cultures and individuals within them may offer very different accounts of what that meaning of life might be. For example, based on extensive personal interviews, psychologist Roy Baumeister suggested that four basic needs – purpose, efficacy, value, and self-worth – appear to underlie the human quest for meaning, understood as “shared mental representations of possible relationships among things, events, and relationships.”

So why is this quest for meaning so important? Social psychologists Stefan Schulz-Hardt and Dieter Frey suggested that three main reasons may be identified as lying behind the universality of this quest. First, it gives stability to existence, allowing people to orientate themselves in life. Second, it offers a defence mechanism in the face of a perceived threat of meaninglessness, which can overwhelm individuals and leave them unable to cope with life. The perception of meaninglessness can thus lead to distressing negative outcomes, such as depression, attempted suicide, alcoholism, or addiction. And third, it can be understood as the subjective response to an objective reality, in which the individual attempts to realign their internal world to conform to a deeper order of things, which is believed to exist independently of them. The subjective quest for meaning is thus grounded in a conviction that such a meaning exists objectively, and can be discovered by those with the will and ability to do so.

History reinforces our appreciation of the importance of this quest for meaning for human identity. Our distant ancestors studied the stars, aware that knowledge of their movements enabled them to navigate the world’s oceans and predict the flooding of the Nile. Yet human interest in the night sky went far beyond questions of mere utility. Might, many wondered, these silent pinpricks of light in the velvet darkness of the heavens disclose

something deeper about the origins and goals of life? Might they bear witness to a deeper moral and intellectual order of things, with which humans could align themselves? Might nature be studied and emblazoned with clues to its meanings, and human minds shaped so that these might be identified, and their significance grasped?

It is a thought that has captivated the imagination of generations, from the dawn of civilization to the present day. True wisdom was about discerning the deeper structure of reality, lying beneath its surface appearance. The book of Job, one of the finest examples of the wisdom literature of the Ancient Near East, speaks of wisdom as something that is hidden, that is to be found deep within the earth, its true meaning hidden from a casual and superficial glance. The emergence of the discipline of semiotics has encouraged us to see natural objects and entities as signs, pointing beyond themselves, representing and communicating themselves. To find the true significance of things requires the development of habits of reading and directions of gaze that enable the reflective observer of nature to discern meaning where others see happenstance and accident. Or, to use an image from Polanyi, where some hear a noise, others hear a tune.

Polanyi's image is illuminating, and highlights the importance of the human capacity to discern significance. Any such judgment involves at least a degree of intuition. As Polanyi noted, "our capacity for discerning meaningful aggregates, as distinct from chance aggregates, is an ultimate power of our personal judgment. It can be aided by explicit argument but never determined by it: our final decision will always remain tacit." The human mind is able to discern what it regards as patterns within nature – patterns that are laden with significance and meaning. Similarly, the abiding popularity of detective fiction testifies to the human desire to make sense of clues, riddles and mysteries, and the satisfaction that is derived from their resolution. C. S. Lewis alluded to this when he suggested that "right and wrong" were "clues to the meaning of the universe."

There is an obvious parallel here with Shakespeare's *As You Like It* (1599-1600), in which the good Duke Senior is exiled to the Forest of Arden, where, like Robin Hood, he lives close to nature with his faithful followers. There he reflects that he might be able to learn more from nature than from the corrupt court from which he has been banished:

And this our life, exempt from public haunt,  
Finds tongues in trees, books in the running brooks,  
Sermons in stones, and good in everything.

Nature is here understood to have the capacity to represent and speak. So how might nature disclose its meaning? Are clues to its significance embedded within its fabric?

Natural theology has to do with the issue of discerning God in nature. It is about *seeing* things as they really are. In the third volume of his *Modern Painters* (1856), John Ruskin (1819-1900) declared that "the greatest thing a human soul ever does in this world is to see something, and tell what it saw in a plain way . . . To see clearly is poetry, prophecy, and religion – all in one." For Ruskin, the act of "seeing" nature correctly was essential if the higher work of imaginative penetration and reconfiguration of nature to teach greater truths was to take place. Everything depended on this act of discernment and representation. Yet this raises the all-important question: is this act of discernment itself the "natural" outcome of an engagement with the world – or does it require to be acquired, developed, informed and calibrated on the basis of something else?

The poet Gerard Manley Hopkins (1844-89) insists that we must cultivate the habit of seeing nature correctly, in that this alone holds the key to its appreciation. Yet the predominant trend within the western theological tradition has tended to assume that our engagement with nature is cerebral and cognitive – the discernment of order and patterns, leading to an orderly, rational deduction of the existence of a creator God. Hopkins invites us to

see nature in another way. In this, he was influenced by Ruskin, who encouraged a move away from rational analysis to the development of “seeing” as an instrument of aesthetic discernment.

In his early nature journals, written while he was in his twenties, Hopkins seems to develop a quasi-mystical mode of seeing, capable of discerning previously hidden depths and significance within the natural world. Even the most seemingly ordinary things – a star in the night sky, a bird in flight – are to be seen in a new, theological light; they are marked – or, to use Hopkins’ distinctive vocabulary, they are “in-stressed” – by God’s creative act. Hopkins followed Ruskin in cultivating the “instrument of sight” in engaging the natural world, though he did not always “see” nature quite as Ruskin saw it.

There are echoes of this theme throughout Hopkins’ poetry, which regularly discloses his concern with the individuality of creatures and objects, the utterly unique self carried by each of them, reflecting some fractional part of God’s all-inclusive perfection. For Hopkins, any given thing has a distinct place within nature as a whole, is created by God, and possesses an “inscape” – that is, an essence or identity embodied in the thing and “dealt out” by it for others to witness, and thereby apprehend God in and through it. Hopkins develops the notion of “inscape” to mean far more than a positive aesthetic sensory impression, occasioned by the sight of nature: it is essentially an *insight*, made possible by divine grace, into ultimate spiritual reality, the way things really are – not so much seeing nature as pointing to God, but seeing every individual aspect and element of the natural order, as it were, from God’s side. Hopkins, it might be argued, sets out to awaken us to see each individual thing’s inscape, which bears the stamp of the divine.

This insight is famously and dramatically set out in the first two bold sentences of “God’s Grandeur,” which in themselves are enough to demonstrate Hopkins’ conviction that, in some way, God’s glory is radiated through the natural order.

The world is charged with the grandeur of God.  
It will flame out, like shining from shook foil.

Even though nature is fallen, humanity can still discover God within it. Humanity may have brutalized nature – hints of the devastating environmental impact of the Industrial Revolution can be found throughout the poem – but divine grandeur still radiates from its wreckage, with the potential to recharge itself. Other poets of this era – such as Matthew Arnold – may lament the loss of any sense of divine presence; Hopkins can be said to re-enact the immanence of divine presence within nature through forging ways of “seeing” that nature in such a way that its divine significance may be appreciated. Nature may be “seared with trade; bleared, smeared with toil”, wearing “man’s smudge”. Yet it has not lost its capacity to disclose the transcendent reality of God.

Or has it? On a closer reading of the poem, Hopkins seems to be saying that nature itself is inarticulate, and has to await interpretation through human agency. Nature does not itself proclaim the divine glory; yet such glory may be discerned within it. The “shook foil” is not the same as a “shaking foil”, in that it implies that the active agency of disclosure lies outside nature, not within it. By whom is nature “shook”, so that the glory of God might shine forth?

The final lines of “God’s grandeur” certainly point to the divine renewal of the nature that humanity has disfigured. Yet they also hint of something else – namely, God’s enabling of humanity to find the divine presence and nature, even within the smudged beauty of the world:

Because the Holy Ghost over the bent  
World broods with warm breast and with ah! bright wings.

We are here confronted with the possibility that the act of “seeing” God’s glory may not lie within humanity’s own grasp. It is an insight of grace, of

revelation. Can we really speak of nature having a capacity to reveal the divine glory, when we are incapable of discerning it without divine assistance? Might nature actually be mute and silent? If nature is itself inactive and passive, what is the mechanism of the disclosure of glory? Is glory *disclosed*, or is it *discerned*?

So perhaps traditional questions about natural theology need reformulation? Nature, after all, discloses nothing. It does not “speak”, in that it is mute. The construction of meaning is the creative work of the human mind, as it reflects on what it observes. Nature has “no tongue to plead, no heart to feel”; its role is limited, in that it can “only be”, to pick up on some lines from Hopkins’s neglected poem *Ribblesdale*. Nevertheless, it might be “in-stressed” – to use Hopkins’s distinctive way of speaking – with the signs and symbols that point the wise to its meaning. Yet the identification of that meaning lies with the observer, who must construct a schema, a mental map, in order to make sense of what is observed.

This thought underlies a revealing comment of Sir Isaac Newton (1642-1727), one of the most significant contributors to the scientific revolution of the seventeenth century. Newton’s scientific and mathematical breakthroughs – such as the discovery of the laws of planetary motion, and his development of calculus and the theory of optics – placed him at the forefront of the new understanding of nature as a mechanism. For Newton, what could be seen of nature was as a pointer to something deeper, lying beyond it, signposted by what could be seen. As he wrote towards the end of his life:

I seem to have been only like a boy playing on the sea-shore, and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me.

The familiarity of both this text and its imagery must not be allowed to detract from the fundamental idea that it expresses – namely, that the

scientific enterprise often focuses on the empirical, on surface phenomena, passing over the deeper structures and meanings of the world. We play on the shore, unaware of, or unwilling to venture into, the silent depths beyond. The pebble and shell are images of liminality – the awareness of standing on a threshold. What can be seen is a pointer to a greater whole that tantalizingly remains to be discovered.

This has long been the concern of natural theology, which is best interpreted as an attempt to find common ground for dialogue between the Christian faith and human culture, including the natural sciences, based on a proposed link between the everyday world of our experience and a transcendent realm – in the case of the Christian faith, with the “God and Father of our Lord Jesus Christ” (1 Peter 1: 3). It represents an “intertwining of knowledge and belief”, two habits of thought which are often seen as antithetical in the twenty-first century, yet which in fact have the potential for creative convergence. The growing interest in the dialogue between the natural sciences and Christian theology clearly points to natural theology as a significant conceptual meeting place, capable of stimulating and resourcing enriched visions of reality. Yet natural theology has been curiously sidelined in such discussions, its potential remaining frustratingly untapped.

Why is this so? While several factors have doubtless contributed to this marginalization, it is clear that the predominant concern is that natural theology is a relic from the past, a lost cause, compromised by the ambivalences of its past and tainted by its present associations. If my personal conversations with theologians, philosophers and natural scientists over the last decade are in any way representative, natural theology is generally seen as being like a dead whale, left stranded on a beach by a receding tide, gracelessly rotting under the heat of a philosophical and scientific sun.

This is a serious issue. In the past, natural theology was seen as mapping out an area with conceptually porous boundaries, allowing dialogue and crossfertilization between Christian theology, the arts, literature, and especially the natural sciences. The Victorian age, for all its faults, witnessed some remarkably creative discussions of natural theology, as the writings of Charles Kingsley, John Ruskin, and Gerard Manley Hopkins indicate. Yet such conversations are now rare, reflecting, in part, a lack of serious theological engagement with the concept of the “natural”. A belief that engagement with nature is theologically sterile has hindered what has the potential for considerable intellectual enrichment. Thus the famous Protestant theologian Karl Barth’s regrettable failure to engage with the natural sciences is clearly linked with his decidedly negative appraisal of natural theology.

Yet the very idea of natural theology designates a method, rather than a settled body of beliefs and assumptions. There is no single continuous narrative of natural theology within the Christian tradition which defines one approach as normative, and others as heterodox or marginal. The styles of engagement between Christian theology and the natural world are shaped, to an ultimately indeterminate and varying extent, by the intellectual and cultural conditions of the age. Thus the styles of natural theology that were developed in fourth century Alexandria are markedly different from those that predominated in early nineteenth century England. These are often “local theologies”, reflecting the histories and particularities of their contexts, including highly specific understandings of the concept of “nature” itself.

In the last fifty years, there has been a growing consensus that “nature” and “the natural”, far from being the objective, autonomous entities assumed by the Enlightenment, are actually conceptually malleable notions, patient of multiple interpretations, and hence subject to the influence of power, vested interests, ideological agendas, and social pressures. Historical surveys of how humanity has understood and defined “nature” reveal a surprisingly large range of options, most of which lie beyond empirical verification. To

note this point is not to lapse into some form of relativism or offer a purely social constructivist account of things. It is to confront the inescapable fact, which can easily be accommodated within a critical realist outlook, that “nature” is now understood to be a contested notion.

“Nature” denotes ways in which human observers choose to see, interpret and inhabit the natural, empirical world. The process of observation is “theory-laden” (N. R. Hanson), involved existing schemas or “mental maps” of reality. There are many concepts of nature, in that nature itself is essentially tractable and indeterminate, highly susceptible to conceptual manipulation by the human mind. Recognition of this point is of critical importance for a renewed “natural theology”, especially if undertaken from a critical realist perspective. It acknowledges – contrary to the predominant view of the Enlightenment – that the term “nature” does not designate an objective reality that requires interpretation. It is already an interpreted entity, which requires *reinterpretation*, by being “seen” in a new way.”

The notion of “nature” itself is ultimately a social construction. (I do not mean that what we call nature is an invention. I mean that the use of the word “nature” involves a particular interpretation of what we see in the natural world. “Nature, if you like, is a reification of what we observe in the natural world.) Like all such culturally constructed ideas and worlds, it is an unstable entity, which is subject to revision and reconstruction. The human understanding of nature has been subject to quite remarkable definitional fluctuations over time, with important consequences for the related idea of natural theology. Understandings of natural theology are thus often situation-specific, so that they cannot simply be transplanted from one historical community to another. None of them can be considered to determine the essence or essential forms of natural theology. We are free to develop forms of theology which are grounded in the Christian tradition and adapted to our situations, and are not trapped by previous generation’s envisionments of what natural theology ought to be.

Most recent discussion of natural theology has proceeded on the assumption that this term defines a conceptually stable and epistemologically autonomous style of theology. It is of the very essence of a natural theology, we are told, that it sets out to deduce the existence and at least something of the nature of God from an engagement with nature. Though many would concur with this viewpoint, it must be objected that it represents an “essentialist” judgement concerning the core identity of natural theology which fails to take account of the importance of the intellectual context in molding its specific forms. Furthermore, this assumes that the temporary historical predominance of one specific approach to natural theology is to be equated with intellectual stability and coherence.

There is an important parallel here with the engagement of science and religion, rapidly emerging as one of the most interesting and productive fields of intellectual inquiry. Yet to speak of the relationship or interaction between science and religion presupposes that there are certain agreed boundaries between them. For some, those boundaries are defined by the essential natures of the disciplines; others, however, have noted that these boundaries are dependent upon how a given historical era or school of thought chooses to understand the categories of “science” and “religion”. “Science” and “religion” alike are social constructed notions that reflect the prevailing assumptions of cultural and academic power groups. For the historian, neither science nor religion is reducible to some timeless “essence”, even though a series of master-narratives have been put forward in support of such “essentialist” theses. And since both the categories of “science” and “religion” are molded by their historical locations, it follows that the derivative category of the “relationship between science and religion” is even more greatly shaped by its historical context.

The topic of these lectures is the quest for God in the natural sciences and Christian theology, traditionally known as “natural theology”. Although this has been a subject of human interest since the dawn of recorded history, it has been given a new injection of intellectual energy in recent years by

theologians and philosophers, but above all by natural scientists. Natural theology languished in the intellectual doldrums for much of the twentieth century, especially within Protestantism. It was seen as tired and stale, a relic of a less critical age in theology and a more credulous age in science. The relentless advance of scientific explanation, matched by a corresponding retreat by Christian theology from the public domain, meant that natural theology seemed to be beached on the sands, left stranded as the tide that had once lent it such intellectual buoyancy had slowly ebbed away.

Yet there is every sign that natural theology is now emerging from its period of eclipse. There is growing sympathy for the view that natural theology can provide a deeper understanding on fundamental issues such as the fine-tuning of the universe, where science can “throw up questions that point beyond itself and transcend its power to answer.” Might natural theology once more act as a conceptual bridge between the worlds of science and religion? Or as a meeting place for theology, literature and the arts?

There is clearly a need to recover a vision for natural theology which is both securely rooted in the long tradition of Christian theological reflection and adequately adapted to our understandings of the natural world. My own interest in establishing a theologically rigorous engagement with the natural sciences led me to appreciate the importance of natural theology as a means of engaging the world of nature. In earlier pieces, especially my 2008 Riddell Memorial Lectures at the University of Newcastle, I offered an account of how the theological legitimacy and utility of natural theology might be reaffirmed, and placed upon a solid theological foundation. I attempted to develop a distinctively Christian approach to natural theology which retrieves and reformulates older approaches that have been marginalized or regarded as outmoded in recent years, establishing them on more secure intellectual foundations. The fundamental thesis of my approach is that that if nature is to disclose the transcendent, it must be “seen” or “read” in certain specific ways – ways that are not themselves necessarily mandated by nature itself. It is argued that Christian theology provides a *schema* or interpretative

framework by which nature may be “seen” in a way that enables and authorizes it to connect with the transcendent. Natural theology is here understood as an intellectual enterprise that is authorized and resourced by the rich Trinitarian ontology of the Christian faith. The enterprise of natural theology is thus one of discernment, of seeing nature in a certain way, of viewing it through a particular and specific set of spectacles. It has important resonances with the persistent human interest in the notion of access to the transcendent.

I was delighted to be asked to deliver the Gifford Lectures here at the University of Aberdeen, as this offered me the welcome opportunity to expand my approach to natural theology. Adam Lord Gifford (1820-97) stipulated that these lectures were to be dedicated to “promoting, advancing, teaching, and diffusing the study of Natural Theology.” While Lord Gifford and I share a common enthusiasm for natural theology, we nevertheless define it in significantly different ways. These lectures made it possible for me to develop my approach through exploring the degree of “empirical fit” between theory and observation. As I had been involved for some years in discussions relating to anthropic phenomena in the natural sciences, it seemed highly appropriate to consider how these might relate to the tasks and goals of a renewed natural theology. What are the implications for a natural theology of the apparent fine-tuning of the cosmos?

It is a relatively new question for modern science. Since the seventeenth century, it had been widely assumed that no special initial conditions were required for the emergence of a life-bearing universe. Yet in the last few decades, it has become clear that this is not the case. There has been a growing realization of the extraordinary degree of contingency of the initial conditions of the universe, if heavy elements, planets, and ultimately complex life, were to develop. The life-bearing properties of the universe are highly sensitive to the values of the fundamental forces and constants of nature. The theoretical physicist Lee Smolin points to the importance of this point in relation to the development of stars:

The existence of stars rests on several delicate balances between the different forces in nature. These require that the parameters that govern how strongly these forces act be tuned just so. In many cases, a small turn of the dial in one direction or another results in a world not only without stars, but with much less structure than our universe.

A life-bearing universe is far more constrained than had been realized. This has led many to speak of the universe being “fine-tuned” for life. This is, of course, an inexact metaphor, in that it is resistant to quantification; it is perhaps best seen as articulating an intuition, rather than formulating a precise mathematical deduction. Furthermore, the term is ambivalent, denoting both *fecundity* and *fragility*. The former tends to be the case in cosmological contexts, in which “fine-tuned” systems are robust, leading to fruitful outcomes. The latter often applies to biological situations, in which a system is vulnerable through being so adapted to its present environment that it cannot cope with significant changes. Our concern throughout these lectures is primarily, but not exclusively, with the first understanding of “fine-tuning”. But what, if anything, does this *mean*?

The term “anthropic principle”, introduced by the physicist Brandon Carter in 1974, has come to be widely used as a way of speaking of the curious properties of the universe. The universe, it seems, is intriguingly friendly towards life. Did the universe encourage the emergence of humanity (*anthropos*), who might observe its puzzling features, and reflect on their significance? The term “anthropic” is not a particularly helpful, and has been challenged on several grounds; it has, however, established its presence in the field, and it is now difficult to find an alternative term. Yet though the “anthropic principle” is perhaps better seen as a statement and contextualization of the issue, rather than anything even approaching its solution, it is widely agreed that the observation of “fine-tuning” in the universe requires explanation – an explanation which is potentially of considerable theological significance.

These lectures set out to take this discussion further, both in terms of developing a natural theology which is adapted to intellectual engagement with the natural sciences, and contributing towards the scientific, philosophical and theological discussion of the wider meaning of anthropic phenomena. I do not argue that fine-tuning represents a proof of the Christian belief in God; I nevertheless insist that it is consonant with the Christian vision of God, *which is believed to be true on other grounds*, in that it offers a significant degree of intellectual resonance at points of importance. While this “proves” nothing, it is nonetheless deeply suggestive. Might it be, to use the luminous phrase of C. S. Lewis noted earlier, a “clue to the meaning of the universe”?

The fundamental point here is that there are many things about the natural world that appear strange to us – such as its apparent fine-tuning. The American philosopher Charles Peirce (1839-1914) argued that what he termed “surprising facts” were a fundamental stimulus to the advancement of human thought. Yet Peirce perhaps fails to make the point that certain facts are surprising only because they are seen in a certain way. We all approach the observation of nature with a set of inherited or acquired assumptions, a mental map which helps us to make sense of what we observe. The central argument of these lectures is simple: that certain facts are observed which are indeed “surprising”. Yet we can easily imagine a standpoint from which they are *not* surprising, and might even be anticipated. The Christian vision of reality, which has its own distinct evidential basis and intrinsic rationality, offers us a standpoint from which we may view the natural world, and see certain things that others might indeed regard as puzzling or strange – such as fine-tuning – as consonant with the greater picture that the Christian has to offer.

In these lectures, I hope to extend the discussion and analysis of fine-tuning in nature, and to offer what it is hoped will prove to be a helpful theological framework on the basis of which these may be explained. It is my hope to

bring both theological rigor and enthusiasm into the increasingly interesting and productive discussion of these phenomena within the scientific community, which has generally tended to marginalize theology – not on account of any perception that theology is irrelevant to this discussion, but on account of the slightly more disturbing discernment that many professional theologians do not appear to regard it as particularly significant or potentially fruitful.

There is clearly more to be said about instances of apparent “fine-tuning” than the concession of their existence. I hope to set out and defend a defensible and principled approach to natural theology, which seeks to identify and explain phenomena within the context of the framework provided by a Trinitarian natural theology. A natural theology, when shaped and informed by the fundamental themes of the Christian tradition – in short, a *Trinitarian* natural theology – can act as a point of convergence between the Christian faith, the arts and literature, and above all the natural sciences, opening up important possibilities for dialogue, cross-fertilization and mutual enrichment. A Trinitarian approach to natural theology allows the Christian faith to shine its own distinct intellectual light on the landscape of reality, releasing humanity from introspective self-preoccupation, and illuminating and inspiring our study of the natural world. Such an approach to natural theology is fully capable of confronting the spectrum of complexities of the natural world without intellectual evasion, distortion or misrepresentation.

It is my hope to use these lectures to establish and explore the intellectual virtues of a Trinitarian natural theology, chiefly by considering the significance of the observation of “fine-tuning” or “anthropic phenomena” in any coherent account of reality. It represents a contribution both to the contemporary dialogue between the natural sciences and Christian theology on the one hand, and to the longstanding debate within the Christian academic community concerning the theological legitimacy and significance of natural theology on the other. It also opens up the possibility of

recovering a religiously traditional, yet scientifically coherent, creation story for our generation. I trust it will be clear that I have little sympathy for Stephen Jay Gould's well-intentioned but ultimately misguided notion of "non-overlapping magisteria" in science and religion; rather I hold that the natural sciences and Christian theology represent distinct areas of intellectual inquiry which nevertheless offer each other possibilities of crossfertilization on account of the interpenetration of their subjects and methods.

Having argued for the explanatory fecundity and power of a Trinitarian natural theology, I then turn to consider certain aspects of the natural world that clearly requires explanation – namely, evidence of fine tuning within nature. The third and fourth of these six lectures are devoted to a scientific analysis of the notion of "fine tuning", partly because of its obvious relevance to natural theology, and partly on account of Lord Gifford's stipulation that I am to treat natural theology "as a strictly natural science, the greatest of all possible sciences." Much work on anthropic phenomena has focused on the significance of the cosmological constants for the emergence of life. This section of the work expands this analysis substantially, showing how anthropic phenomena can be identified in the realms of chemistry, biochemistry and evolutionary biology. It is argued that the existence of these phenomena can be accounted for on the basis of the Christian vision of reality, especially the forms of natural theology that it generates and sustains.

But, as I bring this lecture to a close, I would like to take this opportunity to dedicate these lectures to the memory of two of Scotland's greatest twentieth-century theologians, John Macquarrie (1919-2007) and Thomas Forsyth Torrance (1913-2007). Each made significant contributions to our understanding of natural theology, and to the theological enterprise in general. They are both greatly missed.

So where do we go from here? From what has been said thus far, we clearly need to look at the notion of natural theology in more detail before proceeding further. Perhaps the most obvious place at which to start is to ask whether we need natural theology at all. Might we dispense with it, and be none the worse off for doing so? It is an uncomfortable thought, given Lord Gifford's strong views on the matter, but it is clearly a possibility that demands exploration. We must ask whether natural theology is, in the first place, defensible, and in the second place, useful. So what are the criticisms that have been directed against it in recent years? And how might one respond to these criticisms? We shall turn to consider these questions in the next lecture, on Thursday evening.

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