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Where is Natural Theology Today?¹

So where is natural theology today, two centuries after William Paley? The short answer is, 'Alive and well, having learned from past experience to lay claim to insight rather than to coercive logical necessity, and to be able to live in a friendly relationship with science, based on complementarity rather than rivalry'.

One may define natural theology as the attempt to learn something of God from the exercise of reason and the inspection of the world – in other words, from reflection on general experience rather than from specific revelatory events. This kind of thinking is a project at least as old as the Wisdom writers of the Hebrew Bible. They look at the world with a cool and discerning eye and they are not afraid to tell things as they see them: 'A poor man is odious even to his friends; the rich have friends in plenty' (Proverbs 14:20). The sages know that the fear of the Lord is the beginning of wisdom, but they make little direct appeal to the events of Israel's salvation history.

In the life of the Christian Church there have been two great periods in which natural theology flourished: the later Middle Ages, and the period at the end of the eighteenth century and beginning of the nineteenth, in which the thought of Archdeacon William Paley played so important a role. The first of these periods laid great stress on the exercise of reason, with Anselm's celebrated ontological argument for the existence of God representing the most ambitious exercise of this kind. Defining God as that than which no greater can be conceived, Anselm listed the properties that would be possessed by such a maximal being: omnipotence, omniscience, etc. What about existence? Surely it is a greater thing to exist than not to exist, so ... God exists, QED! Yet there is something fishy here, for Anselm seems to have plucked a divine rabbit out of a logical top hat, in a manner that raises suspicion. Disagreements about the force of the ontological argument have continued to the present day, but many people feel that Immanuel Kant was able to show how the trick was done. Unlike omnipotence, omniscience, etc, existence is not a defining predicate saying what properties something possesses; rather it signifies that there is an actual entity that possesses those truly defining properties. On careful reflection, understanding Kant's clarification implies that all that Anselm was really entitled to claim was that *if a maximal being actually exists*, then it will not depend for its existence on anything outside of itself, for such dependence would obviously be an inferior property. In other words, if there is a God, then God possesses what the medievals called aseity, being in itself, but the actual question of the existence of God is still left open.

1 This lecture was given at the Bi-Centenary of the death of Archdeacon William Paley on 22 May, 2005, in Carlisle Cathedral.

In the later period of the flourishing of natural theology, Paley and his colleagues, such as the authors of the Bridgewater Treatises devoted to exhibiting 'the Power, Wisdom and Goodness of God as manifested in the Creation', made wholehearted appeal to the inspection of the world, and in particular to the marvellous aptness and functional effectiveness displayed by plants and animals. We all know the famous watch argument. A stone found on a heath calls for no particular explanation of how it came to be there, but the intricate contrivance of the mechanism of a watch, so evidently formed to fulfil a particular purpose, implies that if it were to be found lying on the heath, that would surely call for an explanation taking into account the activity of an intentional watchmaker. Richard Dawkins has expressed an admiration for Paley's efforts in his time. 'He had a proper reverence for the complexity of the living world, and he saw that it demands a very special kind of explanation. The only thing he got wrong – admittedly quite a big thing – was the explanation itself.'² So begins *The Blind Watchmaker*, as it launches into its account of evolutionary biology. Although David Hume had already presented a strongly expressed philosophical critique of the kind of argument deployed by the proponents of a 'physico-theology' (as Paley's great forerunner John Ray would have called this kind of natural theology), it was the discovery of an alternative scientific explanation of the intricate structures of living beings that really drew the rug from beneath much of the detailed argument presented in Paley's *Natural Theology* (1802). In his publication of the *Origin of Species* in 1859, Charles Darwin succeeded in showing how the patient accumulation of small differences (arising from a process that Darwin himself could not explain but which, through the initiating work of the monk Gregor Mendel, is now understood to be the result of genetic inheritance with variation due to mutations) and the sifting of these differences through a process of natural selection (depending on differential survival and gene propagation in a given environment), could lead over long periods of time to the appearance of 'design' without any need for the direct intervention of a Designer.

For a century following Darwin, natural theology fell into decline in its traditional Paley-esque form, seemingly made redundant by scientific advance, and theologically frowned upon by Barthian disapproval of any claim of access to knowledge of God other than through the revelation of the divine Word. Yet, if the Word is the one 'through whom all things were made, and without whom was not anything made that was made' (John 1:3), could one not expect something of God's nature to be discernible in the natural world? Paul certainly seemed to have thought so when he wrote that 'Ever since the creation of the world [God's] eternal power and divine nature, invisible though they are, have been seen and understood through the things he has made' (Romans 1:20).

I believe that we are living today in a third period of intense activity in nat-

2 Dawkins, R. *The Blind Watchmaker*, Longman (1986), p.4.

ural theology. Yet, while the discourse has been revived, the modern form of its argument has also been significantly revised. The revival that has taken place has been more at the hands of the scientists than of the theologians, and not just pious scientists such as the present writer, but also at the hands of those who, like Paul Davies, stand outside any formal religious tradition.³ The revision that has accompanied this revival reflects a clearer understanding of the status of natural theology and of its relationship both to science and to a theology that looks to revelation for its fundamental basis.

The new natural theology does not claim to possess ‘proofs’ of God’s existence of such logical force that it would be irrational to deny them. Anselm had partly been inspired to seek his ontological argument because he had read in the Psalms (14 and 53) that ‘The fool has said in his heart, there is no God’, and so he thought that atheism must be an incoherent belief. Today, after Kurt Godel and much philosophical emphasis on the subtlety of the motivations for belief, we are much more wary of claims to possess absolutely logically coercive arguments, either in science or in theology. The thesis that I would defend about theistic belief is not that it is logically inevitable, but that it gives us the deepest and most satisfying *insight* into the way the world is. It is not that our atheistic friends are stupid – far from it – but that atheism explains less than theism can. I shall shortly give some examples of what I mean by this claim.

An important further aspect of the modern revision concerns how science and theology are understood to relate to each other. With the benefit of hindsight, one can see that Paley and his colleagues were often trying to take scientific questions (how did the structure of the eye form?) and give them theological answers (a craftsman Creator designed it). Of course, at a time when belief in the fixity of species was conventional and the long timescales that had actually been available for terrestrial developments were far from being fully appreciated, it required someone of the genius of Darwin to see that there was the possibility of offering a scientific account of the gradual development of the fruitful complexity of life. Today we have good reason to expect that scientifically posable questions will receive scientifically stutable answers, even if some of those answers (such as an account of the origin of life) may be very hard to find. In that sense, science operating in its own domain needs no assistance from theology. Yet science has purchased its great success by the modesty of its ambition. The questions that an honest science is able to address are quite limited, and we have every reason to believe that there are many other questions that are meaningful to ask, and necessary to seek to answer, that lie outside the scope of a self-limited science. Interestingly, some of these questions arise from the actual human experience of doing science, but their character is such that they raise issues that lie beyond science’s intellectual frontier. The claim

³ Davies, P.W. *God and the New Physics*, Dent, 1983; *The Mind of God*, Simon and Schuster, 1992. For a Christian approach, see, Polkinghorne, J.C. *Science and Creation*, SPCK, (1988), chs 1 and 2; *Reason and Reality*, SPCK/Trinity Press International, 1991, ch. 6.

of the new natural theology is that theistic belief affords coherent and intellectually satisfying answers to some of these 'meta-questions' (questions that take us beyond science itself).

The new natural theology is not only modest about its relationship to science, but it is also modest in its account of its relationship to the total body of theological thought. If the kind of argument it deploys is given its maximum force, by itself that can only lead to a rather etiolated concept of God, such as the Architect of the Universe or the Great Mathematician, ideas as consistent with the distant God of deism as they are with the providentially active God of theism. Appeal to the exercise of reason and the general inspection of the world can only offer limited resources for theological investigation and so it can only lead to limited theological insight. If there is indeed a God who is concerned with individual creatures, that kind of 'personal' God can only adequately be known through the particularity of revelatory events and in the experiences of worshipful encounter and obedience. Christian theology can welcome the contemporary revival of natural theology, and benefit from it, but the essential ground of its belief will always lie in the irreplaceable uniqueness of the history of Israel, and the life, death and resurrection of Jesus Christ. Having said that, one should also acknowledge that natural theology helps the believer to set basic Christian belief in the context of wider human culture and knowledge, and that it can also play an apologetic role in encouraging an honest enquirer to put the issue of God onto the agenda of possibility.

It is time to consider the actual content of contemporary natural theology. Much of it centres on addressing two important metaquestions. The first of these may sound deceptively simple, for it is *Why is science possible at all?* We take science's astonishing ability to penetrate the secrets of nature so much for granted that we seldom stop to realise how remarkable a fact this is. Of course, one can see the evolutionary advantage of gaining a rough and ready understanding of the everyday process of the world. If one could not figure out that it is a bad idea to step off the top of a high cliff, one might not be around for very long. But our ancestors' need for this prudential knowledge does not explain how someone like Isaac Newton could come along and, in an astonishing creative leap of the human imagination, see that the same force that made the high cliff dangerous was also the force holding the Moon in its orbit round the Earth, and the Earth in its orbit round the Sun, discover the mathematically beautiful law of universal inverse square gravity, and so be able to explain the behaviour of the whole solar system. And about two hundred years after Newton, Albert Einstein comes along and, in another great creative leap, discovers general relativity, a feat that enabled him to attempt to articulate the first truly scientific account of the universe itself. Something is going on here which totally transcends the mundane necessities of successful survival, or that could be considered with any degree of plausibility as simply being a spin-off from such necessities. You may recall that when Sherlock Holmes and Dr Watson first meet, the great detective is (I believe) pulling the good doctor's leg from the start and he pretends not to know whether the Earth goes round the

Sun, or the Sun goes round the Earth. When Watson expresses horror at this apparent deplorable ignorance, Holmes simply says, 'What does it matter for my work as a detective?' Of course, it does not matter at all, but it is given to humans to know many remarkable things of no immediate practical consequence, and to understand many regimes, such as the world of quantum mechanics, whose behaviour is wholly counterintuitive in terms of thinking derived from ordinary direct experience.

And, in fact, the mystery of science is even deeper than that, for it turns out that in fundamental physics the key that unlocks these deep cosmic secrets is that most abstract-seeming of disciplines, mathematics. It is an actual technique of discovery in fundamental physics to seek theories that in their mathematical expression are characterised by the unmistakable property of mathematical beauty. Like most forms of beauty, the mathematical variety is easier to recognise than to describe, but it involves qualities such as elegance and economy and something that the mathematicians call being 'deep', meaning that quite simple-looking expressions turn out to have extensive and striking consequences. The physicists' pursuit of mathematical beauty is no mere indulgence in aestheticism, for it has turned out time and again that only theories with this property will manifest the long-term fruitfulness that persuades us that they are truly describing aspects of physical reality. Paul Dirac, who was one of the founding figures of quantum theory and undoubtedly the greatest British theoretical physicist of the twentieth century, once said that it is more important to have mathematical beauty in one's equations than to have them fit experiment! Of course, he did not mean that empirical adequacy was not important in physics, but if at first sight you did not seem to have achieved it, there were at least some possible ways of saving the day. Almost certainly the equations would have had to be solved in some approximation, and maybe you had made the wrong approximation. Or maybe the experiments were wrong – this does occasionally happen in physics. But if the equations were ugly ... well, there was just no hope! Dirac made his many great discoveries by a lifelong and highly successful quest for mathematical beauty.

Now when scientists use abstract mathematics in this way to make discoveries about the physical world, something very strange, and surely very significant, is happening. What is it that links so fruitfully the thoughts of our minds (mathematics) with the deep structure of the world around us (physics). Dirac had a brother-in-law, Eugene Wigner, who also won a Nobel Prize for physics, and Wigner once asked 'Why is mathematics so unreasonably effective?'

To ask why science is possible, and why mathematical beauty is so effective a guide to discovery, is to raise questions that come out of the experience of doing science but which go beyond its unaided power to answer. Scientists, as scientists, are simply glad that this is so and they are happy to exploit the opportunities it offers. On the other hand, if we are people imbued with a thirst for an understanding as complete as possible, we would be incredibly intellectually lazy if we simply said 'That's just the way it is, and a bit of luck for you

chaps who are good at maths.’ The metaquestion concerning why science is possible demands a more fitting response than that, and I believe that the majority of my colleagues in theoretical physics take the issue that it points to with real seriousness.

Deep questions of this sort do not lend themselves to simple knock-down answers of a logically inescapable kind, but I believe that theism offers a persuasive and coherent response to understanding the origin of the deep rational transparency and deep rational beauty that physics has discovered at the basis of the universe. Theology sees the reason within (human thinking) and the reason without (the order of the physical world) as having a common origin in the Mind of the Creator, whose will is the ground of both our mental capacity and our physical experience. The new natural theology suggests that science is possible, and mathematics is so unreasonably effective, just because the universe is a creation and human beings are, to use an ancient and powerful phrase, creatures made in the image of their Creator.

The second metaquestion is somewhat more specific. It asks *Why is the universe so special?* Scientists do not like things to be special. They prefer the general to the particular. Our natural inclination would have been to suppose that this universe is no more than a typical specimen of what a cosmos might be like, the expectation being that we live in what might more or less be called ‘any old world’. However, the great progress made by cosmologists in understanding the processes that have operated in the unfolding history of the universe, has shown us that this is very far from being the case. The world as we know it originated in the fiery singularity of the big bang some 13.7 billion years ago. It all began very simple, for the early universe was an almost uniform, expanding ball of energy – just about the simplest physical system that you could imagine. Today the universe is rich and differentiated, with human beings the most complicated consequences of its long evolving history that are known to us. While it seems to have taken about ten billion years for life to originate, and our sort of self-conscious life only happened yesterday in cosmic terms, there is a very real sense in which the universe was pregnant with life from the earliest times. That is because we have come to see that the given physical fabric of the world – the form and strengths of the forces of nature, that science has to assume as the unexplained basis of its subsequent account of detailed physical process, and which specify the character of our universe – had to take a very specific form if the emergence of carbon-based life anywhere was to be an eventual possibility. One might say that the universe has been discovered to have been ‘fine-tuned’ for life from the very beginning.

This is such an important and surprising discovery, that I would like to sketch just a few of the many considerations that support the conclusion. For a fertile world it is very important to get the stars right. They have two indispensable roles to play in the emergence of life. One is simply to fuel its development. The three to four billion year history of terrestrial life has been made possible by the reasonably steady shining of our local star, the Sun, providing

the requisite source of energy. Quite small changes in the strengths of natural forces would have so altered the character of the stars that they would either have burnt too feebly to be much use, or they would have burnt so fiercely that they would have exhausted themselves too quickly to support the slow development of life on an encircling planet.

There is a second role for the stars to play, for it is in their interior nuclear furnaces, and in the death throes of a stellar supernova explosion, that the chemical raw materials of life are actually made. All living beings on earth are creatures of stardust, made out of ashes of dead stars. The very early universe is too simple to make anything more complicated than hydrogen and helium, elements that together have too boring a chemistry to be of any use on their own. The more than twenty further elements needed to get life going, including carbon itself, have to come from the stars. The chain of nuclear reactions that produces these elements is so beautifully and delicately balanced that small changes in the nuclear forces would have broken vital links and thus rendered carbon-based life impossible.

The most exacting of all the limits on the strength of the forces of nature necessary if life is to be a possibility, relates to something called the cosmological constant, the measure of a type of energy associated with space itself. Its value is incredibly small, being 10^{-120} of what one would think of as its naturally expected value. However, had the cosmological constant been any larger, the universe would either have been blown apart, or collapsed altogether (depending on the sign of the force, repulsive or attractive), with incredible rapidity, thus rendering its history totally fruitless.

Even the vast size of the universe is an essential requirement for a life-generating world. Our galaxy, the Milky Way, contains a hundred billion stars, and it is just a perfectly ordinary galactic specimen among the hundred billion galaxies of the observable universe. Sometimes we may feel daunted at the thought of the enormous cosmos of which we are part, wondering if there could possibly be any significance attaching to the inhabitants of what is no more than a speck of cosmic dust. It would be a foolish mistake to equate size with significance – remember that Pascal said that human beings are greater than all the stars, for we know them and ourselves and they know nothing – but in any case, if all those trillions of stars were not there, we would not be here to be upset at the thought of them. There is a close connection between how big a universe is and how long its history can last. Only a universe at least as big as ours could endure through the fourteen billion years or so required to produce entities of our complexity.

Many more considerations of a similar kind could be given, all pointing to the very specific character necessary in the given laws and circumstances of a universe if it is to be capable of developing carbon-based life. Of course, the actual processes that turned the initial ball of energy into the home of saints and scientists were evolutionary in their character, not only in the case of the development of terrestrial life, but also in the earlier growth of the cosmic

structure of stars and galaxies. Yet that evolving exploration of potentiality depended for its fertility upon the fine-tuning of the physical fabric of the world in which it took place. If the evolutionary interaction of 'chance' and 'necessity' is to prove fruitful, the necessity has to take a very particular form. Without the fine-tuning, there would be no potentiality to be explored. This insight is often called 'the anthropic principle', the recognition that a world capable of generating *anthropoi* (of course, not necessarily literally *homo sapiens*, but beings of our degree of complexity) is a very special universe indeed.

All would agree with these scientific conclusions, but there is considerable disagreement about what further metascientific consequences, if any, might be drawn from them. Broadly speaking, three different kinds of response have been advocated. One simply notes that if the universe had not been hospitable to the development of carbon-based life, we would not be here to talk about it, so why not treat fine-tuning as simply a fortuitous brute fact about the world? To many, including myself, this seems too supine an attitude to take in the face of a very remarkable set of insights into the structure of the world. Fine-tuning seems to call for a deeper response than just treating it as inexplicably being the case.

A second approach has sought to remove astonishment at the remarkable specificity of our universe by incorporating it in a greatly extended portfolio of physical reality. If there were very many other different universes, all with their different physical laws and circumstances and all, of course, beyond our direct observation, then ours simply would come to be seen as the one where by chance things are favourable to carbon-based life – a winning ticket in the multi-cosmic lottery one might say. While there are various speculative notions claimed to encourage the idea of such a multiverse, the scientific inaccessibility of this vast collection of other worlds makes the idea in actual fact a metaphysical guess of a truly prodigal kind.

For some, one of the attractions of the multiverse proposal might seem to be that it defuses the threat of theism, as represented by the third approach that looks to natural theology for its explanatory principle. If the universe is not just 'any old world' but a creation that has been endowed by its Creator with the given potentiality necessary for a fruitful history, then the fine-tuning of its laws and circumstances becomes immediately intelligible.

As with all metaphysical issues, there is no conclusive, knock-down argument that will establish with absolute certainty which of these views should be adopted. However, natural theologians can point out that seeing the world as a divine creation does a number of additional pieces of explanatory work, such as making sense of the universe's deep intelligibility and also pointing to the origin of the widely-testified human experience of encounter with the dimension of sacred reality, while the multiverse hypothesis only seems to do one piece of such work in explaining, or explaining away, fine-tuning.

I think that William Paley would have been deeply interested in the new

natural theology. Although much of his own book *Natural Theology* is taken up with discussion of what were then seen as evidences of design in the forms of living entities, there is also some consideration in the book of physics and the laws of nature. A religious feeling of awe at the beautiful structure of the physical world is at least as old as Newton's thoughts expressed in the General Scholium to his great work, the *Principia*. The kind of anthropic insights that we have been discussing here were not, of course, available to Paley, but he did include an interesting argument relating to the given circumstance that space is three-dimensional in our world. Paley realised that this was a fact of significance for the possibility of life and fertility. If space had been four-dimensional, for example, gravity would have decreased as the inverse cube of the distance, rather than our inverse square law. That change in the character of gravity would have made planetary orbits unstable, and the continued existence of the solar system would have been in continual jeopardy. Paley saw the actual dimensionality of space as an expression of the beneficent will of the Creator.

The new natural theology does not seek to rival science in the latter's role of seeking to understand the detailed processes of the world. Instead, it looks for its fundamental basis to those aspects of the world that science is unable to explain because it simply takes them for granted, but whose character is such that it seems intellectually unsatisfying to treat them as requiring no further explanation. Thus natural theology is able to place science's laws of nature in a wider context of intelligibility. Thus it and science can be understood as being in a complementary relationship to each other, rather than in conflict. The religious believer may claim that the combination of the two affords a more profound insight than either would provide on its own.

One may also see the discovery of the indispensable role of anthropic fine-tuning as answering a criticism made by Hume concerning the arguments of the old-style physico-theology. He saw the latter as being unsatisfactorily anthropomorphic, seeming to talk about a craftsman Creator who made the world in much the same way as workmen make a ship. If the true gift of the Creator is bringing into being a world whose fundamental physical fabric is endowed with the kind of intrinsic potentiality that we have been discussing, that is an act very different from any human crafting of existing material. In the Hebrew Bible there are two words used for 'making', one of which (*asah*) simply refers to any form of fashioning, but the other (*bara*) is reserved to God alone. It is this second form that is surely in mind when the Creed speaks of God as 'the Maker of Heaven and Earth'.

In Western thinking there have been two basic strategies for metaphysical construction. Nothing comes of nothing, and any general account of the nature of reality will have to have its unexplained basis on which the argument rests. The two metaphysical approaches differ in their choice of what that basic assumption should be. A materialist strategy takes the laws of matter as its assumed starting point. This is the approach that Thomas Hobbes and David Hume urged upon their readers. Our discussion has shown that the laws of

nature as discerned by modern science have about them such a degree of deep transparency and mathematical beauty, and they possess such a degree of intrinsic potentiality, that they can be seen to point beyond themselves in a manner that makes their assumption as pure brute fact intellectually unsatisfying. The alternative approach is the assumption that the expression of the will of a divine Agent provides the most satisfactory basis for understanding the way the world is. Of course, this approach is the one that is made by the new natural theology, which sees the wonderful order of the world as an expression of the Mind of the world's Creator, and the fruitful history taking place within its finely-tuned context as being the fulfilment of the purposes of the Creator's Will.

So far, the science to which we have been appealing has been physics. Biological process is much more complex in its character and so it is correspondingly more difficult to establish the detail of any fine-tuning that might be necessary for it. The task is not altogether impossible – for example the very remarkable properties of water seem to be essential to the way living beings function, and these must derive from the particular form of the inter-atomic forces that determine how water molecules interact.⁴ However, biology is not only more complicated than physics, but the story it has to tell is also much more ambiguous. Physicists are deeply impressed by the wonderful order that they are privileged to investigate, but the biologists have a much messier tale to tell, with its mass extinctions, parasitisms and predatory competition for limited resources. Evolution has its failures as well as its fruitfulness. The problem of natural evil presents a severe challenge to any form of natural theology. In *Dialogues concerning Natural Religion*, David Hume made the point with characteristic force, suggesting that the world might seem to be no more than a rude attempt by an infant deity, and asking 'How many worlds might have been botched and bungled, throughout an eternity, ere this system was struck out?' The problem of evil and suffering is a very real one, doubtless deterring many from religious belief and continually troubling those who are believers. Natural theology cannot flourish unless it is able to make at least some kind of response on the issue of theodicy, the need to justify the Creator in the face of the way that the creation is actually found to be.

It would be wrong to suggest that there is some simple way of dealing with this critical issue, as if a few wise words would be sufficient to dispel all perplexity. Yet, science can be of some mild assistance to theology as it wrestles with the problem of natural evil. Interestingly enough, it is Darwinian insight that provides that help. Every strategy of theodicy has to take the form of seeking to understand the dark side of creation as being the inescapable cost of the presence of a greater good within that same creation. Just such a claim can be made for evolutionary process.

4 See, for example, Denton, M.J. *Nature's Destiny*, Simon and Schuster (1998).

The commonly held view, that when the *Origin of Species* was published all the scientists welcomed it and all the religious people were opposed to it, is historically just plain ignorant. There was a mixed reaction on both sides, and some clergymen welcomed Darwin's insights from the start. One of these was Charles Kingsley, who coined the phrase that perfectly expresses the theological way to think about the fact of an evolving creation. He said that no doubt God could have brought into being a ready-made world, but it had turned out that the Creator had done something cleverer than that in making a creation in which 'creatures could make themselves'. The evolutionary process of the shuffling exploration of intrinsic potentiality corresponds to the divine gift of a due degree of independence to creatures. The gift of love must always take the form of a letting be, for the God whose nature is love cannot be the Cosmic Tyrant who pulls every string in a creation that is no more than a divine puppet theatre.

A creation in which creatures make themselves is a greater good than a ready-made world would have been, but it has a necessary cost. The shuffling exploration of inherent potentiality cannot but be a process which, despite much fruitfulness, also has blind alleys and ragged edges in it. The engine that has driven the evolution of terrestrial life has been genetic mutation, but if germ cells are to be able to mutate and produce new forms of life, it is inevitable that some somatic cells will be also able to mutate and become malignant. The presence of cancer in the world is an anguishing fact, one that is not simplistically explained away by this insight but which is at least seen not to be gratuitous, as if it were something that a Creator who was a bit more competent or a bit more compassionate could easily have eliminated. It is the shadow side of the process that has carried life up from the level of bacteria to the level of self-conscious beings. It is the necessary cost of a world in which creatures make themselves.

Natural theology is an intrinsically limited exercise that affords valuable, if only partial, insight into the remarkable world of which we are inhabitants. It flourishes today, not because it provides complete and unquestionable answers to all the questions it addresses, but because it can claim to do a better job of giving insight into the fundamental nature of reality than is the case for natural atheism. William Paley was on the right track, even if we need to revise some of the details of his argument. The universe is too rich in its intrinsic order and fruitfulness to be regarded as merely a brute fact or a happy accident. It is most fittingly understood as the creation of the living God.

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