

faith

NOV/DEC 2005
volume 37 number 6

The Cardinal, the Pope and the Scientists	2
<i>Editorial</i>	
The Boyle Lecture 2005	
"Darwin's Compass: How Evolution Discovers The Song of Creation"	8
<i>Prof. Simon Conway-Morris</i>	
Science and Theology in a Trinitarian Perspective	20
<i>Prof. John Polkinghorne</i>	
Scientists: Humble or Arrogant?	28
<i>Dr. Peter Hodgson</i>	
Letters	30
<i>To the editor</i>	
Sunday by Sunday	32
<i>Our regular guide to the Word of God in the Sunday Liturgy</i>	
Book Reviews	35
<i>Dwight Longenecker admires an intelligent philosophical exploration of the position of religion in contemporary society; Alan McClelland on helpful insights into the early life of the inspirational founder of Opus Dei, St Josemaria Escriva; and Fr Timothy Finigan casts a critical eye across a pastoral guide to understanding the Mass prepared by the Bishops' Conference of England and Wales.</i>	
Notes From Across The Atlantic	40
<i>A survey of religious and public life in America by Richard Neuhaus</i>	
Cutting Edge	43
<i>A special feature keeping us up to date with issues of science and religion</i>	
Faith Online	44
<i>Highlighting Catholic resources on the World Wide Web</i>	

Editor

Hugh MacKenzie
St. Mary Magdalene's
Clergy House,
Peter Avenue,
Willesden Green,
LONDON NW10 2DD
Tel 020 8451 6720
editor@faith.org.uk

Editorial Board

David Barrett, Patrick Burke,
Timothy Finigan, Roger
Nesbitt, Christina Read,
Dominic Rolls, Luiz Ruscillo

Book Reviews

William Massie
187 Pickering Road,
Baxtergate,
HULL HU4 6TD
reviews@faith.org.uk

Advertising Manager

Luiz Ruscillo
St. Mary,
59 Main Street,
Hornby
LANCASTER LA2 8JT
015242 21246

Subscriptions Office

Paul Butcher
16a off Coniston Way,
REIGATE RH2 0LN
01737 770016
fax 01737 766907
subscriptions@faith.org.uk

Faith-Keyway publications

16a off Coniston Way
REIGATE RH2 0LN
01737 770016
fax 01737 766907

JESUS CHRIST IS THE MASTER KEY TO THE MEANING OF THE UNIVERSE

The Cardinal, the Pope and the Scientists

"If they had the power to know so much that they could investigate the world, how did they fail to find sooner the Lord of these things?" (Wisdom 13,9).

"Cardinal Schönborn has pointed out that there is no contradiction between evolution and Catholicism, because there is no contradiction between science and the concept of finality."

Science And The Magisterium, A New Controversy

His Eminence Cardinal Schönborn managed to spark off a media storm recently when he published an article in *The New York Times* ("Finding Design in Creation", 7 July 2005) on the subject of Catholic doctrine and the theory of evolution. The primary focus of his piece was to correct the misinterpretation of statements made by Pope John Paul II on the subject of evolution at various times. These have apparently been taken by some as uncritical acceptance of the neo-Darwinian version of evolution. The Cardinal wrote that the idea of a common ancestry for living things is not at all contrary to Catholic orthodoxy, but that the idea that life on earth has developed by pure chance and contingency is not compatible with Christian faith.

The reaction to this intervention in the secular and religious press has dramatically underlined the need for clarity and development in this debate. His remarks have been greeted with dismay by some scientists and theologians who see it as a retreat from what they had indeed presumed was acknowledgement by the Church of neo-Darwinism in every respect. By the same token, the Cardinal's views have been greeted with corresponding glee by some who espouse creationist views. They have taken his article as evidence of support for their position from Church authority.

In the secular media, especially in the UK, the Cardinal's intervention has been portrayed as part of a supposed conservative backlash, even as some sort of distancing from the thinking and policies of John Paul II vis a vis modernity. This is not only invidious but clearly inaccurate, since the Cardinal quotes extensively from John Paul II's own careful words on the subject. To any objective reading it is clear that the late Pope, indeed the present Pope, and the Cardinal are one on this matter.

Neither Creationism Nor Darwinism

The problem is that both creationists and neo-Darwinians take it for granted that the idea of common ancestry to living things and that of a fundamentally random and directionless world are inseparably intertwined. Creationists therefore reject evolution altogether as an un-Christian worldview, while neo-Darwinians insist that this is the only possible mechanism for evolutionary change. Both the Cardinal and the late Pope, on the other hand, clearly think that it is not only possible, but scientifically sound and philosophically coherent, as well as theologically acceptable, to hold a synthetic position that accepts evolution but not randomness. In fact they point out that the picture of a world that develops through pure contingency and randomness, with no overall purpose or direction, is not compatible with the vast interlocking unity of organic forms that have grown together in sequential and progressive development, which is what they seem to mean by "evolution" and "common ancestry".

We have a great deal of sympathy with the Cardinal. In Faith Magazine we too have been seeking to expound and develop just such a synthetic view for decades. Not

only do we regard such a synthesis as possible, but urgently necessary. Once again, the current furore has highlighted how the issue of science and religion is not a theological side-show of special interest to a few, but at the very heart of the credibility of religion in the twenty-first century.

In Search of Synthesis: The Flaws In "Process Theology"

The debate has become further complicated in recent years by some emerging schools of thought which are prepared to give ground from either side of the Darwinian/Creationist divide, but which still fail to satisfy either doctrinal orthodoxy on the one hand or scientific and philosophical coherence on the other.

On the neo-Darwinian side we find theologians who are happy to concede that the material universe operates largely by randomness and indeterminacy. They argue that this leaves room for creaturely freedom and for God's creative action. Some of these thinkers are much influenced by Process Theology - the idea that "God" changes and develops along with the Creation - God is not so much an omnipotent Creator as an orchestrator of energies, standing back and allowing creatures to experiment with their own existence, occasionally nudging and encouraging growth in more fruitful directions.

Teilhard de Chardin was more thoroughgoing and systematic than this. He saw the Godhead immersing itself within the energies of creation as a "radial" principle of upward yearning and developmental drive that runs through everything. He spoke of "directed chance" as the motor of creative evolution as it haltingly found its way into progressively higher spheres of activity, culminating in the Omega Point of the "Christosphere".

In the end this will not do as a synthesis of Science and Catholicism. From the theological point of view it reduces to pantheism and it also makes nonsense of the mathematical sciences. If there is freedom of choice and personal ambition, however minimal, in every sub-atomic particle, then there could be no mathematical formulae or physical laws to describe their activity, as we know there are.

Misunderstanding And Misuse Of Quantum Physics

Fans of this sort of thinking often cite Quantum Physics and the Uncertainty Principle and the more recent "chaos theory" as evidence of creative latitude and freedom at work in the foundations of matter. This shows a basic misunderstanding of these scientific insights, which are really about the inherent difficulty of measuring precise parameters of space and time when dealing with

the very smallest energy/particles or with very complex systems. These particles are in fact part of highly ordered systems with precise - even if complex and hard to grasp - mathematically expressible boundary conditions. It's not that subatomic particles have some level of freedom to do as they wish or be creative. Far from it! Any hint of real choice or absolute randomness at the heart of matter would make even Quantum Physics impossible. It's just that below a certain threshold, these tiny energy packets are not really thinkable except as part of the bigger systems to which they contribute. As one of the fathers of modern physics, Louis de Broglie, wrote;

"In Quantum Physics the system is a kind of organism, within whose unity the elementary constituent units are almost reabsorbed. When forming part of a system, then, a physical unit loses a large measure of its individuality, the latter tending to merge in the greater individuality of the system ... To make a real individual of a physical unit belonging to a system, then, it is necessary to break the links which bind it to the total organism. If this is understood, we can also understand the way in which the concepts of the individual unit and the system are complementary: the particle cannot be observed so long as it forms part of the system, and the system is impaired once the particle has been identified." (L. de Broglie, *Matter and Light*, eng.translation Allen and Unwin, London 1939)

De Broglie was one of those truly great scientific minds who are also philosophers. He saw that the variables and therefore the variability which characterizes individual components do not mean that the system as a whole is based on randomness. Lower units build into unified systems and "law" runs through it all. These laws of science are far more than just our human way of accounting for regularity and repeatability in observed systems. They express - even if our grasp of them is only as partial approximations - the organisation and dynamics of matter/energy itself. They sum up the in-built relativities that specify the potentialities of material units towards each other and direct the combinations that bind them together into higher unities, as well as the further upbuilding of organised systems into yet higher systems.

False Evolutionary Philosophies And Moral Relativism

The point is that it is simply bad science to try to introduce some pseudo-mystical notions of freedom and creativity into the foundations of matter. Theologically speaking, this sort of world-view empties out historic and doctrinal Christianity too. For if everything - even God - can mutate in truly open ended ways, then there can be no absolutes, there is no fixed point against which truth or goodness - or even organic

progress for that matter - can be measured. Nothing transcends the endless flow of restless change to define its limits and set its goals. It is no surprise that it is those inside the Church who wish to abolish the language of transcendence and absolutes who have shared the dismay of neo-Darwinians about Cardinal Schönborn's publicly expressed views. They were happy to live with the idea of indeterminacy at the heart of creation and were wrongly co-opting John Paul II to their cause, at least in the matter of evolution. They saw it as a way to bolster their vision of relativism in moral matters too.

"Intelligent Design", A New Creationist Perspective

Then from the opposing perspective, we have seen the recent development of the so called "Intelligent Design" school of thought, qualifying the creationist position. The name sounds appealing to true believers and is certainly an attempt to put in some much needed correctives to Darwinian theory without throwing out the baby with the bath water. However, we believe it to be equally inadequate as a synthesis, although orthodox in intention.

John Calvert of the Intelligent Design Network succinctly sums up the central thesis of Intelligent Design as follows:

"If a highly improbable pattern of events or objects exhibits purpose, structure or function and can not (sic) be rationally explained by the operation of the laws of physics and chemistry or some other regularity or law, then it is reasonable to infer that the pattern was designed - the product of a mind." (Quotation at: <http://www.intelligentdesignnetwork.org/legalopinion.htm# Section2.32>)

The main problem with this is the addition of the qualification about things that "can not be rationally explained by the laws of physics or chemistry". Effectively this concedes the point to atheists that most of the operation of matter - that which is explicable on the ordinary functioning of the laws of science - does not exhibit intelligent design! Presumably, therefore, it is not 'reasonable to infer that it is the product of mind'.

This way of thinking discerns God's creative involvement only in certain exceptional structures, as if he intervened only at certain moments in creation and that the "design" produced by "intelligence" must somehow be outside the workings of "regularity" and law.

ID Misses The Bigger Picture

Ultimately therefore, this sort of thinking shows a remarkable similarity of principle to the sort of

Process Theology which we criticized above. It is also really a God-of-the-gaps philosophy - only invoking God to deal with the inexplicable and irrational. It is really no wonder that scientists are dismissive of these theories. A fierce political and legal debate is currently raging in the USA as to whether "Intelligent Design" (ID) theory should be taught alongside neo-Darwinism in state schools and supporters of ID, such as Michael Behe, have not been slow to claim Cardinal Schönborn as one of their own. We think they are mistaken.

Schönborn spoke of the "immanent design evident in nature" as a whole, and of the "overwhelming evidence for purpose and design found in modern science", not just in some especially complex structures. The key concept he highlights is not so much "design" in the sense of complexity and beauty, but rather that of "internal finality", by which he means final cause, purpose and direction which is inherent in all being and throughout the creative process. He quotes John Paul II from a 1985 general audience as follows:

"All observations concerning the development of life lead to a similar conclusion. The evolution of living beings ... presents an internal finality which arouses admiration. This finality, which directs beings in a direction for which they are not responsible or in charge, obliges one to suppose a Mind which is its inventor, its creator."

"To all these indications of the existence of God the Creator, some oppose the power of chance or the proper mechanisms of matter. To speak of chance for a universe which presents such a complex organization in its elements and such marvellous finality in its life would be equivalent to giving up the search for an explanation of the world as it appears to us. In fact, this would be equivalent to admitting effects without a cause. It would be to abdicate human intelligence ..."

Notice that John Paul II speaks not of this or that structure within creation manifesting such a complex unity that it must be the work of mind, but rather of the entire universe. Also that the universe manifests a relationship to a creating Intelligence, not because it is an exception to the laws of science, but precisely because it is framed through laws that hold its elements and organisms together in such a "complex organization" and such "marvellous finality".

A New Synthesis

This is a truly synthetic position which is neither Darwinian nor Creationist. It is also one that is familiar to readers of Faith. Fr. Edward Holloway thought

out in considerable depth this perception that the universe and everything in it is organized as a complex of mutually causative unities towards a unified end. He called this truth the Unity Law of Control and Direction, and through this insight he saw that we can re-vindicate the transcendence of God and of a world made for Christ in this age of science. In *Catholicism: A New Synthesis* (1969) he wrote:

"Cosmic Evolution does not begin with life. It includes it, but begins with the development of the atomic elements, the molecule, the aggregation of molecules, the complex organic compounds such as amino-acids etc...If we wish to find a clue to the basic mechanism of the evolution of the living, let us begin in the beginning, because all the complexity that comes later is built up on these same building bricks. Let us look for a common underlying factor of process which underpins the structure of Nature.

"By no stretch of the imagination can one refer to the synthesis of the heavy atomic nuclei on the basis of the hydrogen nucleus (or whatever concept now refines that knowledge) as the 'natural selection' of 'random mutations'. It is development through equational energy-relationships. The law is mathematical and is reproducible in the laboratories of mankind...Yet they are part of the process of life, and it is very clear that they come into existence not by 'chance' but by the necessary environmental interplay of the stage immediately preceding them...

"In order to explain Evolution up to mankind we do not need to invoke animism, ... but it is neither atheist nor antithetical. It is the 'Law of Control and Direction'... (which) is not truly distinct from the energies and natural forms of the universe themselves except in so far as it is the totality of them in their ever universal and causal relationship in which they are members one of another. As this totality, also, they are centred dynamically on an Absolute which is not part of the series... ie. the Absolute Being that is outside the series, outside of space and time, and whose Present Now, spans all spaces and all times because IT IS. So the Law of Control and Direction ... is the sum and concatenation of all material energy and its forms, one to another, ever centred upon God...

"There is nothing 'random' about this process. At a first superficial glance there may appear to be, but this is because the total relationships of the universal law are not perceived. That which selects is itself ... a selecting principle. It is, in any case, too narrow a concept to speak only of 'selection', for the influence of being upon being under the equational law is

formative and creative also. It prompts the coming to be of new forms in evolution. The influence of the environment as a prompting influence is coming to be recognised. It will be found, I suggest, that neither Darwin nor Lamarck, nor Lysenko nor the Huxleys are entirely right or entirely wrong. A correct perspective will see elements of the theories of all in a total synthesis of equational law...

The equation could not begin unless it were poised meaningfully to its historic progress, but neither could the higher unity be there as a unity, ... unless at all times the Equation and its potential were relative to the Necessity whose other name is God. To make the universe intelligible and the progression of higher being up to and including man intelligible, we have to say that: GOD IS A NECESSITY NOT ONLY OF METAPHYSICS BUT OF MATHEMATICS."

(*Catholicism: A New Synthesis* pp. 63 - 66)

Attempts To Explain Away The Fine Tuning

Many physicists have been approaching this very conclusion from their study of the laws of the Cosmos, noticing more and more the way they form a developmental unity. However some physicists, as Cardinal Schönborn also pointed out, have pulled back from the obvious conclusion by introducing ideas such as that of a "multiverse" - an infinite number of possible universes of which ours just happens to be finely tuned for the emergence of life. He also pointed out that it is an irrational hypothesis, which simply delays the conclusion - for a multi-verse is just a bigger uni-verse after all - and for which there is no empirical evidence whatever.

However few biologists have yet challenged the neo-Darwinian insistence on random mutation as the core of natural selection. Perhaps this is because biologists all too easily forget that their science rests on the foundation of the other material sciences. What they perceive as randomness is merely local variability within the vast, dynamic stability of the system as a whole.

Where There Is Control There Must Be Direction

Those biologists who do challenge neo-Darwinism, tend to enter the fray with the Intelligent Design Network. Perhaps this is for the same reason; that they fail to assess biology in the context of the total Cosmic picture. Evidence for transcendent intelligence and purposeful finality can be found through the whole of evolving matter. Neo-Darwinism is not just wrong in a few spectacular cases, but in its basic assessment of life and material being. The very idea of a "selection" process that is fundamentally "random" is surely oxymoronic, just like the idea of "directed chance"! In *Catholicism: A*

New Synthesis Edward Holloway tackles this point too: *'Chance' properly and philosophically so called... would imply that there was no meaningful link, no relationship of necessity or of finalism between one event or series of events, and what follows through them. In the true sense of the term then, the process of Evolution and the serial interdependence of complex natures cannot be ascribed to 'chance'.*

"This would make nonsense of experimental science. It would more obviously make nonsense of the exact, mathematical sciences, for chance in such a radical sense is incompatible with the notion of an equation in any sense of that word...

"This must be weighed when there is far too easy talk of evolution through 'random' mutation, because if constructive mutation is just as random as mutation through injury etc., then one must ask what sort of internal economy is it that guarantees the constructive mutation and its constant superiority and selection in survival?

"Natural Selection is invoked too much in the manner of the Fairy Godmother at the pantomime. The environment that selects is only other being, living and non-living. It is always in movement and mutation itself, and surely as 'random' in its inner principle as the 'other' that it selects. If not, why not? ...

"The whole concept of the mechanism behind 'random mutation' needs more thinking through and testing for coherence. Constructive mutations - at least those which are species-causing... reorganise and re-deploy either the entire organism of the life form concerned, or major facets of it. If the form of life concerned is to be viable, let alone be selected preferably, such reorganisation must have a relationship to the species in its environmental relationships, not simply to the individual. It is a new thing that has evolved, not a stronger individual of the old thing. There has been too narrow an insistence on the selection of the preferred individual as an individual. We have to think and speak of the species-preferability of a mutation, which, in order to be preferred, involves a parallel and simultaneous mutation of the total environment. There must be mutation in step, perhaps prompted by previous or parallel change. Is it all just 'random'? ... It means that we are back to the evolving equation and equations are not random." (ibid pp. 62 - 63)

The Challenge Of A New Way Of Thinking

Cardinal Schönborn has pointed out that there is no contradiction between evolution and Catholicism,

because there is no contradiction between science and the concept of finality, for to exclude finality from a system is to undermine the whole basis of material and organic inter-relationship and mutual causality which is at the heart of the scientific investigation of the world. Ultimately, he reminds us, that meaning and purpose are inseparable.

It makes no sense to invoke chance as the foundation of material processes, whether physical, chemical or biological, when science itself is born from the perception of finality - meaning, cause, purposeful behaviour determined by other beings. Neo-Darwinism admits at least the appearance of all this on the local level but denies any control and direction in the foundations of material being or in the totality of the evolving system.

Neo-Darwinism, therefore, is not just incompatible with sound faith, but also with the world that modern science is discovering, which displays such a remarkable unity and finality in its dynamic development - what is commonly called "evolution".

Needless to say we whole-heartedly agree with all of this, but there is much work to be done to elaborate this truth and deploy this synthetic position inside the Church, let alone among secular thinkers.

Converging Thought, A Time For Dialogue

In this issue of **Faith** magazine we are honoured to publish articles by three eminent Professors of science who are also Christian believers. These important essays, which include the text of this year's Boyle Lecture, show an encouraging convergence of thought with that of Pope John Paul II, and indeed with our own school of thought.

We do not necessarily concur with Professors Polkinghorne and Conway-Morris in every respect - notably regarding the assessment of consciousness in relation to evolving matter - but we believe this is a time for serious and informed dialogue and we welcome these lucid contributions.

If nothing else, the current debate has focussed even more sharply how Catholicism - indeed the whole of Christendom - desperately needs an updated philosophical and theological synthesis through which to expound the vision of God's creative purpose in Christ to the modern world. In all humility we continue trying to offer such a synthesis and we would point once again to the work of Fr. Edward Holloway as the inspired beginnings of that work.

We reproduce here the text of Cardinal Christoph Schönborn's article, for information and reference, with due acknowledgment to the New York Times.

FINDING DESIGN IN NATURE

EVER since 1996, when Pope John Paul II said that evolution (a term he did not define) was "more than just a hypothesis," defenders of neo-Darwinian dogma have often invoked the supposed acceptance - or at least acquiescence - of the Roman Catholic Church when they defend their theory as somehow compatible with Christian faith.

But this is not true. The Catholic Church, while leaving to science many details about the history of life on earth, proclaims that by the light of reason the human intellect can readily and clearly discern purpose and design in the natural world, including the world of living things.

Evolution in the sense of common ancestry might be true, but evolution in the neo-Darwinian sense - an unguided, unplanned process of random variation and natural selection - is not. Any system of thought that denies or seeks to explain away the overwhelming evidence for design in biology is ideology, not science.

Consider the real teaching of our beloved John Paul. While his rather vague and unimportant 1996 letter about evolution is always and everywhere cited, we see no one discussing these comments from a 1985 general audience that represents his robust teaching on nature:

"All the observations concerning the development of life lead to a similar conclusion. The evolution of living beings, of which science seeks to determine the stages and to discern the mechanism, presents an internal finality which arouses admiration. This finality which directs beings in a direction for which they are not responsible or in charge, obliges one to suppose a Mind which is its inventor, its creator."

He went on: "To all these indications of the existence of God the Creator, some oppose the power of chance or of the proper mechanisms of matter. To speak of chance for a universe which presents such a complex organization in its elements and such marvelous finality in its life would be equivalent to giving up the search for an explanation of the world as it appears to us. In fact, this would be equivalent to admitting effects without a cause. It would be to abdicate human intelligence, which would thus refuse to think and to seek a solution for its problems."

Note that in this quotation the word "finality" is a philosophical term synonymous with final cause, purpose or design. In comments at another general audience a year later, John Paul concludes, "It is clear that the truth of faith about creation is radically opposed to the theories of materialistic philosophy. These view the cosmos as the result of an evolution of matter reducible to pure chance and necessity."

Naturally, the authoritative Catechism of the Catholic Church agrees: "Human intelligence is surely already capable of finding a response to the question of origins. The existence of God the Creator can be known with certainty through his works, by the light of human reason." It adds: "We believe that God created the world according to his wisdom. It is not the product of any necessity whatever, nor of blind fate or chance."

In an unfortunate new twist on this old controversy, neo-Darwinists recently have sought to portray our new pope, Benedict XVI, as a satisfied evolutionist. They have quoted a sentence about common ancestry from a 2004 document of the International Theological Commission, pointed out that Benedict was at the time head of the commission, and concluded that the Catholic Church has no problem with the notion of "evolution" as used by mainstream biologists - that is, synonymous with neo-Darwinism.

The commission's document, however, reaffirms the perennial teaching of the Catholic Church about the reality of design in nature. Commenting on the widespread abuse of John Paul's 1996 letter on evolution, the commission cautions that "the letter cannot be read as a blanket approbation of all theories of evolution, including those of a neo-Darwinian provenance which explicitly deny to divine providence any truly causal role in the development of life in the universe."

Furthermore, according to the commission, "An unguided evolutionary process - one that falls outside the bounds of divine providence - simply cannot exist."

Indeed, in the homily at his installation just a few weeks ago, Benedict proclaimed: "We are not some casual and meaningless product of evolution. Each of us is the result of a thought of God. Each of us is willed, each of us is loved, each of us is necessary."

Throughout history the church has defended the truths of faith given by Jesus Christ. But in the modern era, the Catholic Church is in the odd position of standing in firm defense of reason as well. In the 19th century, the First Vatican Council taught a world newly enthralled by the "death of God" that by the use of reason alone mankind could come to know the reality of the Uncaused Cause, the First Mover, the God of the philosophers.

Now at the beginning of the 21st century, faced with scientific claims like neo-Darwinism and the multiverse hypothesis in cosmology invented to avoid the overwhelming evidence for purpose and design found in modern science, the Catholic Church will again defend human reason by proclaiming that the immanent design evident in nature is real. Scientific theories that try to explain away the appearance of design as the result of "chance and necessity" are not scientific at all, but, as John Paul put it, an abdication of human intelligence.

Christoph Schönborn, the Roman Catholic cardinal archbishop of Vienna, was the lead editor of the official 1992 Catechism of the Catholic Church.

The Boyle Lecture 2005

“Darwin’s Compass: How Evolution Discovers the Song of Creation”

Simon Conway-Morris

Simon Conway-Morris, Professor of Evolutionary Palaeobiology at Cambridge, gave this paper as the 2005 Boyle Lecture, in which he shows how the mechanisms of evolution are anything but random and open ended. He also shows how the whole of science points compellingly to the mind of a Creator.

“The study of evolution itself already hints that to reduce all to the accidental and incidental may turn out to be a serious misreading of the evidence.”

Preaching To The Converted - A Sensible Starting Point

It was G.K. Chesterton who trenchantly reminded us that, if one was going to preach, then it was more sensible to expend one's energies on addressing the converted rather than the unconverted¹. It was the former, after all, that were - and even more so *are* - in constant danger of missing the point and sliding away from the Faith into some vague sort of syncretistic, gnostic, gobbledegook. Chesterton, as ever, was right and should you think this is just another of his tiresome paradoxes may I urge you to re-read him: his prescience concerning our present situation and, worse, where we are heading is astounding.

Yet, it might seem a little odd in a lecture devoted to the ancient and ongoing debate between science and religion to invoke at its onset the name of Chesterton. Well, no, I don't think so. First, as Stanley Jaki has reminded us, it is over-simplistic to regard Chesterton as anti-science². What Chesterton regarded with the deepest alarm was not science, but its mis-use. Indeed long before the time of Chesterton, others already saw the dangers of unprincipled meddling where hubris and ignorance marched hand-in-hand. Robert Boyle was one such.

Indeed, from the time of Boyle we should ask how far we have come. So far as the science-religion debate is concerned the linearity of history looks curiously circular. What exactly has changed? In Boyle's time we see science, albeit in nascent form, already beginning to grasp limitless possibilities in knowledge while at the same time the drumbeat of Hobbesian materialism is clearly heard. As Reijer Hooykaas³ has remarked the reductionists were abroad, and amongst the atomists there were leanings towards naturalism, if not atheism. Somewhat mysteriously the barriers between science and religion, if not already in place, certainly were in the process of construction. And today? Who hasn't met the scientist who booming - and they always boom - declares that those who believe in the Deity are unavoidably crazy, "cracked" as my dear father would have said, although I should add that I have every reason to believe he was - and now hope is - on the side of the angels.

Science and Religion: The Dangers of Uninformed Debate

Conversely, the religious reaction was, and remains, to shy away from the implications of science. Better to doubt evolution, the age of the Earth, even the world itself, than imperil one's soul. The devout Boyle remained confident that this divide was false and pernicious. Yet even in his time Boyle's vigorous faith and orthodoxy, rather than simple observance of the customary pieties, was perhaps more unusual than we realize. Of Boyle himself it was written that he is "said to be a learned and witty man of science in spite of his religious convictions"⁴. If that raised eyebrows in the time of Charles II, today the same sentiments are likely to provoke mute astonishment.

It is surely telling that the apparent disagreements between science and religion are so often treated with a bluntness and unsubtlety than in any normal discourse would be dismissed as juvenile. Hear the sounds of debate? Then sure enough

within minutes we will be reminded of Galileo before the Inquisition or Bishop Wilberforce being mangled by T.H. Huxley. So often the terms of reference are condescending and dismissive, with the supposedly losing side being equated with flat-earthers. If at all possible the additional sins against political correctness are also heaped against the doors of religious discourse.

This is bad enough, but the discussion is usually based on a chronic chronological snobbery that supposes individuals dead for many years, if not centuries, were singularly unfortunate not to have lived in our times among people who not only know but are right. It would also be a mistake to overlook the fact that the undoubted continued hostility between science and religion in no small part is exacerbated by the sleight-of-hand whereby a materialist philosophy is illicitly imported to bolster a particular world-view of science.

It remains an astonishing piece of window-dressing: meaning is smuggled into a world which by definition lacks meaning. Boyle himself knew the enemy. He was more than prepared, in the words of Hooykaas, to be the one who "unmasks their pride... exposes their narrow mindedness [and]... shows up their arrogance"⁵.

The Animus of Atheist Secularism

So how are we to be true heirs of Robert Boyle, legitimate scientists but inspired by faith, willing not only to conduct the debate, but win it? The present-day auguries are hardly auspicious. Too often our arguments, our world-picture, even our data, are cringingly presented, in a combination of nervousness and accommodation. Do I really have to remind you of our opponents' visceral aversion to religious thought and practice? To be labelled as the credulous believers in fairy tales, bottomless receptacles for wish-fulfilment, blind to the undoubted evils of the world, are common enough jibes. So too is our opponents' almost limitless degree of patronizing. Think of Daniel Dennett's parody of religious thought in the form of his "Skyhooks"⁶.

Is he so naïve as to imagine the orthogonal intersection with our world of other realities is akin to some sort of elevator or a London Underground escalator? Nor should we forget that the attitude of our opponents is not one of benign disdain, but a deep-seated animus. Nor are they reluctant to pronounce on matters, such as reproductive technology or genetically modified food, with a conviction and assurance which in other contexts they would despise as symptomatic as the worst of dogmatic interference by the Pope or similar. These things matter, and as Peter Kreeft reminds us they not only matter, they matter absolutely.

Polemic and rhetoric have their places, but we are here not only to honour Boyle, but to re-examine how science and religion not only must co-exist - and I hope nobody here has fallen for Stephen Jay Gould's reckless canard of science and religion defining independent magisteria of influence⁷ (and by way of further parenthesis should they toy with this superficially appealing idea be warned they face logical incoherence) - but far more importantly how science reveals unexpected depths to Creation while religion informs us what on earth (literally) we are going to do about it.

From this perspective the impoverished world picture which the western world has been busy painting with a meager palette of predominantly browns and greys on a scruffy piece of hardboard (rescued from the attic) might not only be re-illuminated, but in this new blaze of light the wonder might become deeper - and the risks clearer.

The Differing Assessments of Physics and Biology

I think it almost goes without saying that of all the areas of science concerned with this dialogue that of organic evolution is the most sensitive, in some ways the most vulnerable. This is hardly surprising; the stakes are the highest because where we humans came from, who we are, and what we represent must be questions of central importance. In other areas of science, on the other hand, the temperature of engagement is lower, and even in quiet corners scenes of cordiality may be witnessed. Such is most obvious in terms of the astounding developments in physics. Not only with the evidence for an instantiation of Creation - the Big Bang, if you prefer - but even more powerfully the now famous evidence for cosmological fine-tuning and the implication this has for an Anthropic Universe⁸.

So peculiar and so finely balanced do the key physical constants appear to be that it is hardly surprising that many physicists have embraced the concept of not just one universe but a gadzillion of them tucked away behind black holes or hidden in other dimensions, ever present but ever invisible. And out of that gadzillion, well we are the lucky ones where everything turned out to be just, precisely right.

"The Multiverse", An Unhelpful Notion

Theologians are suspicious, and so they should be. Alternative universes, for ever invisible? This sounds like an area for debate by such as Albertus Magnus, Thomas Aquinas and perhaps especially William of Ockham. More topically, is this concept of multiverses so very far removed in our society from the inalienable belief in our society of unlimited "choice"?, a matter not only for the deathly pursuit of consumerism, but more

worryingly expressed in the enthusiasm for making religion out of a patchwork of beliefs. Yet to return to the cosmic dimension, even if we accept the possibility of multiverses, George Ellis has reminded us that the concept is highly protean. One possibility is that if indeed there are multiple universes, then they are all the same.

A Finely Tuned Universe Where The Numbers All Add Up

Should we choose to be parochial, and stick to just one, fourteen billion year old, universe with its physical constants just so to ensure habitability then we are not necessarily clear of the woods. Neil Mansong has emphasized that if we can accept fine-tuning we still have no notion of why the numbers are what they are, nor how they could all be systematically different yet still be combined to provide a habitable universe. Yet we must also acknowledge Howard van Till's¹⁰ point that it is the interdependence of each value as much as the fine tuning of any one that is so remarkable. All this smacks of design: physicists are rightly wary and the invisible host of multiverses is ever-popular.

Somewhere, and even more mysteriously somehow, out of physics and chemistry life emerged. By natural processes surely, but by routes and in an environment of which we have no secure knowledge. Despite its physical substrate the processes of evolution, and indeed their bewildering complexity of products, seem to find no echo in any anthropic principle, no sense of particular rules analogous to the gravitational constant or nuclear strong force.

The paradox of this view is that it is nevertheless just these evolutionary processes that have led - in the view of some inexorably - to a species that strangely can find meaning in such physical concepts. Some find it distinctly strange that just one species has stumbled on facts that not only inform us about the cosmos but in a deep fashion define its comprehensibility. From an evolutionary point of view, paradox or irony notwithstanding, this view in turn verges on the incomprehensible.

This is because if there is a consensus amongst neo-Darwinists it is that evolution is an open-ended and indeterminate process. It cannot be over-emphasized how pervasive is this view. Organisms must be fit for purpose, but "purpose" in only a relative sense. A widely agreed corollary is just as humans are an evolutionary accident, as interesting in their own way as a duck-billed platypus or for that matter water-cress, so too is human intelligence. More than one investigator has pointed out that if indeed this is true then the SETI project, that is the Search for Extraterrestrial Intelligence, is at best quixotic

and more likely based on a massive delusion. A profound irony: the one species capable of understanding the Anthropic Principle can only share his discovery with - a gerbil.

Intelligent design?

Yet even if we were to espouse this view of evolution as being utterly indeterminate, everything a fluke of history and circumstance, the organisms themselves never cease to amaze us, be it a bacterium living in the boiling water of a volcanic pool, an albatross circumnavigating the Southern Ocean, or a spider spinning its web of silk. As is repeatedly pointed out to talk about the organism as designed may indeed be a metaphor, but the integration of function, their unbelievable complexity not least at the level of biochemistry, their emergent sophistications be they in terms of navigation, exquisite sensory perception or intelligence, indeed their sheer poise, should leave us stunned.

Organisms are astonishing, and it is our common failing that this is too often lost sight of in the attempt to depict biology as a subject only to be conducted in an atmosphere of steely rationalism. The latter is no doubt the necessary procedure for investigation so long as it is never forgotten that the things we study are alive. In unguarded moments some biologists will gladly admit that the way an organism is put together is remarkable. It is not the point that we understand that biochemical cycle, this enzyme, or a particular hormone, it is the way systems interact and have a dynamic interdependence that is - unless one has lost all sense of wonder - quite awe-inspiring.

Nor should we dismiss this as an unworthy emotion. From this perspective it is easy to appreciate the intellectual attraction of the quasi-scientific/quasi-theological movement known as Intelligent Design (ID). Consternation! "Order! Order!!" Gavel's pounding, the Chairman with flushed face and hectic expression, swooning in the aisles with others hurriedly stepping over the recumbent and senseless bodies as they stumble to the doors, fresh air (well, of a sort), and the reassuring thunder of a busy London street. "Get me out of here! Intelligent Design? What, another recruit?" "Please revive yourselves, please return to your seats". Not a bit of it.

A Misleading Distraction

In my opinion, Intelligent Design is a false and misleading attraction. Tonight there would be little point in reiterating the many objections raised against Intelligent Design, especially those made by the scientific

colleagues, but opponents, of Michael Behe and Bill Demski, perhaps the two principal proponents of Intelligent Design. Rather it seems to me that Intelligent Design has a more interesting failing, a theological failing.

ID: A Deist Option

Consider a possible analogy, that of Gnosticism. Where did this claptrap come from? Who knows, but could it be an attempt to reconcile orphic and mithraic mysteries with a new, and to many in the Ancient World, a very dangerous Christianity? So too in our culture, those given over to being worshippers of the machine and the computer model, those admirers of organized efficiency, such would not expect the Creator - that is the one identified as the engineer of the bacterial flagellar motor or whatever your favourite case-study of ID might be - to be encumbered with a customary cliché of bearing a large white beard, but to be the very model of scientific efficiency and so don a very large white coat. ID is surely the deist's option, and one that turns its back not only on the richness and beauty of creation, but as importantly its limitless possibilities. It is a theology for control freaks.

To question Intelligent Design might generate a ripple of applause from any neo-Darwinians present, until they recall that this is a Boyle Lecture and theology is not a fad, a pastime for eccentrics, but in fact central to our enterprise. And now I want to persuade you that just such an approach may not only be consistent with evolution, but can also resonate with orthodox Christian theology - the Fall, the Incarnation and the End Times. Surely not; well let us see.

What Is Life?

My enthusiasm for life surely needs no reiteration. Let us also recall, however, how little of it we really understand. It is pretty clear that organisms are not blobs of malleable protoplasm buffeted by environmental circumstance. First, there is some intriguing evidence that at least in some circumstances organisms are predisposed - I won't use the word designed - to evolve. That is somewhat less surprising when we consider such evolvability in the context of the complexity of the developmental systems. Amongst the many oddities of life is that fact that first there is no detailed instruction manual - and in this context we can effectively ignore the genetic code - but these systems, if prodded or disrupted, are remarkably adept at self-repair. Not foolproof, of course, otherwise we would never catch a cold or, for that matter, die. Yet remarkable nonetheless.

So too however neglected it may be because of its sheer familiarity, too easily we forget the remarkable homeostasis of living organisms, that is their internal

balance and capacity for adjustment whatever the external environment. In any computer room along with the banks of hard disks, screens and printers there will be the steady hum of air conditioning, extracting the excess heat. Noisy and inefficient; now compare it with the temperature regulation of your brain. Not only is the integrity and integration of living systems quite astonishing, but attempts to employ machine-like analogies soon run into difficulties¹¹.

Organisational Unity - The Key To Entity And Organism

To be sure, we refer to motors, switches, transport mechanisms, fluid flow, pumps and electricity, but the reality is that organisms have a subtlety and efficiency far beyond any machine we can build. Again and again we discover that even in apparently straightforward functions there is an exactness to purpose which is eerily precise. The fact remains we have no idea of what it is about life that although obviously made of atoms no different then you find in a stone combines to form such a dynamic entity, culminating in the entirely surprising ability to become conscious. But consider even the cell. Here jostling together are innumerable chemical compounds involved in extraordinary biochemical cycles, including reactions that may be accelerated a billion times by protein catalysts - the enzymes - and all depending not only on carefully transmitted instructions - again depending on a truly baroque arrangement - but instructions that can be appropriately modified long after transcription from the original genetic code.

We are left in the rather extraordinary position of describing things which at one level we hardly understand. This alone should not make us confident that our attempts to mimic the products of evolution will be in any way straightforward. Notwithstanding the fact that biological systems are being used increasingly to instruct us, notably in the application of robotics, the manifest failures in the experiments on the origin of life and attempts to re-embed intelligence in an artificial context suggest a failure to grasp what it is that defines life.

This is surely sobering, and whilst it is emphatically not my intention to restore vitalism, it remains the case as James Barham (see note 11) has rightly stressed that the sum of the parts that defines life will continue to elude us if we insist on constructing definitions that look no further than a physico-chemical basis. Of course, given the remarkable advances in our understanding of biochemistry, molecular biology and evolution as a whole it is all the more strange we have failed to develop concepts, ideas, even a language that could capture this dance of life. Or is it so surprising? We forget at our peril

that language presupposes deep assumptions about the way the world is. If we decide it is arid, machine-like and meaningless then it will be all the less odd that its richness will slip through our nets.

That satisfactory definitions of life elude us may be one hint that when materialists step forward and declare with a brisk slap of the hands that this is it, we should be deeply skeptical. Whether the "it" be that of Richard Dawkins' reductionist gene-centred world-picture, the "universal acid" of Daniel Dennett's meaningless Darwinism, or David Sloan Wilson's faith in group selection (not least to explain the role of human religions), we certainly need to acknowledge each provides insights but as total explanations of what we see around us they are, to put it politely, somewhat incomplete.

World Pictures

Yet, even if levels and mechanisms of evolution are hotly disputed - what make ye of genes, or group selection? - the fact remains that just as the sky is blue, evolution is true. So what is the problem? A rhetorical question, of course, because none of us needs to be reminded that it is the Darwinian world-picture that provides the metaphor of humans being just one tiny twig on the great tree of life - a tree which also, please note, is almost completely dead. Not only are we built of the dust of dead stars, but now we learn that we stand on a charnel house.

To argue from this well-rehearsed perspective that nevertheless we are in some bizarre way also built in God's image would seem to be frankly preposterous. I will suggest that such a reading, effectively built on the assumption that size and position in themselves are important, is woefully simplistic. But there is much more at stake than simple disagreement as to whether or not one species, on one planet, in one solar system and in one galaxy of all the billions, is somehow relevant.

A world-picture that encompasses science but also the deep wisdom of theology may help us to explain how it is we can think, how we discover the extraordinary, but so too it may warn us of present dangers and future catastrophes. Not only that, but it can instruct us as to what may be the limits of desirable knowledge and risks of unbridled curiosity¹⁸. This world picture could also show that far from being a series of mindless accidents history has directions and conceivably end-points. And the other world-picture?, one based not just on science but wedded to a scientific programme.

Well, you know it as well as I do. Here all is ultimately

meaningless. The metaphorical sparrow in the storm may still enter the warm and well-lit mead-hall, but its return to the violent night outside erases all memories and obligations. Those individuals who espouse this world-picture may, for all I know, be better and more charitable people than the theists.

I wouldn't be at all surprised; the latter don't have too good a reputation for tolerance but the relative moral merits of any of us are in the final analysis only relevant to exponents of the theistic world picture; to those of scientific inclination they might be socially useful but in the grand order of things can have no meaning in a soulless world. To repeat Peter Kreef's remark: in the end these are matters whose final resolution is beyond discussion. If correct they matter absolutely, both for us as individuals and for the sort of world we want to inhabit.

Is Science The Thinker's Path Back To God?

So could the study of evolution actually lead us to a far less bleak view than such secular hierophants as Dawkins repeatedly claim? It is, of course, no new suggestion that evolution may be the way God has chosen to arrange matters, and this view in its turn has been resoundingly attacked. What of the sheer waste - all those trilobites, and the pain and evil exposed generation by generation - all those ichneumon flies? Both points have been addressed elsewhere, by others more cogent in argument and skilled in debate.

Concerning the latter simply recall that as evil has no reality in a meaningless world we may rightly deplore it because we too have a nervous system, but our pain and that of ichneumon fly's victims has no permanent significance that might one day be redressed. Why all the fuss? And who, of all people, are we to complain of waste? Our profligacy might also perhaps provide a point of reference when Creation is summed up.

The Rediscovery of Cosmic Purpose

Such views presuppose a world-picture very alien to many scientists and philosophers today. Theirs is ultimately a council of despair; one species, on one tiny planet, in a vast and ancient universe? There are several responses to this view. First, who are we to decide what is or is not appropriate? What metric do we use? One can observe that at least in terms of size, perhaps oddly, we are just in the centre, the mid-point between the unimaginably small and the cosmically vast¹². Next, what if we stand on an immensity of time? Leaving aside what time is, would it make any practical difference if the beginning was a million years ago, as against the believed value of 13 billion, let alone even 100 billion years?

Did the innumerable brachiopods (or whatever is your favourite fossil organism) drum their metaphorical fingers and glance at their watches, wishing the Palaeozoic would slip by just a bit more quickly? Maybe the 13 billion years is the time we need, for carbon to form, for life not only to evolve but to find itself in a neck of galactic woods which is stable enough not to frighten the horses with rogue black holes, gamma ray bursts and titanic supernovae.

Evolution: Not An Open Ended Process

Suppose this approach has some merit. Metric-sized animals that are the end-result of many billions of years of prior stellar and biological evolution may be the only way to allow at least one species to begin its encounter with God. But you may well riposte: let us reconsider organic evolution. Isn't it an open-ended process, to be sure showing an inherent evolvability, but to evolve to what? To be able to function, to reproduce, of course, but to produce in the fullness of time a very strange species, capable to great good but also terrible evil, sensitive to hidden dimensions but also credulous, able to measure the span of the universe but also allow the Flat Earth Society?

As has already been made clear, the viewpoint within orthodox Darwinism is agreed and uncontroversial: humans are an accident of evolution, because everything produced by evolution is strictly incidental to the process. Accordingly humans are as fortuitous as a tapeworm, and by implication ultimately no more - or less - interesting. I have already suggested that if we are hardly able to define life, this alone should give us pause for thought.

I would further argue that the study of evolution itself already hints that to reduce all to the accidental and incidental may turn out to be a serious misreading of the evidence. In terms of evolution the clear evidence for organismal simplification, not to mention the repeated move to parasitism, does not negate the realities of evolutionary progress and the emergence of irreversibly complex states. More particularly the view that evolution is open-ended, without predictabilities and indeterminate in terms of outcomes is negated by the ubiquity of evolutionary convergence¹³. The central point is that because organisms arrive repeatedly at the same biological solution, the camera-eyes of vertebrates and cephalopods perhaps being the most famous example, this provides not only a degree of predictability but more intriguingly points to a deeper structure to life, a metaphorical landscape across which evolution must necessarily navigate.

Converging on Convergence

Concerning evolutionary convergence I could give you innumerable examples, but the central aim of this lecture is to show the evidence now strongly suggests humans to be an evolutionary inevitability. On this basis some time-honoured theological questions may be re-addressed. What is it then concerning evolutionary convergence that can inform us about both the definition and emergence of humanness?

This is a large and complex area, and in passing I will only note is that there are a number of key features such as complex vocalizations, tool-making and cultural transmission, which are both vital to the general argument and are patently evolutionarily convergent. Not only have they evolved independently a number of times, but as importantly this indicates that these features are real biological properties, defined entities which are necessary prerequisites for the evolution of humans. For reasons of time and also relative importance it is pardonable, I trust, if I choose to focus on the emergence of complex intelligence and mentality. Briefly, it is now clear that an intelligence equivalent to the primates has evolved independently at least twice, that is in the dolphins and corvids (or crows)¹⁵.

In fact the figure is probably substantially higher¹⁶, but any estimate depends on questions of phylogenetic relationships¹⁷, and continuing debates about levels of intelligence, for example amongst the cetaceans¹⁸. Even so, within at least the dolphins¹⁹ and crows²⁰ the similarities are indeed very striking. And there is good reason for such surprise. First, this primate-like intelligence has emerged in strikingly different contexts. Sitting in trees and laying eggs is one thing, living in an ocean is another, and both contrast with the evolution of the apes in jungle and savannah. Second, and even more importantly, even though dolphins are also mammals, their brain structure of the dolphins differs markedly from that of the apes, whilst that of the crows is even more distinct.

Repeating Patterns of Mental Architecture

Thus from radically different neural substrates the same type of mind emerges. This is surely startling, for at least two reasons. First, it reinforces our view that mind is not some sort of epiphenomenon, a simple by-product of chemistry and electrical activity in a squishy organ that happens to be located in the skull. If it was, why should it be so similar? Second, as Ed Oakes has pointed out to me if wings (also convergent) need air to fly, perhaps brains require an equivalent "mental atmosphere" to operate.

These extraordinary, and in large part only recently appreciated, similarities in mental architectures beg other profound questions. If so similar, what is it then that really defines human uniqueness? In part language of course, but even here the gap is probably narrower than we think. Consider the semantic and syntactical abilities of such animals as the dolphins, not to mention the evidence for animal vocalizations both being acquired in the same manner as human speech (including a phase of infant babbling) but having also an inherent structure in terms of the frequency distribution of different "words" (Zipf's law).

The Mystery of Consciousness

Recall also that so far as the hominid fossil record can be relied upon concerning such intangibles as awareness, language and empathy, let alone an almost universal religious instinct, the transition to full humanness was evidently a gradual process (and remember a process that is still arguably incomplete). This in turn has two very interesting implications. First, if consciousness was hovering in the wings of the theatre of evolution with its fully fledged emergence only a matter of time, then why us as against some other species still grunting in the undergrowth?

Simply an accident of circumstance, being first on the block? Possibly so, but we should remember that belief in a personal God implies choice, both on our part and more importantly His. Is the history of the Jewish nation a sort of analogy? Chosen, prodded by their true prophets, and despite diversions and disasters leading the rest of us by a route nobody expected to the Incarnation? Tricky, and possibly a dangerous argument, because of course the story doesn't stop there. Either way, the plea of "why us?" takes on new and different dimensions, but ones to which our materialist colleagues will, I fear, be blissfully oblivious.

Man's Place in Nature

Second, and I very much fear treading on even more problematic - but in fact related - ground, suppose that there were other species on this planet even closer in sentience to humans than either dolphins or crows? How should we treat them? Larder, zoo, nature reserve, or an invitation to tea? I suspect strongly that would be our dilemma if, for whatever reason, the Neanderthals had not disappeared. A similar question is asked by the American writer,

Harry Turtledove, in one of his stimulating science fiction novels based on a counter-factual world¹⁹. In his book, *A Different Flesh*, we are asked to imagine a North America which is the abode of australopithecines but otherwise

uninhabited by hominids, that is until the arrival of the Europeans. His story stretches over several centuries, but a central theme is how we should treat our very near cousins, creatures he calls the "sims". That question stretches from initial contacts to finally medical trials involving the deliberate infection of sims with HIV.

Hypothetically with the sims and probably actually with the Neanderthals, these represent species that are so close to us that any Socratic dialogue would beg agonizing questions of moral decision. In either case humanness is in the last stages of emergence, a consciousness that is already grasping realities beyond immediate vision. We might be grateful that such a dilemma cannot arise with either the Neanderthals or the sims, until we recall that just such an emergence of mind almost certainly occurs within a few weeks of conception in the human foetus²⁶.

Far from being a series of curious accidents, the study of evolution poses some deep and awkward questions. I suggest, moreover, that it may illuminate in other ways who we are and our place in the world. I have already mentioned that evolutionary convergence hints at a prior "landscape" which predetermines, albeit in an extraordinarily rich way, the outcomes of the process, not least human intelligence and by implication the inevitability of contact with a different sort of Mind, an encounter with God. I want to argue that this is more than a powerful metaphor, and in doing so I now move to the heart of this Boyle Lecture. Consider music.

A Universal Music?

In a fascinating essay Patricia Gray and colleagues²¹ remark on the many similarities between our music and that of animals. That gap between them and humans is obvious enough, no bird in a tree astonishes us with Tallis' Forty-part motet, *Spem in alium*, but the basics of harmonics, melody, invention, inversion duetting and even riff sessions are all shared. Like consciousness, the symphony orchestra is also waiting in the wings of the theatre of evolution. Music is, therefore, a splendid example of convergence. As such one can certainly propose scientific explanations, both in terms of the physics of sound and the biology of function such as sexual matters or territoriality.

The plausibility of such assumptions, not least in the famous songs of the male humpback whales, let alone their dubious extrapolation to the realms of evolutionary psychology in humans, need not detain us. This is because Gray *et al.* go on to make a much more interesting argument. Suppose, they suggest, there is a Universal Music, and the reason why all earthly song is

so similar is because all are gaining access to an Ideal, a reality both "out there" but also intimately close, in a "dimension" discovered by evolution, familiar but also one that defies simple categorization. Such a view has equal applicability to intelligence, mentality and discovery of the other "invisibles" that together define our continuing search for Truth. There is, moreover, an intriguing analogy to the discovery of music that has even more interesting theological implications. I alluded above to the mysterious origins of language.

We can, of course, take a biological stance. In the context, say, of predator warnings or the demands of reproduction, the howls, screeches, chattering and whistles may well make good functional sense so that our continuing research will be rewarded with fruitful insights. As with music, however, there are other approaches, other dimensions that touch wider and more remote shores.

A Rumour of Angels

Here I have in mind J.R.R. Tolkien's fascination with words and the origins of language. His creation, or more strictly sub-creation, of Elvish might owe much to his interests in Welsh and Finnish, but it is also clear that his immense creativity and the invocation of the beautiful, mysterious and almost painfully real Middle Earth, was founded on a deep appreciation and love for languages. In some strange way the articulation of Elvish and the other languages of Middle Earth were the catalysis for the rest of his mythos. It is also evident that Tolkien, already a master philologist, was fundamentally influenced by another of the Inklings, Owen Barfield and especially his book *Poetic Diction*²².

In essence, and as compellingly explored by Vernon Flieger²³, Barfield and thereby Tolkien believed that from its source language had become fragmented: Flieger's metaphor is "splintered light". Originally certain words, in "primitive" times, carried an immensity of meanings that importantly touched on the unseen, if not the sacred. In time these meanings subdivided, to be sure, precision (of a sort) was gained, but also much was lost. Paradoxically reality was blurred and disenchantment spread.

The implications of this are not difficult to grasp, but they seem to me to be extraordinarily fruitful. The sense that there are other realities, orthogonal to everyday experience, is certainly familiar: who has not entered zones of timelessness, had prescient dreams, compelling hunches or odd synchronicities?

It is not my assumption that these realities are either

exclusive or incompatible. In fact, there is every reason to think that individually but obliquely they collectively touch on much deeper matters, but in our present state they can be deeply disconcerting. Potentially, however, they open portals to new perspectives and possibilities. Who is not familiar with the metaphor of hearing the harmony of spheres or imagining that somehow we might engage in speech with animals? Literally these are either fanciful or folk tales, but if the New Testament tells us anything, it is that, as Tolkien finally persuaded C.S. Lewis in their celebrated night-time walk in Magdalen College, the point of Christianity and the Incarnation is that this is when myth became true and real.

Evolution Beyond The Horizon

As I will explain at the end of this lecture, in the final analysis how we got here hardly matters, but at this juncture all I need to stress is the process by which we, and evidently other sentient species, had at least the possibility of understanding a wider reality, a bed-rock of existence, was by the agency of evolution. By this process life has ramified into richness and complexity. We are embedded in a true Creation. Unsuspected it turns out that Darwin not only equipped us with a mechanism but also a compass whereby sentience would necessarily emerge, so that ultimately the Song of Creation would also be heard. Are science and theology really so far apart?

My work on evolutionary convergence, with its claims that the roads of evolution are constrained, that not all is possible (in fact the reverse is the case: nearly all is impossible), and that the outcomes of evolution are thereby effectively inevitable, frequently provokes the question along the lines of "Fine, so what's next?" A fair question, and one which not only generates interesting responses but again touches directly on theological issues. Some predictions are pessimistic and well-rehearsed. We simply destroy ourselves, be it by global warming, viral pandemic, bio-terrorism, nuclear warfare: exit is inevitable, whether by a bang or more probably by a whimper.

Choosing The Right Road To The Future

Other prognostications I find even more chilling. Maybe we are too clever for our own good, but not clever enough to realize that serving as a hand-maiden to machine-intelligence we are sealing our fate and embarking on the construction of a terrible world, joyless and cripplingly uninteresting, arid in all but computation. To many, and as with so much else we see around us, there is in this gloomy view a grinding sense of inevitability. In our heart of hearts it is not what we want, "but then you can't stop progress, can you?"

Shame really. N'other cup of tea?"

Perhaps, however, what is construed as "progress" is better viewed as the wrong road that, if not swiftly abandoned, will lead to a destination that we understand, but one over which one day we have no control. Such thinking, of choices, decisions and acknowledgement of fault (repentance, if you prefer) is of course very germane to theological thinking. Indeed, theology may end up making some absolute and very surprising claims. Let us reconsider the rhetorical question, "Fine, so what's next?". In contrast to the musings of science the view of orthodox Christianity is, I think, fairly straightforward, even if its implications are not.

If Adam is metaphorically the first man, then Jesus as Christ is the last. In one sense there is no more future. Evolution did have an end-point, it was us, and now with the Incarnation it is time to move on. To the non-theist this perspective will no doubt seem not warped, but simply mad. Robert Boyle emphatically would not have been so minded, and it is now time to see not so much whether science and religion have any relation but rather to suggest that they are intimately linked in a way that actually promises great goodness but from our present stance seems to be much more problematic.

A Faustian Compact?

It would be otiose to suppose that science, along with medicine and technology, has not delivered extraordinary benefits and gifts. Nor is it disputed that there are side-effects and unforeseen consequences that can undo at least some of the good done. As a group scientists, even under existing pressures, generally maintain a high degree of integrity and are genuinely interested in what is true as against what is popular or expedient.

Yet the darker side is never very far away. Discoveries and inventions, even those apparently innocuous, in the wrong hands may lead either to distortion of societies or ways of delivering death yet more widely and efficiently. So too the dangers of monopoly power and the manipulation of the market place may benefit the few and impoverish the many. The risks are most obvious in biotechnology, but in fact no area of science is free of risk. To many the benefits of science appear to be gained at the increasing expense of a Faustian compact.

Theologians have not been silent on these issues, but I suspect that we are not going to make much headway when the aim of today's culture is blatantly scientific and deeply manipulative. Here the ultimate aim is of controlling the world in a way ostensibly for the best but

in fact wedded to a naturalistic programme, that is to see no arbiter outside human agency, or worse whim. To such ears talk of the Fall, the realities of radical evil, even the danger of damnation will seem quaint, risible and medieval; nothing that is to do with the real world. Robert Boyle, in his time, was not so sure. He was deeply concerned that some areas, notably of magic and astrology, might lead into very dangerous territory where malevolence would be made manifest. The point is not whether magic and astrology are in any sense true, but to act as if they might. So too today we are unwilling to concede either the possibility of what Roger Shattuck calls "Forbidden Knowledge"²⁴ or that we might be assisted by those intelligences who do not have our long-term interests at heart.

Science at the Crossroads

Christian theology offers insights that at the moment are deeply unfashionable, not least as to what we ought to do when we choose to eat at the tree of knowledge. It is not necessarily a viewpoint that is in any way comforting, but neither are we meant to despair.

Creation, so far as we know, is infinite in its richness and promise, and while there are many avenues to discover this truth, there is no reason to think that science is not one of them and in certain situations is actually the only inkling we will have. Indeed science reminds us that Creation is far more wonderful, far more extraordinary, far more diverse, far richer than we could have ever anticipated. Nor is there any sense that we are anywhere close to a complete explanation of all we see. Rather, each discovery yields new and unexpected insights. What is also obvious is that at least materially this knowledge can be extraordinarily powerful.

How we choose to use what we learn remains our central dilemma. If we ignore the theological dimension then we are heading for deep trouble. As long as we view the world as an accidental happenstance, to be treated as a utilitarian object, we not only lose sight of Creation, but also ourselves and our place in it. Well, that is a debate that is still with us, and was as familiar to Robert Boyle.

An Evolutionary Eschatology?

So is this the end of the matter? There is one final aspect of Creation which in my view we would do very well not to overlook. Science certainly informs us about the integrity and complexity of the world around us, and thereby are we the better equipped to appreciate its beauty. Yet whatever else it might be, just as with our lives, so the visible world and so far as we can ascertain the entire Universe cannot be permanent, at least in any recognizable form.

The standard view is that given the expansion of the universe, and the new evidence that on a cosmic scale this process is accelerating, in the long term our future is not too bright. Fairly early on the Earth itself will become uninhabitable as the Sun enters old age and swells up. Present estimates indicate that within a billion years the oceans will have boiled away, and if those estimates are wrong the death of our planet would not be much postponed beyond that. Other local excitement will be the projected collision between our galaxy and the nearby Andromeda galaxy.

Not With a Bang but a Whimper?

Again it is in the distant future, but in the cosmic scale of things may get a few lines on page 176594972187 of the Universal Herald. After all there is nothing too unusual with this given examples of colliding galaxies are known. But as I said these are all views from the parish pump. This is because as expansion of the universe continues galaxy after galaxy will slip away over the horizon of visibility. Whereas today billions of galaxies are visible, in the distant future all will be receding from us so fast, so far away, that none of their light will ever reach us.

Beyond our galaxy there will be nothing to see. So too the stars will dim, and later still even the stars will cease to exist. After that, who knows, but the laws of physics suggest an eternity of a near-emptiness populated by solitary particles that slowly decay to even more elementary particles. There is speculation as to whether some sort of intelligence would - somehow - garner enough energy to survive in this diffuse, cold, near-vacuum. The point is that even if we, in some distant future, were able to spread to other worlds, conceivably other galaxies, we would merely win an extension of existence, a postponement of the inevitable.

A World Transformed; The Christian Vision of the End

There is, however, another view. It will not, I warn you, be popular. Yet consider; let us assume the universe is genuinely *ex nihilo*, made out of nothing by the good grace of God. That is certainly part of the Christian orthodoxy, and so far as I can see neither the size nor the age of the Universe makes any difference to this assumption. It also appears to be consistent with the evidence from the Big Bang. We should, however, be wary about such concordism, this apparently happy marriage between cosmology and revealed religion. Not that concordance is out of the question, far from it. One should just be wary because scientific evidence is always provisional.

Apparently irrefutable data or hypotheses have a curious habit of turning out to be gloriously, wonderfully wrong. From our present stance it is difficult to see what data could more satisfactorily explain many cosmological observations than the Big Bang, but we should be cautious of two things. First, to assume that the Big Bang is the same as God's Creation, and second to fool ourselves that Creation *ex nihilo* is actually in any useful way open to comprehension. What surely matters, however, is that what can be brought out of nothing might be either returned to nothing or otherwise utterly transformed.

This too, I think, accords with orthodoxy. The world around is very real, a point again G.K. Chesterton felt so strongly that at times thinking of an alternative literally promised madness. Now, no doubt to our scientific colleagues all this will seem madness. "What? The world not defined by its flaming ramparts, but consumed by them? Dear me, not only medieval, but in decidedly poor taste." Well, like death itself if one side is correct we will at least know, even if what we are greeted with is "not only medieval, but in decidedly poor taste." Well, I don't see any likely response in the mind-set of the moderns; almost any sort of eschatology will seem to be risible. Christian orthodoxy certainly suggests otherwise, and in this context, it is particularly difficult to remind ourselves how totally unlikely the Incarnation appeared, first to the Jews and very soon the ancient world.

Yet, it has an inexorable logic, and so I believe does an eschatology. My hunch is that it too will be quite unlike what we expect. Nor do I think the looming disasters, notably global warming, are the actual avenue. Global warming does, however, provide a very useful mind-set of attitudes. "Well, maybe it will happen, one day, but not in my lifetime" But the writing is on the wall, and in the sky and within the oceans. Could the same be true of End Times?

Rediscovering The Full Depth of Human Experience

Let me, however, conclude with one small observation. I have, uncertainly and with little skill, tried to show that Robert Boyle's concerns and beliefs remain as valid and pertinent today as they did in his time. A common complaint against such people as Boyle, or indeed any of our antecedents, is that they simply knew less, so no wonder they were the more credulous. This, however, is to fall simply into the scientific trap, and neglects the likelihood that if some areas of worthwhile human endeavour have flourished, others have unnecessarily withered, to our common detriment. Moreover, this view turns its back on eternal verities that were as true in Boyle's, or Pontius Pilate's, times as they are in ours.

That such verities are presently widely dismissed as social constructs, power games, or whatever will simply erode the good and impoverish the many but at least allow the intellectuals to dream the more easily in their many beds. Nor am I sure, despite the best efforts of such people as C.S. Lewis, Peter Kreeft and many other brilliant apologists, how these ventures would be successfully recaptured.

Science when it treats creation as a true Creation, and thereby faces up to its responsibilities, may well be important. I expect Boyle would have agreed. It seems ultimately, however, that it is the knowledge and experience of the Incarnation, the wisdom and warnings given by Jesus in the Gospels, and not least the Resurrection that in the final analysis are all that matters. Again I expect Robert Boyle would have agreed.

Acknowledgements

I am most grateful to the organizers of the Boyle Lecture 2005, notably Michael Byrne and the Rector of St Mary-le-Bow, the Reverend George Bush, for their original invitation to deliver this lecture, as well as their continuing encouragement and support. I am also most grateful to Sandra Last for much technical assistance, including typing drafts of the paper under considerable pressure. Finally, I wish to acknowledge numerous friends with whom I have discussed some of the issues, as well as the University of Cambridge, and especially my Department, for support over many years as my interests have continued to evolve. I dedicate this essay to the memory of my father.

NOTES

1. G.K. Chesterton. 1913. "An accident", in *Tremendous Trifles*, p. 31. Methuen.
2. S.L. Jaki. 1986. *Chesterton, a seer of science*. University of Illinois Press.
3. R. Hooykaas. 1987. *Robert Boyle: A Study in Science and Christian Belief*. University Press of America.
4. Hooykaas, op cit, p. 59; original emphasis.
5. Hooykaas, op cit, p. 58.
6. D.C. Dennett. 1995. *Darwin's dangerous idea: Evolution and the Meanings of Life*. Allen Lane, Penguin Press.
7. S.J. Gould. 2001. *Rock of Ages: Science and Religion in the Fullness of Life*. Cape.
8. M. Rees. 1999. *Just six numbers: The Deep Forces that Shape the Universe*. Weidenfeld and Nicholson.
9. N.A. Manson. 2000. *Religious Studies* 36, 163-176.
10. H. van Till. 2000. *Partnership: Science and Christian theology as partners in theorizing, in Science and Christianity: Four Views* (ed. R.F. Carlson), pp. 188-194. Intervarsity Press.
11. J. Barham. 2004. *The emergence of biological value, in Debating design: From Darwin to DNA* (eds W.A. Demski & M. Ruse), pp.

210-226. Cambridge University Press.

12. Virginia Trimble, pers. comm.
13. S. Conway Morris. 2003. *Life's Solution: Inevitable humans in a lonely universe*. Cambridge University Press.
14. L. Marino. 1996. *Evolutionary Anthropology* 5, 81-85.
15. N. Clayton & N. Emery 2004. *Science* 306, 1903-1907.
16. Amongst other examples of intelligence that probably have evolved independently are killer whales, sperm whales, New World monkeys, parrots, and very likely octopus.
17. L. Marino et al. 2004. *Anatomical Record* 281A, 1247-1255.
18. L. Rendell & H. Whitehead. 2001. *Behavioral and Brain Sciences* 24, 309-373.
19. H. Turtledove. 1988. *A different flesh*. Baen.
20. I owe this insight to Joe Vining's *The Song Sparrow and the Child: Claims of Science and Humanity*, University of Notre Dame Press (2004), see p. 145.
21. P.M. Gray et al. 2002. *Science* 291, 52-54.
22. O. Barfield. 1952. *Poetic diction: a study in meaning*. Faber & Faber.
23. V. Flieger. 2002. *SplinteredLight: Logos and Language in Tolkien's World*. Kent State University Press.
24. R. Shattuck. 1997. *Forbidden Knowledge: From Prometheus to Pornography*. Harcourt, Brace.

Simon Conway-Morris holds an Ad Hominem Chair in Evolutionary Palaeobiology, at the University of Cambridge. He is a Fellow of St John's College, and also of the Royal Society. He took his first degree at the University of Bristol, and apart from four years at the Open University (1979-1983) he has been based in Cambridge. His research interests include the study of Burgess Shale-type faunas, the first appearance of skeletons, and the Cambrian "explosion". Aspects of this were reported in *The Crucible of Creation* (Oxford University Press), while more recently his *Life's Solution: Inevitable Humans in a Lonely Universe* (Cambridge University Press) addressed the importance of evolutionary convergence. His interests extend to the science/religion debate and the public understanding of science, the latter including television appearances in the 1996 Royal Institution Christmas Lectures, as well as involvement in the forthcoming *Extraterrestrial* (Channel 4/ National Geographic). If undisturbed, he can usually be found reading G.K. Chesterton, with a glass of wine nearby.



We print, for its relevance, this open letter to the Pope from some American Catholic scientists in reaction to Cardinal Schönborn's article in The New York Times. It confirms the growing need for a cogent, orthodox synthesis of science and religion.

A PLEA FOR SYNTHESIS

July 12, 2005

His Holiness Pope Benedict XVI

00120 Vatican City

Your Holiness,

In his magnificent letter to the Pontifical Academy in 1996 regarding the subject of Evolution, Pope John Paul II affirmed that scientific rationality and the Church's spiritual commitment to divine purpose and meaning in the Universe were not incompatible. The Pope accepted that biological Evolution had progressed beyond the hypothetical stage as a guiding principle behind the understanding of the evolution of diverse life forms on Earth, including humans. At the same time, he rightly recognized that the spiritual significance that one draws from the scientific observations and theory lie outside of the scientific theories themselves. In this sense, claiming that evolution definitely implies a lack of divinity, and/or divine purpose in nature is as much an affront to science as it is to the Church.

The Holy Father also recognized: "It is important to set proper limits to the understanding of Scripture, excluding any unseasonable interpretations which would make it mean something which it is not intended to mean. In order to mark out the limits of their own proper fields, theologians and those working on the exegesis of the Scripture need to be well informed regarding the results of the latest scientific research." Since scientific investigations have repeatedly confirmed evolution by natural selection as a guiding principle for understanding the development of the diversity of life on Earth, theologians who are interested in exploring such questions as human dignity and purpose must take this mechanism into account in their considerations. As he put it, quoting from Leo XIII, truth cannot contradict truth.

These principles were reinforced more recently in explicit statements by the International Theological Commission, headed by you before your election as Pope. As the Commission document explicitly states, "God is...the cause of causes." As a result, "Through the activity of natural causes, God causes to arise those conditions required for the emergence and support of living organisms, and, furthermore, for their reproduction and differentiation." Finally, referring to evolution as a "radically contingent materialistic process driven by natural selection and random genetic variation", the commission nevertheless concluded "even the outcome of a truly contingent natural

process can nonetheless fall within God's providential plan for creation."

Scientists have been pleased to see a convergence between the views of the Catholic Church and the scientific community on these issues, in particular on the compatibility between the results of scientific investigation and Church theology. One of us recently wrote an essay in the New York Times, for example (see attached), praising precisely the Church's understanding of the compatibility of scientific investigation and religious belief, even when the process being investigated, like Evolution, appears completely contingent.

This week, Cardinal Christoph Schönborn, Archbishop of Vienna, however, appeared to dangerously redefine the Church's view on Evolution. In an essay, also published in the New York Times (see attached), he claimed that "Evolution in the Neo-Darwinian sense... is not true". Moreover, he argued that if divine design was not "overwhelmingly evident" then the associated claims must be viewed as ideology, and not science. He attacked not only Neo-Darwinism, but also the multiverse hypothesis of modern cosmology, both of which he claimed were "invented to avoid the overwhelming evidence for purpose and design found in modern science". Equally worrisome, in his effort to claim a line between the theory of evolution and religious faith, Cardinal Schönborn dismissed the marvelous 1996 message of Pope John Paul II to the Pontifical Academy, calling it "rather vague and unimportant".

It is vitally important, however, that in these difficult and contentious times the Catholic Church not build a new divide, long ago eradicated, between the scientific method and religious belief. We are writing to you today to request that you clarify once again the Church's position on Evolution and Science, that you reaffirm the remarkable statements of Pope John Paul II and the International Theological Commission, so that it will be clear that Cardinal Schönborn's remarks do not reflect the views of the Holy See.

We thank you for your consideration to this request, and wish you continued strength and wisdom as you continue to lead the Catholic Church in these difficult times.

Sincerely,

on behalf of:

Lawrence M. Krauss (Ambrose Swasey Professor of Physics, Professor of Astronomy, and Director, Center for Education and Research in Cosmology and Astrophysics, Case Western Reserve University)

Prof. Francisco Ayala (University Professor and Donal Bren Professor of Biological Sciences, Ecology, and Evolutionary Biology, Professor of Philosophy, and Professor of Logic and Philosophy of Science, University of California, Irvine)

Prof. Kenneth Miller (Prof of Biology, Brown University)

Science and Theology in a Trinitarian Perspective

John Polkinghorne

The former Professor of Mathematical Physics at Cambridge University explains his own view of the profound complementarity between science and Christian belief. We do not necessarily concur with his philosophy in every respect, but he addresses many important issues in an engaging and a highly readable way.

This essay, originally given as a lecture in 2001, formed the basis of the third chapter of Professor Polkinghorne's latest book "Science and the Trinity" published by SPCK in September 2004.

"If relationality plays so significant a role in our understanding of the universe, we may anticipate that it is also of significance for reality as a whole, and at its deepest levels. While this by no means proves the Trinity, it is certainly profoundly compatible with Trinitarian thinking."

From Physics to Metaphysics

Every one has a worldview, whether they know it or not, just as everyone speaks prose, whether they know it or not. As someone who has spent half a lifetime working as a theoretical physicist, I want to take absolutely seriously what science has to say and to make it part of the input into my worldview. But there are many other forms of human experience that I also need to take into account, including my experience as a Christian believer and a priest. When I consider all these factors together, I find that I want to assert that the most comprehensive and persuasive worldview I can find is that given to me by Trinitarian theology. It is here that I discover my preferred candidate for a true Theory of Everything.

Many of my scientific colleagues would consider that a pretty audacious claim to make. It would be a pretty tall order to cover all that needs to be said in its defence in the course of a single lecture. In fact I shall not attempt to deal with those reasons for Trinitarian belief that are internal to theology, but I shall concentrate mainly on the relationship of science to that particular metaphysical standpoint. You will see, however, that I cannot get very far without being forced to broaden the argument somewhat to include some aspects of human experience. One could call the exercise a voyage from physics to metaphysics, using physics in its ancient sense of what concerns the nature of things, but concentrating largely on those aspects of things that are disclosed by the natural sciences.

Vestiges of the Trinity: The Maker's Mark

In making an appeal to the profound setting of Trinitarian belief, I am not supposing that we shall find the world full of items stamped 'Made by the Holy Trinity'. The creative activity of God is more subtle than that. Nor am I supposing that what I am going to say is a logically necessary deduction from our experience, so that only a fool would disagree with me. No metaphysical view can have that degree of coerciveness. The relation between physics and metaphysics is a subtle one, for there is no logical entailment linking the two. Yet, physics constrains metaphysics, rather as the foundations of a building constrain, but do not determine, the edifice that can be built upon them.

The connection between the scientific concepts of physics and the philosophical or theological concepts of metaphysics is that of an alogical association, based on a perceived consonance. The exercise on which I am engaged has some resemblance to what in earlier ages would have been called the identification of vestiges of the Trinity - hints and suggestions which, if looked at in a certain interpretative light, can be discerned as providing support for belief in the triune God.

It seems to me that it would be very perplexing for Christian belief if no such indications were to be found, just as it would also be very surprising if they were of so unambiguous a kind as to command belief in a way that simply overwhelmed the human mind in its exploration of reality. It is to be expected that God is neither totally hidden nor totally manifested in the works of the divine creation.

Theism, An Enriching Vision of Life

Fundamental to belief in God is the conviction that the divine mind lies behind the order of the universe, the divine purpose lies behind the fruitful unfolding of cosmic history, that there is One who is worthy of worship and who is the true ground of an everlasting hope. Trinitarian belief adds to these concepts drawn from general theism, the greater specificity that God is known as the Father who created the world, as the Son who redeemed the world through the incarnate life, death and resurrection of Jesus Christ, and as the Holy Spirit, immanently and hiddenly at work in the unfolding of the history of Israel, the Church and the universe. My method of proceeding will be to consider aspects of scientific and, to some extent cultural, experience, whose understanding in purely naturalistic terms seems to leave significant and meaningful questions unanswered. I shall then suggest that Trinitarian belief affords the most intellectually satisfying way of locating these issues within a comprehensive matrix of understanding, thereby proffering the answers that naturalism could not provide. In other words, we shall engage in just the exercise of alogical but illuminating association that I have argued is the proper way of finding a persuasive relationship between physics and metaphysics.

There are six issues relating to our human encounter with reality that I want to consider, because I believe that they only become fully understood within the framework of a Trinitarian metaphysics.

(1) The Intelligible Order of the Universe

It is scarcely surprising that we can understand the world in the everyday way that is obviously necessary for our survival within it. Yet the development of modern science has shown that human ability far exceeds anything that could reasonably be considered as simply an evolutionary necessity, or a happy spin-off from it. It is one thing to figure out that it is dangerous to step off a high cliff, but quite another thing to be Sir Isaac Newton, able, in an astonishing act of creative insight, to see that what makes the cliff so dangerous is the same force that also holds the Moon in its orbit around the Earth and the Earth in its orbit around the Sun, and thus to discover universal gravity and to explain the motions of all the planets. Later Einstein, in his theory of general relativity, would refine and transform Newton's ideas, thereby enabling us to understand not just the solar system, but the structure and history of that whole vast universe of which we are so small a part.

Today, we can penetrate the secrets of the subatomic realm of quarks and gluons, and we can make maps of cosmic curved space-time, both regimes of no direct

practical impact upon us, and both exhibiting properties that are counterintuitive in relation to our ordinary habits of thought. Our understanding of the workings of the world greatly exceed anything that could be necessary simply for survival.

It has also turned out that it is mathematics that is the key to unlocking these scientific secrets. In fundamental physics it is an actual technique of discovery to look for equations that have about them the unmistakable character of mathematical beauty. Time and again we have found that it is only equations of this kind that will prove to be the basis for theories whose long-term fruitfulness convinces us that they are indeed verisimilitudinous descriptions of physical reality. The greatest physicist whom I have known personally, Paul Dirac, one of the founding figures of quantum theory, once said that it was more important to have mathematical beauty in one's equations than to have them fit experiment! Of course, Dirac did not mean that empirical success was an irrelevance in physics - no scientist could believe that. Yet, if at first sight one's equations did not appear to fit experiment there were some possible ways out of the difficulty - maybe you had not solved them correctly, or maybe the experiments themselves were wrong - but if the equations were ugly ... well, there was really no hope for them. Dirac made his many great discoveries by a lifelong and highly successful quest for mathematical beauty.

The Witness of Mathematics to God's Mind

When we use abstract mathematics in this way, as a guide to physical discovery, something very odd is happening. After all, mathematics is pure thought and what could it be that links that thought to the structure of the physical world around us? Dirac's brother-in-law, Eugene Wigner, who also won a Nobel Prize for Physics, once called this the unreasonable effectiveness of mathematics. He also said it was a gift that we neither deserved nor understood.

Well, I would like to understand it. If I am to do so I shall have to look outside science itself, for the latter is just glad that things are this way and it then gets on with the task of exploiting the opportunities that are offered. A naturalistic metaphysics is also unable to cast light on this deep intelligibility, for it has to treat it as just a fortunate accident. However, theistic metaphysics can come to our aid, for it suggests that the reason within our minds, and the rational structure of the physical world around us, have a common origin in the rationality of the God who is the ground both of our mental and of our physical experience. In Christian theological terms, our scientific ability to explore the rational beauty of the

universe is part of the deposit of the *imago dei*. Science is privileged to explore a universe that is both rationally transparent to us and rationally beautiful in its deep order.

Scientists frequently speak of the experience of wonder as the reward for all the weary labour involved in their research. You could say that the universe is a world shot through with signs of mind and, as a Christian, I think that it is indeed the mind of God that is revealed to us in this way. I believe that science is possible because the universe is a creation and we are creatures made in the image of our Creator.

In Trinitarian terms I would say that, whether they know it or not, scientists through their discoveries are encountering the divine Logos, by whom all things were made and without whom was not anything made that was made (Jn 1:3).

(2) Fruitful Cosmic History

The universe as we know it originated in the fiery singularity of the big bang, some fifteen billion years ago. It started extremely simple, just an almost uniform expanding ball of energy. Cosmologists speak with a certain justified boldness about the very early universe because it is so simple a physical system to think about. After fifteen billion years of evolving history, the universe has become richly diverse and structured, with us the most complex consequences of which we are aware. That ball of energy has become the home of saints and mathematicians.

This recognition in itself might encourage the thought that something has been going on in what has been happening in cosmic history. It is, of course, to that total history that Trinitarian theology has to look if it is to build its doctrine of creation on the foundation of contemporary physics. Contrary to what scientists such as Stephen Hawking seem to suppose, belief in the Creator is not concerned with identifying who lit the blue touch paper of the big bang and then retired to let the world get on with it, but it is concerned with who continuously holds that world in being. The subject of the doctrine of creation is ontological origin and not mere temporal beginning; it addresses Leibniz's great question Why is there something rather than nothing? and not simply How did it all start? For the Abrahamic faiths, God is as much the Creator today as God was fifteen billion years ago.

History on a Cosmic Scale - Not a Ready Made Universe

Of course, the universe's history has been an evolving history, as much on the cosmic scale as it has been in relation to the development of biological life on Earth.

Almost immediately following the publication of *The Origin of Species*, the Church of England clergyman, Charles Kingsley, coined a phrase that sums up the theistic way to think about that fact. He said that, though God could no doubt have created a ready-made world, the Creator had done something cleverer than that in making a world that could make itself. If we believe that God is love (1Jn 4:8), then we shall not suppose that the Creator brought into being a universe that is a kind of divine puppet theatre. The gift of love is always the granting of some due independence to be enjoyed by the object of that love. Therefore Trinitarian theology believes that God endowed creation with a deep potentiality and then allowed that creation to explore and realise its divinely given fruitfulness in its own way.

As we think about these matters, we may indeed follow the distinguished French biochemist and atheist, Jacques Monod, in seeing evolutionary process as involving an interplay between chance and necessity, but we need not go on to agree with him in annexing the metaphysically tendentious adjective blind to the chance half of the process. By chance is not meant the operations of the capricious goddess Fortuna but, rather, historical contingency, that this happens rather than that. This particular genetic mutation turns the stream of life in this particular direction. Had a different mutation occurred instead, a different possibility would have been realised. Not everything that could happen has happened; history necessarily represents only a small selection from the range of possibility. Chance, therefore, is a shuffling mechanism for exploring potentiality. Theologically understood, it is the way in which creatures make themselves. This happens within the given necessity of natural law, a point little attended to by Monod, but whose regularities will be seen by the believer to be pale but true expressions of the Creator's faithfulness. The remarkable potentialities present within the physical fabric of the universe will be understood as expressions of the divine purpose for creation's fertility.

Inbuilt Fruitfulness: The Anthropic Principle

Exactly how profound that gift of inbuilt fruitfulness actually is has come to light in recent years in the collection of scientific insights called the Anthropic Principle. A universe capable of evolving the complexity of life, as we know it, is a very special world indeed. While the contingency of evolutionary process is certainly part of the cosmic story, it is only one aspect, and the proper understanding of that story requires the recognition of the fine-tuning of the lawful necessity of the world, that is also an indispensable element in what has been going on. While life only appeared when the universe was eleven billion years old, and self-conscious

life when it was fifteen billion years old, there is a real sense in which the universe was pregnant with carbon-based life from the very beginning, its physical fabric being of the precise kind that alone would allow this possibility to come about.

Fine Tuning of Cosmic Laws and Conditions

Let me give a couple of examples of what I mean. Life could only evolve on a planet whose sun was a steady source of energy lasting for more than the four billion years or so that life's development would take in order to reach the complexity of something like a human being. We know what makes stars in our world burn in this way and it depends upon a sensitive balance between two of the fundamental forces of nature, namely gravity and electromagnetism. If these two forces had strengths that were different from what they actually are, stars would either have burned too feebly to support life or burned so fiercely that they would have exhausted their energy supplies in a mere few millions of years, far too short a time to be of any use.

The stars have a second indispensable role to play, for it is only in their nuclear furnaces that the heavy elements necessary for life, such as carbon, oxygen and many more, can actually be made. We are all made of the ashes of dead stars, creatures of stardust. One of the scientists who unravelled the delicate and beautiful chain of reactions by which the chemical raw materials of life have been made, was Fred Hoyle. When he saw how this was just possible, in a most delicate and beautiful way, because the fundamental nuclear forces are exactly what they are and no different, he said, "The universe is a put-up job." In other words, it seemed to Hoyle that there must be some Intelligence behind it all. Such a remarkable process could not just be a happy accident.

We have to consider carefully whether this was indeed the right response. Certainly, many scientists were upset when this remarkable specificity of our universe was recognised. They did not like the thought that there was anything special about our world, for they would have preferred to consider it as being just a typical specimen of what a universe might be like. The scientific instinct is unnecessarily wary of the unique. In order to defuse this uniqueness, some suggested that there are also a vast number of other universes, all with different sorts of natural laws and circumstances and all, of course, inaccessible to us. Ours is just the one where fortuitously carbon-based life is possible, a winning ticket in a multi-cosmic lottery. This suggestion is not a scientific proposal but a metaphysical speculation, a way to accommodate Anthropic fine-tuning within a prodigally enlarged naturalism. It seems to me that a much more

economic understanding is offered by the belief that there is only one universe, which is the way it is because it is indeed not any old world but a creation that has been endowed by its Creator with just those finely-tuned laws that will enable it to have a fruitful history. Like all metaphysical discussion, the argument is not of a logically coercive, knockdown kind, but for me it is coherent and intellectually satisfying. Scientific insight into the anthropic fruitfulness of the universe does not prove that its history is the expression of the purpose of a divine Creator, but it is certainly suggestive and supportive of belief in creation.

Limitation and Death: A World in Travail

It also turns out that evolutionary understanding represents a way in which scientific insight can offer faith some modest help with what is surely the latter's greatest perplexity. I refer, of course, to the presence of evil and suffering in the world. A creation allowed to make itself can be held to be a great good, but it has a necessary cost not only in the blind alleys and extinctions that are an inescapable dark side of the process, but also in the very character of the world in which it takes place. The engine driving biological evolution is genetic mutation and it is inevitable that the same biochemical processes that enable some cells to produce new forms of life will also allow other cells to mutate and become malignant. That there is cancer in creation is not something that a more competent or compassionate Creator could easily have eliminated, but it is the necessary cost of a creation allowed to make itself.

The more we understand scientifically the process of the world, the more it seems closely integrated - a package deal from which it is not possible in a consistent way to retain the good and remove the bad. I do not for a moment believe that this insight eliminates all the anguish and perplexity that we feel at the evil and suffering in the world, but it does suggest that its presence is not gratuitous. The depth of the problem posed by the demands of theodicy is only met in Christian thinking by a Trinitarian understanding of the cross of Christ, seen as the event in which the incarnate God truly shares to the uttermost in the travail of creation. As Jurgen Moltmann has so helpfully led us to understand, the Christian God is not just a compassionate spectator of the suffering of creatures but the Christian God is the crucified God, who is creation's partner in that suffering.

(3) A Relational Universe

Newtonian physics pictured the collisions of individual atoms as taking place within the container of absolute space and in the course of the unfolding of a universal absolute time. Einstein's discovery of special

relativity showed that observers' judgements of spatial and temporal characters are relative to their states of motion, and his further great discovery of general relativity integrated space, time and matter into a single unified account. The geometry of the universe depends upon the disposition of matter within it, and the shape of that geometry will curve the paths along which the matter moves.

Later Einstein, this time in collaboration with two younger colleagues, showed that quantum theory implied that once two quantum entities have interacted with each other they remain mutually entangled however far they may eventually separate. This counterintuitive togetherness-in-separation seemed so spooky to Einstein that he supposed it showed that there was something incomplete in the quantum account. However, beautiful experiments have shown us that this non-locality, as we call it, is indeed a property of nature. It turns out that even the subatomic world cannot be treated atomistically!

"Chaos" Theory Reveals Profound Interconnectedness

Turning to the level of everyday physics, the exquisitely sensitive systems that chaos theory discusses are so vulnerable to the finest detail of their circumstances that, in general, they cannot properly be considered in isolation from their environment. They too must be treated holistically. In these diverse ways, twentieth-century science has revealed a deep-seated relationality present in the fabric of the physical world.

If relationality plays so significant a role in our understanding of the universe, we may anticipate that it is also of significance for reality as a whole, and at its deepest levels. While this by no means proves the Trinity, it is certainly profoundly compatible with Trinitarian thinking. One could paraphrase the title of John Zizioulas's fine book of Trinitarian theology, considered from an Eastern Orthodox perspective, *Being as Communion*, by using the terms *Reality is Relational*.

(4) A Universe of Open Process

It seems that many people outside the scientific community still think of the universe that science describes as being a gigantic piece of cosmic clockwork. In fact, the twentieth century saw the death of such a merely mechanical view of the world. Its demise came about through the discovery of widespread intrinsic unpredictabilities present in physical process, first at the subatomic level of quantum theory, and then at the everyday level of those exquisitely sensitive systems which have been given the actually ill-chosen name of chaotic. Everyone has heard of the butterfly effect by

which the weather, in a sensitive mode, might eventually be affected by the greatly augmented consequences of tiny wings flapping in a far-off jungle. The reason chaos was an unfortunate word to describe this new kind of dynamics is that, in fact, it involves a subtle interplay between order and disorder, future behaviour being unpredictable but not totally haphazard.

All scientists would agree that these are highly significant and surprising discoveries, but the matter becomes more contentious when we go on to discuss what they might actually imply for the process of the world. Unpredictability is an epistemological property, that is to say it is concerned with what we can and cannot know about future behaviour. There is no inevitable connection between epistemology and ontology, that is to say, between what we know and what is actually the case. What connection we should make is a matter of metaphysical choice and philosophical contention. Different people will adopt different strategies. As a scientist, my instinct is to adopt a realist stance, that is to say, to believe that what we know is a reliable guide to what is the case. I have encapsulated this metaphysical strategy in a slogan I coined and that I rather like: *Epistemology models Ontology*. After all, why take all the trouble involved in doing science if one did not believe that thereby we are learning what the physical world is actually like?

(5) The Universe as the Womb of Consciousness

The most surprising development in cosmic history following the big bang of which we are aware is surely the development of self-consciousness here on planet Earth. In us the universe has become aware of itself. Pascal said that human beings are mere reeds, insubstantial and tiny as we are in the face of the vast universe around us, but we are thinking reeds, and so greater than all the stars, for we know them and ourselves and they know nothing. Size and significance is certainly not the same thing.

Despite very interesting advances taking place in neuroscience, and mostly relating to the identification of the neural pathways in the brain that handle and process the information we receive from our environment, we do not at all understand the origin of our self-awareness. Clearly it is related to the functioning of our brains - a sharp tap on the head with a hammer will establish as much - but there is a yawning gap between talk of neural networks, however sophisticated such talk may be, and the simplest mental experience of perceiving green, and we have no idea how to bridge it. I do not rejoice in this current ignorance, but neither do I wish to capitulate to premature reductionist claims that we know that we are

just computers made of meat. It seems clear that human beings are something much more interesting and more subtle than that.

Beyond Mere Mechanism, Meaning Points to Mind

One persuasive argument to this end is John Searle's celebrated parable of the Chinese Room. You are immured in a chamber whose only communication with the outside world is through two grilles. Through one of them you receive pieces of paper on which there are mysterious squiggles. These you match up with their counterparts in a big book you have been given. You then copy out the squiggle opposite the one you have identified and hand it out through the second grill. You have absolutely no idea what is going on. In fact, the incoming squiggles are questions in Chinese and the squiggles you copy out are the appropriate answers in Chinese. In this parable, you are the computer, the book is the programme and there is no understanding in either of you. That can only be found outside the room, in the programmer who compiled the book. In other words, computers are marvellous at syntax, making connections, but hopeless at semantics, understanding the significance of what is going on. Meaning does not reside in a computer, even one made of meat.

Appreciation of the profound complexity of human nature is reinforced when we consider that we are moral beings. The question of the nature of value is absolutely central to the metaphysical task. This is the point at which making further metaphysical progress demands that I add insights from human experience to the scientific insights that have been my main concern up to now. Highly contentious issues are at stake but I am happy to affirm my convictions and make it clear where I stand.

I believe that we possess moral knowledge of a certainty at least equal to that relating to our possession of well-sifted scientific knowledge. Despite the claims of the sociobiologists and the social constructivists, it seems clear to me that my conviction that torturing children is wrong is neither a disguised survival strategy of some curious kind, nor a convention of my society, but a fact about reality that I know as surely as I know anything. We face the remarkable fact that the physical world is also the arena of moral imperative and ethical choice. One of the attractions of theistic belief is that it makes this linkage intelligible, for our ethical intuitions can be understood as intimations of the good and perfect will of the God who holds the physical world in being.

The Inadequacy of Deism; Experiencing a Personal God

That same physical world is also the carrier of beauty, another extremely significant form of value. For

example, I am sure that our experience of music, which from a purely scientific point of view is just neural response to the impact of airwaves on the eardrum, is actual engagement with a dimension of reality. Once again, theism can make this intelligible, for it enables us to understand our aesthetic experiences as being a sharing in the Creator's joy in creation.

Human experience is many-layered. The same happening can be an event in the physical world, a time of moral challenge and decision, an experience of beauty, and also an occasion of encounter with the sacred. Worship can have all these dimensions for the believer. It seems to me that this richness of reality poses unsolved problems for naturalism, problems that a theistic metaphysics can address with confidence along the lines I have already suggested. Our belief that there is a God worthy of worship is based on our understanding that the Lord is the ultimate source of the good, the true and the beautiful.

Christian theology attaches great significance to the emergence of persons in the course of evolving cosmic history. This event is not to be treated as if it were an epiphenomenal curiosity or an incredibly happy accident. On the contrary, we are encouraged in our thinking to attach significance as much to the subjective as to the objective, as much to unique experience as to that which is repeatable. This implies that the impersonal God of deism - the Cosmic Architect or the great Mathematician - is an inadequate account of the divine nature. While finite human language is always being stretched beyond its limits when we try to speak of the infinite reality of God, it will be stretched in the most satisfactory direction when it is used in a personal mode. God is much more like Father than like Force. Of course, this does not mean that God is the Old Man in the Sky of debased caricature, but it points our thinking in a direction that may properly be called transpersonal. The Trinitarian picture of the subtle perichoretic interaction of the divine Persons offers illuminating insight into the character of that necessary transpersonal stretching.

(6) A Universe of Eventual Futility

On the largest possible scale, the history of the universe is a continuing contest between two opposing principles: the explosive force of the initial big bang, driving matter apart, and the contractive force of gravity, pulling matter together. They are very evenly matched and we cannot measure things with sufficient accuracy to be absolutely certain which will win in the end. In consequence, for the long-term cosmic future we have to consider two possibilities. If expansion prevails, the galaxies will continue to fly apart forever, slowly cooling and decaying until the world ends in a dying

whimper. If, on the other hand, gravity prevails, the present expansion will one day be halted and reversed and the world will end in a bang, as the universe collapses back into the melting pot of the big crunch. Either way, the cosmos is condemned to eventual futility. It is as certain as can be that carbon-based life will everywhere prove to have been a transient episode in its history.

An Unpredictable Future is not an Uncertain One

These reliable but bleak prognostications raise obvious questions about what might be the Creator's ultimate intentions for creation. Certainly they do not support any notion of evolutionary optimism, of a total fulfilment to be found within the unfolding of present process alone.

If you take this realist view, unpredictabilities will be signs of an actual openness to the future. By that, of course, I do not mean that the future becomes some random lottery, but that the causes that bring it about will be more than simply the exchanges of energy between constituents that a conventional science describes. What then might these additional new causal principles be? I would suggest that they will be concerned not with energy but with what one might call information, that is the generation of patterns of behaviour. The unpredictable future possibilities of a chaotic system differ from each other in precisely this way; they all correspond to the same energy but to different patterns in which the energy flows.

We are on the threshold of very interesting new developments in basic scientific understanding. Through computer simulation and some other techniques, we are just beginning to learn something about the behaviour of genuinely complex systems. It turns out that they display quite astonishing propensities to the spontaneous generation of patterns of large-scale order. At present these matters are not well understood, but I believe that the science of the twenty-first century will be characterised by making pattern, and the information that specifies that pattern, a fundamental category in scientific vocabulary, alongside the traditional concepts of matter and energy.

Openness to the Providential Causality of God

In this new emphasis on patterned behaviour we see a glimmer - I say no more than that - of how it might be that we enact our chosen patterns of behaviour as intentional agents. And if the future is sufficiently open for us to play a part in bringing it about (as, one way or another, it must surely be), it seems to me that it will also be open to divine providential causality active in the world as well. I have summarised here very briefly a discussion that obviously requires much more careful and

extensive laying out, something I have attempted to do elsewhere in my writing. I want simply for our present purpose to point out that this picture has two implications for theology. One is that science's description of physical process is not drawn so tight as to condemn God to the non-interactive role of a deistic spectator. (I sometimes express this by saying that a scientist can pray with integrity, asking God to do something in the world.) The other is that, if the locus of agential action is always within the cloudiness of unpredictability, though that action is real it will always to a necessary degree be hidden. What is going on cannot be analysed exhaustively and itemised into components, so that one might assert that nature did this, human will did that and divine providence did the third thing. Providence may be discernible by the eye of faith, but it will not be exhibitable by experiment.

The Spirit Prepares the Way for Christ

This last insight seems to me to be fully compatible to the account that Christian theology has often sought to give of the working of the Spirit, discreetly and hiddenly operating on the inside of creation, guiding and influencing its history but not manifested in some overwhelming and unambiguous way. God interacts within the open grain of nature and not against it. God interacts with creatures but does not over-rule them, for they are allowed to be themselves and to make themselves. It follows from this that not everything that happens will be in accordance with God's direct will. The divine sharing of the causality of the world with creatures will permit the act of a murderer or the incidence of a cancer, though these events run counter to God's desires. Involved in creation is a divine kenotic act of self-limitation that truly allows creatures to be and to make themselves.

Personally, I do not think that the knowledge of the universe's death on a time scale of tens of billions of years raises any greater theological difficulties than does the even more certain knowledge of our own deaths on timescales of tens of years. If there is hope, either for the universe or for us, it can only lie in the eternal faithfulness of God - a point that Jesus made clearly in his discussion of these matters with the Sadducees (Mark 12:18-27).

Of great importance here are the various New Testament passages that speak in an astonishing way of the cosmic significance of Christ (John 1, Romans 8, Colossians 1). Also important, I believe, is the witness of the empty tomb, for the fact that the Lord's glorified body is the transmuted form of his dead body speaks to me that in Christ there is a destiny not only for humanity but also for

matter, and so for creation as a whole.

A fundamental metaphysical question posed to us is whether we live in a world that is a cosmos or chaos. Does the universe make total sense, both now and always, or is its history ultimately a tale told by an idiot, full of sound and fury, signifying Nothing?

The distinguished theoretical physicist and staunch atheist, Steven Weinberg, surveying the scene from his naturalistic point of view concluded, in the light of eventual cosmic futility, that the more he understood the universe, the more it seemed pointless to him. He could only face it with a kind of heroic defiance. There is a certain nobility in that bleak point of view, but I do not believe that we are driven to embrace it. Yet if we are to be able with intellectual integrity to hold to a more hopeful view, I think this will require the acceptance of the kind of exciting, challenging, theologically thick, account that Trinitarian belief provides, as it articulates the nature of the God who is everlastingly faithful, the God who raised Jesus from the dead. Only in that faith and in that hope shall we be able to recognise that our world is indeed a cosmos after all.

Conclusion

I have sought to show that a Trinitarian metaphysics can rest comfortably and consonantly upon foundations drawn from science and culture. I have proposed that: the rationally beautiful order of the universe is consistent

with its origin in the creative activity of the divine Logos; the Anthropic fruitfulness of the universe is suggestive that it is the expression of the will and purpose of its Creator; the profoundly interconnected character of physical process encourages the acknowledgement of the foundational significance of relationality in a way that is congenial to Trinitarian thinking; the way in which physical process transcends the merely mechanical is hospitable to the idea that the divine Spirit is hiddenly at work within the world's intrinsic unpredictabilities; the profound significance of the emergence of persons, and the value-laden character of our experience, are suggestive that it is in these personal categories that we shall find the truest way to think about the nature of reality; the ultimate futility of this present universe points us to look beyond the physical world itself to the eternal faithfulness of the God who raised Jesus from the dead, for only there can be found a true ground of the hope of everlasting fulfilment.

In these different ways I find a satisfying degree of consonance between my scientific knowledge and the insights of my Christian belief, a harmony between my experiences as a physicist and my experiences as a believer and a priest. In my view, Christianity and scientific culture can live in friendly and complementary relationship with each other and I entertain the hope that the twenty-first century will see the continuation and consolidation of that amity.

The World Was Created For Christ

Christ is, then, proclaimed "firstborn of all creation" (verse 15). Christ precedes the whole of creation (see verse 17), having been begotten from all eternity: because of this "all things were created through him and for him" (verse 16). Also in the ancient Jewish tradition it was affirmed that "the whole world was created in view of the Messiah" (Sanhedrin 98b).

For the Apostle, Christ is the principle of cohesion ("in him all things hold together"), the mediator ("through him"), and the final destiny toward which the whole of creation converges. He is "the firstborn among many brethren" (Romans 8:29), namely, the Son par excellence in the great family of the children of God, in which baptism inserts us.

At this point our gaze moves from the world of creation to that of history: Christ is "the head of the body, the Church" (Colossians 1:18) and he is so already through his Incarnation. In fact, he entered the human community, to rule it and constitute it in one "body," namely in a harmonious and fruitful unity. The consistency and growth of humanity have their root in Christ, the vital pivot, "the principle."

Precisely with this primacy Christ can become the principle of the resurrection of all, the "firstborn from the dead," because "in Christ shall all be made alive ... Christ the first fruits, then at his coming those who belong to Christ" (1 Corinthians 15:22-23).

*Pope Benedict XVI
Weekly General Audience September 7, 2005
Commentary on Canticle in Colossians 1:1,3,12,15,17-18*

Scientists: Humble or Arrogant?

Peter Hodgson

In this brief reflection Peter Hodgson, Fellow of Corpus Christi College Oxford, offers some thoughts on both the scope and the limitations of science.

"If you ignore the law of gravity and jump off a cliff, then you get hurt. That is the way the world is, whether we like it or not. Similarly it is no use asking the Church to alter the moral laws."

Scientists often give the impression that they are arrogant. They are certain that what they say is true, and brush aside any objections. To some extent this is justified when they are talking about their own speciality, but not when they are talking about other aspects of science and even more when they talk about politics and other matters of general concern.

When they are researching in their chosen field, scientists take great care to make their experiments as accurate as possible, and they check and double check their own and other scientists' results. They can make mistakes, but in the end the result is reliable knowledge. They have established a feature of the way the world is, whether we like it or not.

The results scientists obtain may not be what they expected, and may even go against their previous beliefs. Max Planck, the founder of quantum theory, came from a very conservative family of scholars. He realised that the frequency distribution of the radiation emitted from a hot body is a very fundamental feature of nature. It had been measured very accurately, and he wanted to understand it.

The existing theories gave a good account of the measurements for high and low frequencies, but not for the region in between.. Planck succeeded in finding a mathematical formula that fitted the whole spectrum very accurately. He then tried to derive it theoretically by assuming that the radiation comes out in small bundles, and he planned to obtain the final result by letting the size of the small bundles go to zero. To his astonishment he found that this gave the wrong result, whereas assuming that the bundles are finite gave the correct one.

This result went against all his instincts as a physicist, and he tried for years to get round it, but without success. He was thus forced to admit that radiation is emitted in bundles that are now called quanta. In this he acted as a true scientist, humbly accepting the facts. Scientists do not impose their ideas on nature; they accept what they find and publish their conclusions. They are understandably angry if someone who knows nothing about the subject contradicts them, and this can give the impression of arrogance.

It is quite a different matter if a scientist speaks in a dogmatic way on matters outside his speciality. He is, like anyone else, entitled to his opinions, but has no monopoly of the truth. Unfortunately there are many scientists who use their scientific authority to lend weight to their views on political or moral questions. Even within their speciality, it is prudent to speak with caution, and to be always willing to give reasons for their conclusions. This is far more necessary in other matters.

Other examples are provided by scientists who deny the need for a Creator on the

basis of some very speculative theories, and by others who say that evolution just happened by chance, without ever defining chance. Quite often a declaration on some matter of public concern is issued with the signature of a thousand scientists or a hundred Nobel Prize Winners. It is then important to ask whether all those scientists really have specialist knowledge of the subject of the

asking them to alter the law of gravity. If you ignore the law of gravity and jump off a cliff, then you get hurt.

That is the way the world is, whether we like it or not. Similarly it is no use asking the Church to alter the moral laws. In both cases we just have to try to live our lives in a way that respects both the laws of nature and the moral laws.

PERSPECTIVES IN PHILOSOPHY

BY EDWARD HOLLOWAY STL

Vol.1: A Critique of Scholasticism and Principles Towards Replacement. (1993)

Vol.2: Rethinking the Existential. (1995)

Vol.3: Noumenon and Phenomenon: Rethinking the Greeks in the Age of Science. (1998)

Providing the basis of a comprehensive re-working and renewal of philosophical thinking, bringing the realist Catholic tradition into the scientific age.

Available from: 16a off Coniston Way REIGATE RH2 OLN 01737 770016 fax 01737 766907

The Mystery Revealed In Christ The True Goal Of Creation

First of all, the Father - this is the first act - chooses us from eternity so that we will be holy and blameless in love, then he predestines us to be his children, in addition he redeems us and forgives us our sins, he unveils fully to us the mystery of salvation in Christ, finally, he gives us our eternal inheritance offering us already as pledge the gift of the Holy Spirit in view of the final resurrection.

Many, therefore, are the saving events that succeeded one another in the unfolding of the canticle. They involve the three Persons of the Most Holy Trinity: beginning with the Father, who is the initiator and supreme author of the plan of salvation; fixing the gaze on the Son who realizes the plan in history; coming to the Holy Spirit who imprints his "seal" on the whole work of salvation. Let us now reflect briefly on the two first stages, that of holiness and of filiation.

The first divine gesture, revealed and acted in Christ, is the election of believers, fruit of a free and gratuitous initiative of God. In the beginning, therefore, "before the foundation of the world", in the eternity of God, divine grace was disposed to enter into action. I am moved meditating on this truth: From eternity we are before the eyes of God and he has decided to save us. This call has our "holiness" - a great word - as content. Holiness is participation in the transcendent purity of the divine Being. And we know that God is charity. Therefore, to participate in divine purity means to participate in the "charity" of God, conforming ourselves with God who is "charity."

God is love (1 John 4:8,16). This is the consoling truth that enables us also to understand that "holiness" is not a reality removed from our life, but instead, in the measure in which we can become persons who love God, we enter into the mystery of "holiness." Thus the agape becomes our daily reality. We are led, therefore, to the sacred and vital horizon of God himself.

*Pope Benedict XVI
Weekly General Audience July 6, 2005
Commentary on Cantic in Ephesians 1:3-14.*

letters to the editor

The Editor, St. Mary Magdalene's
Clergy House, Peter Avenue
Willesden Green, London NW10 2DD
editor@faith.org.uk

SERVANT OF GOD - JOHN PAUL II

Dear Fr Editor,

I would like to congratulate you on the last edition of *Faith* devoted to the late Pope John Paul.

I was so impressed that I felt compelled to write straight away. You said all that needs to be said about this marvellous man and you answered the dissenting voices decisively. Personally I would like to go further and say if any man speaks against the late Pope let him be anathema!

Let us rejoice that in Benedict XVI we have a new Pope who will follow in the footsteps of John Paul.

Yours faithfully,

R.S. Clarke
Court Oak Road
Birmingham

Dear Fr. Editor,

As I listened, during the aftermath to the papal election, to the tiresomely predictable bleatings against the Church, it occurred to me that almost all the carping critics were more than probably 'cradle Catholics', i.e. they had been the recipients of infant baptism. In other words, in common with most Catholics, their religious faith had been handed down to them from their parents, rather in the manner of an hereditary title. As young adults they had been free to choose

whether or not to continue to accept the privilege of this grace-filled silver spoon, or to spit it out and become something else.

The question that disgruntled dissenters like Odone, Walsh, Lash, Wilkins et al need to ask themselves is whether, had they not been hereditary Catholics, they would ever have chosen to convert to the faith at any point in the last thirty years?

I have a feeling that the only honest answer they could give to themselves is : "very unlikely." Oh, if only they were that bold!

Yours faithfully,

Victoria Gillick
Old Market
Wisbech
Cambridgeshire

Dear Fr. Editor,

In the last edition of Faith you devoted the majority of the magazine to praising John Paul II's teaching and personal example and then, as if the two were in no way connected, we were suddenly confronted in the letters section with the dark side of the modern Church epitomised by *The Tablet*.

The Tablet is in fact a sort of ecclesiastical brothel where anyone (except those of course who actually believe in the Church) can enter, indulge their perversion and then leave unopposed. And yet the editor of this appalling rag was awarded a medal for his "critical loyalty" by none other than John Paul II

Also in the letters section of the last issue of Faith Eric Hester pens a typical scathing criticism of an even darker side of contemporary catholic life; education. Even worse than the merging of Catholic and Anglican schools, are the dreadful post Vatican II school catechisms with

their diabolical omissions of vital doctrine, teeming with neo-heretical nuances and ambiguities. Such things cried out for rapid condemnation and remedial action from Rome, yet under the leadership of John Paul II what happened? Very little if anything.

I am forced to the conclusion that the late Pope, while having very great qualities, was highly deficient in his executive duties. The contrast with Pope Pius X is striking. My advice to those concerned is to rein in the canonisation process until these shortcomings are looked into. Much as I deplore her publication, I think that the editor of *The Tablet* has a point when warning us not to judge on the basis of personality. Popular acclaim is not the voice of God.

Yours faithfully,

J. Allen
Seymour Drive
Torquay

HOMOSEXUAL MARRIAGE

Dear Fr Editor,

Your latest article on homosexual 'marriage' is better in tone and content than it would have been ten, perhaps even five, years ago. But it still misses the main point: which is financial.

What most homosexual men in long term partnerships want is not 'marriage' - impossible - or the adoption of children, but the right to inherit their partner's assets, as wives do, without paying horrendous death duties. They also ask for the right to the wife's pension that the partner has paid for. If the Catholic Church would address these issues - just some sign of it now - there would be much less clamour from certain

homosexuals for 'marriage' etc. It would also make it easier to preach Our Lord's message to homosexual men.

The lay world is just beginning to realise - if only the same were true for the clerical world - that homosexual men are perfectly normal people. It is just that,

through some quirk not of their own choice, they are looking at the men, not the women, in the street.

Yours faithfully,

*D.M. Dell
Bryanston Place
London W1*



All The Essentials Of The Faith

Twenty years ago, work began on the Catechism of the Catholic Church that had been requested by the extraordinary Assembly of the Synod of Bishops held on the occasion of the twentieth anniversary of the close of the Second Vatican Council.

I am filled with heartfelt thanks to the Lord God for having given the Church this Catechism, promulgated in 1992 by my venerated and beloved Predecessor, Pope John Paul II.

The great value and beauty of this gift are confirmed above all by the extensive and positive reception of the Catechism among Bishops, to whom it was primarily addressed as a sure and authentic reference text for teaching Catholic doctrine and, in particular, for formulating local catechisms. But it was also confirmed by its vast favourable reception in all segments of the People of God, who have come to know and appreciate it in more than fifty translations which to date have been published.

It is with great joy that I now approve and promulgate the Compendium of that Catechism.

The Compendium had been fervently desired by the participants in the International Catechetical Congress of October 2002, which gave voice to a need widely felt in the Church. My beloved Predecessor, recognizing this desire, decided in February 2003 to begin preparation of the text by entrusting the work to a Commission of Cardinals, over which I presided, and which was assisted by various experts. In the course of the work, a draft of the Compendium was submitted to all the Cardinals and the Presidents of Conferences of Bishops, the vast majority of whom evaluated the text favourably.

The Compendium, which I now present to the Universal Church, is a faithful and sure synthesis of the Catechism of the Catholic Church. It contains, in concise form, all the essential and fundamental elements

of the Church's faith, thus constituting, as my Predecessor had wished, a kind of vademecum which allows believers and non-believers alike to behold the entire panorama of the Catholic faith.

In its structure, contents and language, the Compendium faithfully reflects the Catechism of the Catholic Church and will thus assist in making the Catechism more widely known and more deeply understood.

I entrust this Compendium above all to the entire Church and, in particular, to every Christian, in order that it may awaken in the Church of the third millennium renewed zeal for evangelization and education in the faith, which ought to characterize every community in the Church and every Christian believer, regardless of age or nationality.

But this Compendium, with its brevity, clarity and comprehensiveness, is directed to every human being, who, in a world of distractions and multifarious messages, desires to know the Way of Life, the Truth, entrusted by God to His Son's Church.

Through the intercession of Mary Most Holy, Mother of Christ and Mother of the Church, may everyone who reads this authoritative text recognize and embrace ever more fully the inexhaustible beauty, uniqueness and significance of the incomparable Gift which God has made to the human race in His only Son, Jesus Christ, the "Way, the Truth, and the Life" (Jn 14:6).

Given on 28 June 2005, the vigil of the Solemnity of the Holy Apostles Peter and Paul, in the first year of my Pontificate

BENEDICTUS PP. XVI

sunday

b y s u n d a y

32ND IN ORDINARY TIME: A
06.11.05, Mt 25, 1-13

The word 'sensible' in this gospel is the same one Matthew uses in the first part of his famous phrase, "Be cunning as serpents, but harmless as doves" (Mt 10, 16). The meaning of the word is a practical and street-wise wisdom. A snake is a born survivor, always living to fight another day if at all possible. The servants of the kingdom of heaven must have their eyes open to the things of God as a priority in a similar way. Watchfulness before the Lord, never losing sight of the reality of death and eternity, characterizes Christian living.

But it can be objected that the sensible virgins showed great want of feeling towards their sisters in the parable. Surely we should share and share alike? This is to miss the point: if any oil were surplus it would have been carefully distributed. The sensible virgins are merely unwilling to have their wise provision undone by the foolishness of their friends. Their hearts are firmly fixed on the unknown but immanent arrival of the bridegroom. All else is secondary. Showing firmness of purpose and decisiveness is not cruel, but rather focused in the way necessary for the kingdom.

Do we ever let people or things undermine our resolve as Catholics? Do we, for instance, relax our obligation to attend Sunday Mass without fail in favour of shopping or sport or car boot sales? We should be able to do all these things and go to Mass as well. But if there is a clash, where does attending the Bridegroom, who is Christ, come on

our list of priorities? It is just such practical considerations that Matthew had in mind when he recorded this story for a Church under persecution. Where do we stand with things that matter?

33RD IN ORDINARY TIME: A
13.11.05, Mt 25, 14-30

"So you knew that I reap where I have not sown and gather where I have not scattered?" (Mt 25, 26). If these words alarm us, then we may be beginning to understand the parable. The kingdom of heaven is an exacting challenge which passes by no man. All are required to render account of the gifts given to us on trust by God. He is our Father, who schools us for all he expects from us. Grace is never wanting. But we have to deliver. He has not made us in vain. We do have an earthly purpose.

Our happiness lies in finding this purpose. As Cardinal Newman wrote, "I may not know it in this life, but I shall be told it in the next". We cannot cheat or escape our destiny, or will it away. God loves us too much for that. He does not make rubbish; and He alone is the true environment for us to come to terms with ourselves. If God makes demands on us, he has a perfect right. As our Creator and Lord, he has called us into eternal bliss. Can he be faulted if he expects us to come?

God does not judge us: it is we who judge ourselves. Just as our every day actions and choices determine the sort of people we will become during this life on earth, so too those same actions and choices have the potential to fit us for heaven or hell. They form a blueprint for eternity. If we have shown no desire to be with God in heaven during life, then we don't have to be. But this is Hell and the hiding of our talents. We are made by God for Him. Outside him there is only thick darkness.

FEAST OF CHRIST THE KING: A
20.11.05, Mt 25, 31-46

"As king he claims dominion over all creation that he may present to you, his almighty Father, an eternal and universal kingdom" (Preface of Christ the King). Jesus is Lord of Creation and Lord of Human History. The vision that sees Our Lord as the Master-Key to the meaning of the universe adds a new and dynamic perspective to this magnificent feast. If all matter evolves toward the creation of man, then the whole history of mankind is orientated towards the coming of God-made-man. Jesus unlocks the entire purpose of the cosmos in his taking on our flesh.

And the reason he should do this is so that he can re-present to the Father a creation made worthy of his name through the flesh of the Son. Redeemed from sin and bondage to death, mankind and the cosmos created for him and for his flesh are offered back to the Creator in one all consuming act of love. Health, wellbeing and fulfilment come to man only through Christ, because only through him are we led back to full communion with God, who is our true environment. In him we live and move and have our being.

And all this is made real, effective and present through the self-offering of Christ in the Holy Mass. Under sacramental signs and by the ministry of priests wholly configured to Jesus in their very persons through ordination, Our Lord offers his own one sacrifice of Calvary back to the Father on our account. Earth is joined to heaven, and man is reunited once more to the God who made him, without whom he cannot exist or find any true purpose. In Christ the whole of creation, with mankind at its centre, becomes an eternal and universal kingdom laid before the Father.

FIRST OF ADVENT: B
27.11.05, Mk 13, 33-37

If Advent means preparing for the coming of the Lord, then we must look to our hearts to see if they are fitting places to receive him. It does not matter whether we are rich or poor, low or high, successful or struggling. All that matters is that he finds a place to nurture the young and vulnerable life of grace in us. As St John of the Cross wrote: "The Virgin made pregnant down the road comes walking, if you'll grant her a room in your abode". May Jesus be born in us.

Our Lord was content with straw in a manger. He does not require much from us, only some place of sustenance offering survival. Though he is God, he allows his life in us to be totally dependent on our reaction to him. Like Mary and Joseph, we must decide what to do with him. Do we listen to the promptings of the Spirit inspiring love, devotion and protection, or do we ignore the still small voice of calm that cries out to us like the sound of a newborn child? God is both greater and smaller than we imagine.

God has set each one of us a task in his household (cf. Mk13, 34). Away from the home for a short while, just as Jesus returns to the Father after his Ascension, he will surely return soon to see how well we have completed our tasks, just as the Son of Man will return in judgment at the end of time. This is why we must stay awake and be on our guard at all times: the Master will come at a time we do not expect and we need to give a good account of our lives.

SECOND OF ADVENT: B
04.12.05, Mk 1, 1-8

"And so it was that John the Baptist appeared in the wilderness" (Mk 1, 3). Exegetes argue whether the voice

itself cries in the wilderness or whether it merely cries: "In the wilderness prepare a way for the Lord" (Mk 1, 2). Be that as it may, no-one can properly understand the bible unless he experiences the bleakness of the Negev desert. Jacob's struggle with God in Genesis, David's flight before Saul in the Books of Samuel and the temptations of Christ are all coloured by wilderness.

Yet the desert retains its own fascination. Its purity and uncompromising isolation, even its very harshness and danger, speak to some of the need for a new start, a purgation of dead actions and attitudes in favour of personal and social renewal. The Essenes had settled around Qumran for just such purposes, as they reacted against the Temple and its stranglehold on the Mosaic Law. Gathered around the Teacher of Righteousness, whom they regarded as the Messiah, the Essenes studied Scripture and drew converts into the desert seeking greater fidelity to God.

Against such a background, John the Baptist emerged. Many speculate about the influence of Qumran on this great prophet. It is impossible to say with certainty, but his action in going into the wilderness and bringing about a campaign of repentance and renewal was very much in the Essene tradition. The Messiah for him, though, was not a reclusive leader of a sect, but the carpenter from Nazareth, his cousin. Prompted by the same Spirit who brought about his own extraordinary birth, John prepares a penitential people to welcome Jesus. We are in that same tradition during Advent.

THIRD OF ADVENT: B
11.12.05, Jn 1, 6-8.19-28

The Baptist appears here in the Prologue of the Fourth Gospel and in

a few verses of the main body of the text. He functions as a witness to the Light (Jn 1, 8) rather than in any other capacity. He speaks to such effect for the Light that the authorities become worried about him, clearly fearing a Messianic imposter. But John's whole ministry is characterized by humility, truth and service of God: "There stands among you - unknown to you - the one who is coming after me; and I am not fit to undo his sandal-strap" (Jn 1. 27).

The Baptist could have worked the crowd, as the religious authorities well knew, but did not. He stayed humble. The people hung on his words, and he could have said anything he liked, but did not. He spoke only the truth. John could have served himself, and many would have obliged his whims, but he did not. He served only God. The desert purified and honed John as the instrument of God, as the one who would span the two Testaments of Scripture and point only to Jesus, the Light who was coming into the world (Jn 1, 1-8).

Whatever our talents are, God comes first. If we want the kind of interior happiness, joy and peace amidst hatred and injustice that the Baptist enjoyed, then we must work constantly to put God at the centre of our lives and to keep him there. This means making our spiritual lives top priority. Do we have a spiritual heartbeat, gained by unfailing attendance at Sunday Mass? Do we pray, setting aside quality time to waste with God? Do we ever go on retreat, taking ourselves apart from our routine to see things more deeply with the eyes of faith?

FOURTH OF ADVENT: B
18.12.05, Lk 1, 26-38

The archangels of God have names denoting the service they perform for God. Thus Raphael brings the healing

of God to those whom he visits, as his name implies, whereas Michael, whose name means "Who is like to God?", defends the honour of God before human or angelic pride. Gabriel brings the strength of God, and is therefore sent to Mary to ask her to cooperate with God. Mary's answer is her own and freely given, but the strength of God to make her choice comes through the presence of the divine messenger. Unlike Zechariah (Lk 1, 18-19), Mary did not doubt.

Mary's inquiry (Lk 1, 34) is legitimate because the supernatural conception of the child prophesied in her case is utterly unique. She needs the assurance and strength of Gabriel to understand her choice sufficiently. In Zechariah's case (Lk 1, 19-23), the conception of the child will be through natural intercourse, and he doubts the truth of the words of an archangel who appears to him directly in front of the Throne of God in the Holy of Holies of the Temple. In such circumstances, doubt in the strength of God to fulfil his promise is an affront to God's majesty.

If Mary had said no to the archangel, then mankind would have been irretrievably damned. None other had been predestined in the mind of God for the fulfilment of his purpose than the Virgin of Nazareth, sinless from the first moment of her life through the redeeming merits of her Son applied retrospectively. She could have declined to cooperate in the plan of God's mercy, and her choice would have been respected. But Mary did give her assent to the angel. She allowed herself to be used by God for our benefit in the sublime work of the Incarnation.

CHRISTMAS DAY

FEAST OF THE NATIVITY (YEAR B)

25.12.05, Jn 1,1-18

John's whole purpose in his gospel is to show that the words and works of Jesus were those of the pre-existent Word, living eternally in the blessed communion of the godhead (Jn 1, 1ff). John the Baptist is the first witness to this, as he speaks of his younger cousin: "He who comes after me ranks before me because he existed before me" (Jn 1, 15). The Baptist testifies to a truth that plumbs even the depths of God. His words are a vital part of the Prologue and show his own vocation as the precursor of the Word.

The inspiration behind the evangelist's sublime poetry combines simple, even stark phrases with a measured and majestic expression that leads the human heart heavenwards. Echoes of Genesis 1, 1ff are deliberate, as the provenance of the Word in the creative work of God is explored. No word in the first few phrases of the Greek is more than two syllables long (Jn 1,1-2), as the word on the page reveals the Word who is God in inspired and clipped language. The Word lives in Gospel literature just as powerfully as He lived in the flesh two thousand years ago.

And that flesh is as real today as it was when the young evangelist first saw the Lord (Jn 1, 37). Eucharistic adoration underlines this reality when we deliberately and delightedly worship the Host exposed in the monstrances of the Catholic Church. What we feed on at Mass is there to be adored in the tabernacles of our churches: "The Word was made flesh and dwelt amongst us" (Jn 1, 14). The Catholic Church, founded by Christ on the rock of Peter (cf. Mt 16, 16), continues to make flesh his abiding presence among us. Every day is Christmas.





AN INTELLIGENT PERSON'S GUIDE TO RELIGION

by John Haldane, Duckworth, 224pp,
£12.99

This book is not simply an intelligent person's guide to religion, it is an intelligent guide by an intelligent author for intelligent people. John Haldane is Professor of Philosophy at the University of St Andrew's. His book brings the incisive mind of a philosopher to the vexed question of religious belief in the modern world. His thoughts are expressed in the lucid, simple style of the best philosophical writing.

With such a broad topic it is necessary for the author of a small book to refine his focus. Haldane does this in his introduction. He says that the book is not primarily a textbook or the typical layman's introduction. Neither is it an explicit apology for religious belief. Instead 'its purpose is rather one of an engaged, broadly philosophical, exploration of the position of religion in the contemporary world.' Haldane says, 'I wish to confront the suggestion that religion has no proper role to play in the intellectual, moral and... spiritual life of educated and intelligent persons.'

With this ambition always keenly focussed we are taken through eight chapters that consider the contemporary importance of religion and its role in Science, Ethics, History, Values, Art, and the large questions of life's meaning before finally considering the doubts of philosophers. There is an excellent 'further reading' list as well as a full index.

In fact, Haldane's book is an important apologetic work, and all

the more important for not being explicitly apologetic. He approaches his topic with the professional objectivity of the philosopher, and dissects the arguments against religion with a careful combination of logic, common sense, suggestion and clear statements of the sustainability of certain arguments, and how far an idea may be pressed before it gives way. At the same time he cuts expertly through sentimental arguments, exposes utilitarianism, special pleading and red herrings.

The first section shows the importance of religion in the world today, and exposes the fallacies of the sociologists of the 1960s who predicted the collapse of religion in the modern world. In fact, religion is on the increase, and the 21st century promises to be perhaps the most religious era since the Middle Ages. In his second section Haldane takes on Richard Dawkins and evolutionism. Building on Behe's work on 'intelligent design', Haldane takes risks to argue cogently for the necessity of a designer. At the same time he shows how there need be no essential clash between true science and true religion.

Haldane's third section on the problem of evil is carefully reasoned, and brings to light the unique contribution of Christian thought with its emphasis on human will and divine vulnerability. The section may have been strengthened with a more detailed analysis of the relationship between choice and evil, but overall the chapter is a clear and reasonable explanation. Chapter Four looks at religion and the meaning of history and asks whether 'meta narratives' are possible. Haldane takes quite a long time with this chapter and he may have strayed off the point somewhat into contemporary politics and historical theory. Nevertheless, the chapter makes one think again about different perspectives on history and the necessity for an overarching story to make sense of

man's path on earth.

From this position Haldane goes on to explore religion's relationship with values and purpose, its relationship with Art and the Aesthetic and its necessity for making sense of life, death and the meaning of life. All of these sections build carefully on what has gone before and complete the original purpose, of providing an overview of religion's relevance in the modern world. The final chapter is a round up of contemporary philosophical positions. Addressing a profession in which atheism seems to predominate, Haldane offers a critique and an invitation back into theism.

This is a finely written, intelligent and exciting guide to religion in the modern world. It is accessible, absorbing and highly recommended. Duckworth are to be congratulated for publishing it, and Haldane is to be congratulated for producing a text that does not duck the issues, but approaches them with a clear head and an inspired heart.

Dwight Longenecker
Chippenham

Dwight Longenecker is the author of Adventures in Orthodoxy and Catholic Truth Society's series, Christianity Pure & Simple.

He can be contacted at www.dwightlongenecker.com

ST JOSEMARIA ESCRIVA AND THE ORIGINS OF OPUS DEI: THE DAY THE BELLS RANG OUT

by William Keenan, Gracewing, 316pp,
£15

Cardinal Dionigi Tettamanzi of Milan, a vocal exponent of an international crusade for social justice, gained much attention in 1998 by comparing the influence of the founder of Opus Dei to that of St

Benedict and St Francis of Assisi. All three were initiators of movements that had a direct inspirational impact upon daily lives and the spiritual welfare of men and women in all walks of life. A clear acknowledgement of Josemaria's impact was evidenced by the witness of tens of thousands of the international community of lay people attending the canonization of the new saint by Pope John Paul II in St Peter's Square on 6 October 2002.

In many ways Josemaria Escriva's teaching that ordinary work is the means of sanctification and apostolate for all was not far removed from the 'laborare est orare' of Benedict or the teaching of Francis that a better world and salvation were within everybody's grasp within the ambit of Divine Love and personal commitment. It is not unconnected, either, with the great Jesuit apostolate summarized in the propagation of the devotion of the Morning Offering or, indeed, with what Cardinal Manning meant in the nineteenth century by 'practical Christianity' rooted in the bedrock of prayer. The important achievement of Escriva was that, in a violent and materialistic age, he brought to the forefront a greater consciousness of an essential but often neglected central tenet of Christianity, the need for personal sanctification through the proper fulfilment of daily labour and its concomitant charitable outreach. Essentially a lay movement, Escriva stressed in Opus Dei the implications of a universal call to holiness and posited the need for a conscious awareness of the interior life based on prayer, commitment and dedication.

A man of his time, Escriva was greatly affected by the problems created in and by the institutional church in Spain in the early twentieth century as well as by the cruelties and inhumanity the Spanish Civil War brought to his native land. In trying

to come to terms with the formative influences of Escriva's early life, William Keenan adopts an amalgam of biographical, historical and spiritual approaches. Such a literary approach undoubtedly needs skilful handling to avoid what happens here, the adoption of an almost staccato-like presentation. The history of the Civil War, for instance, is vividly illustrated in relation to its day-to-day impact upon the fortunes of Josemaria and the few close friends who formed the nucleus of Opus Dei but there is scant attempt to discuss the underlying political, ecclesiastical and social situations that gave rise to the horrors of societal breakdown upon such a large scale. Similarly, one would have liked to read more about the early Jesuit influence upon Escriva, particularly after the selection of Valentin Sanchez SJ as his spiritual director in 1930. Josemaria was to attribute some inspiration of the choice of the name Opus Dei to Sanchez who had considered Escriva's mission as a 'work of God'. Sanchez was also particularly instrumental in curbing Josemaria's early zeal for harsh mortification.

What does present itself strongly in Keenan's account of Escriva's early life, however, is the personal magnetism the latter emanated almost instantaneously in regard to those with whom he came into contact. Ricardo Fernandez, then a student, noted in his diary on 14 May 1933: 'Today I met a priest, very young and enthusiastic. I don't know why, but I think he will have a great influence on my life,' (p.143). This is an interesting reflection from a young man not yet committed to the cause or, indeed, fully understanding it. His judgement is endorsed by Pedro Casciaro, whose great grandfather was not only English but from a strongly anti-clerical background, when Pedro met Escriva in January 1935. Pedro subsequently noted 'a young thirty-three-year-old priest

who was energetic, cordial and kind, very spontaneous and natural' right from the start 'infused into me both great confidence and, at the same time, a respect for him far beyond what I owed simply to his years', (p.173). Keenan is able to build up an excellent biographical cameo of his subject by the judicious use of such quotations taken from the records of those who met and worked with Escriva in the very early years of the foundation of Opus Dei.

The book ends with the adventures in the great privation of Josemaria and seven companions escaping across the Pyrenees to the safety of Andorra, away from what was described as 'this hell on earth where God cannot even be mentioned' to a place where the spiritual message could not only be sustained but safely propagated. This constitutes the beginning of a new adventure and it is hoped Keenan will now take the story beyond the origins of the movement.

*Prof V. Alan McClelland
Leconfield
East Yorkshire*

CELEBRATING THE MASS. A
PASTORAL INTRODUCTION
*Catholic Bishops' Conference of
England and Wales, CTS, ix+117 pp,
£7.95*

Celebrating the Mass (CTM) is "recommended reading for all liturgical ministers - clergy, liturgy preparation teams, musicians..." The intention is that it should serve as a pastoral guide to the General Instruction of the Roman Missal (GIRM) simultaneously published in the edition for England and Wales. Coming from the Bishops' Conference, it carries a certain weight but its authority is uncertain. It is not, for example, an official interpretation with a recognition from the Congregation for Divine Worship.

It therefore seems legitimate to examine the document critically. It is to be welcomed that attention is paid to the liturgy of the Mass so that it can be celebrated "more faithfully, reverently and fruitfully." (CTM Foreword) It is good to see that CTM gives "pride of place" to Gregorian chant, (81) that it gives priority to the priest saying the "prayers over the gifts" quietly and it recommends an organ voluntary rather than a "final hymn" at the end of Mass. CTM 114 also gives a reminder that only genuine wax candles should be used at Mass and not fake "candles" with inserts.

However, CTM has throughout a flavour of 'liturgical correctness' by which I mean those fastidious, almost scrupulous unofficial rubrics that are not part of the GIRM or the Missal itself. Thus, for example, "Vessels for the body of Christ preferably have the form of plates or shallow bowls rather than of chalices or reliquaries." (CTM 109) I am not sure what kinds of vessels are commonly in use that look like reliquaries but the chalice-shaped ciborium with a lid is often used conveniently for the distribution of Holy Communion to large numbers of people. The GIRM does not in any way limit the use of such vessels and refers usually to the "ciborium" whilst accepting that a "large paten" may appropriately be used.

Another example is the recommendation that a large jug and basin with "generous quantities of water" and a towel be used for the *lavabo*. (CTM 110) This recommendation is nowhere to be found in the GIRM or the Roman Missal and we may feel that such exaggerated theatrical symbolism is more appropriate to the school assembly than the celebration of Mass.

CTM recommends two new pauses for silence in the Mass; after the *Orationes fratres* (CTM 185) and after the end of the Eucharistic

Prayer before what it calls the "breaking and sharing." (CTM 199) We can easily imagine the didactic emphasis that will be given in some places to these separations of the different parts of the Mass. Again, this is a purely local innovation with no basis in any of the liturgical documents.

There is a hint (CTM 173) that the Hail Mary should be dropped from the Bidding Prayers ("the Roman Rite does not envisage the inclusion of devotional prayers in the Prayer of the Faithful".) In a document produced specifically for England and Wales it would be more appropriate to recall that Bishop Wheeler encouraged the Hierarchy of England and Wales in 1965 to include the Hail Mary in the newly restored "Prayer of the Faithful." He referred to the ancient custom in England of the Bidding Prayers where the Hail Mary was included because of England's notable devotion to Mary and her privilege of being the Dowry of Mary. It seems a shame to discourage this tradition based on genuine and ancient local custom.

In fact, the emphasis given to different parts of the Mass and even their interpretation is in many cases not supported by the official liturgical books. One could be forgiven for thinking that the most important parts of the Mass are the Bidding Prayers, the Offertory Procession and the Fraction.

On the fraction, there is the inevitable recommendation for the use of "larger breads" so that everyone receives a fragment of the one large Host. (CTM 206) No mention is made of the provision of GIRM 321 that small hosts are "in no way ruled out" (*minime excluduntur*.)

Alongside the many "liturgically correct" additions, there are some important omissions which tend to reinforce the particular "style of liturgy" that is promoted by CTM. The GIRM refers to "sacred vessels" and "sacred garments": CTM speaks

of "vessels" and "garments." Nothing is said of the sanctuary lamp. (Cf. GIRM 316, CTM 100) The communion plate is not mentioned in CTM: *Redemptionis Sacramentum* 93 says that it "should be retained." The GIRM (118) says that it is praiseworthy to cover the chalice with a veil: CTM ignores this. Perhaps it will be said that these are relatively minor matters and that CTM cannot cover everything.

A more important omission relates to the consecration at the Mass. Describing the various rituals in the Eucharistic Prayer, no mention is made of the bell and the use of incense at the consecration. (Mentioned in GIRM 150) The use of the bell and incense do, of course, emphasise the "moment of consecration." So also does the GIRM's instruction for concelebrants which states that they should speak "in a very low voice" (*submissa voce* in the original) "especially the words of consecration."

CTM 194 undermines this focus on the words of consecration when it says of the institution narrative. "This narrative is an integral part of the one continuous prayer of thanksgiving and blessing. It should be proclaimed in a manner which does not separate it from its context of praise and thanksgiving." The rubric of the Roman Missal before the consecration in English states "The words of the Lord in the following formulas should be spoken clearly and distinctly, as their meaning demands." The Latin text has "*prouti natura eorum verborum requirit*" or literally "according as the nature of the same words requires."

In fact, this rubric has a history of its own. When the Rite of Mass was being finalised, Pope Paul VI gave an audience to Fr Bugnini on 22 January 1968 in which he gave his written comments on the proposed Mass including "As already noted, the words of consecration are not to be recited simply as a narrative but with

the special, conscious emphasis given them by a celebrant who knows he is speaking and acting 'in the person of Christ.'" This was the reason for the insertion of the rubric we have mentioned. Its precise purpose is therefore to encourage the priest to do exactly the opposite of what CTM 194 enjoins.

There is a most unfortunate expression concerning the people's Amen at the end of the Eucharistic Prayer. CTM 198 says that the Eucharistic Prayer is "ratified" by the people's Amen and that the Amen should be sung or spoken loudly in order to emphasise "the assembly's ratification and acclamation." (CTM 199) The GIRM simply says that the final doxology is concluded and confirmed by the people's Amen. We must hope that it is simply a confusion or looseness of terminology in CTM since Pope Pius XII in *Mediator Dei* spoke of those who "go so far as to hold that the people must confirm and ratify the sacrifice if it is to have its proper force and value." and said "it is in no wise required that the people ratify what the sacred minister has done."

The GIRM stipulates that "The faithful communicate either kneeling or standing, as determined by the Conference of Bishops" (GIRM 160) It then recommends that if they receive standing, an appropriate act of reverence, "as determined by the same norms" should be made before receiving the sacrament. Many good Catholics bow reverently or genuflect before receiving Holy Communion. There seems no good reason to discourage this devotion which is entirely in accord with the obvious meaning of the GIRM. However, CTM 210 says that in England and Wales the faithful make their act of reverence through the "action of walking solemnly in procession." Not wishing to be impolite, I have to say that this idea is so far-fetched that I fear I must have misunderstood it.

Redemptionis Sacramentum 90 lays down that the determination of the Bishops' Conference regarding

the method of receiving Holy Communion should receive the recognition of the Apostolic See. One can only hope that the proposal that walking up to receive Communion is itself an act of reverence is submitted to the Congregation for Divine Worship for their consideration.

Many of the emphases of CTM remind one of the observation of Cardinal Ratzinger at the 2001 Fontgombault conference, that new liturgical practices tend to be observed "with a degree of conformity which has long ceased to exist where the norms of ecclesiastical authority are concerned." Given that since the publication of CTM he has now been

elected Pope, it is perhaps more likely that the debate on the new liturgical movement which he eloquently promoted in *The Spirit of the Liturgy* may receive a spur. In the meantime one would have to offer the opinion that the pastoral priest should have no scruples in deciding which elements of CTM genuinely serve the devotion and spiritual life of the people who participate in the sacred liturgy, and which are simply an unfortunate genuflection to liturgical fashion.

*Fr Timothy Finigan
Our Lady of the Rosary
Blackfen*

The Warnings of The Prophets Also Apply To Us!

The Lord, in both the Old and New Testament, announced the judgment of the unfaithful vineyard. The judgment that Isaiah foresaw has been realized in the great wars and exiles imposed by the Assyrians and Babylonians. The judgment, announced by the Lord Jesus, refers above all to the destruction of Jerusalem in the year 70.

But the threat of judgment affects us also, the Church in Europe, the Church of the West in general. With this Gospel the Lord also cries out in our ears the words he addressed in Revelation to the Church in Ephesus: "I will come to you and remove your lamp stand from its place, unless you repent" (2:5). The light can also be taken away from us, and we would do well to allow this warning in all its seriousness to resonate in our souls, crying out at the same time to the Lord: "Help us to be converted! Give us the grace of an authentic renewal! Do not permit the light to be extinguished among us! Reinforce our faith, our hope and our love so that we can bear good fruit!"

At this point, a question arises: "But, is there not a promise, a word of consolation in today's reading and evangelical page? Is the threat the last word?" No! There is a promise and it is the last word, the essential one. We hear it in the alleluia verse, taken from John's Gospel: "I am the vine, you are the branches. He who abides in me, and I in him, it is he that bears much fruit" (John 15:5).

*Papal Homily at Opening of Synod of Bishops
2 October 2005*

CONFESSION: WHY WE GO
CHRIST OUR EUCHARIST
SEXUAL ORDER AND HOLY ORDER
CHRISTIAN MARRIAGE: COVENANT IN CHRIST
THE PATH FROM SCIENCE TO JESUS CHRIST
THE PATH FROM SCIENCE TO GOD
EVOLUTION AND THE EXISTENCE OF GOD
EVOLUTION AND ORIGINAL SIN
CHRISTIAN FORMATION
THE PRIEST AND HIS LOVING
MARY, MODEL OF THE CHURCH
THE GOSPELS, HISTORICAL AND TRUE
CHRIST AND HIS CHURCH: WHY INFALLIBLE ?
JESUS: DID HE KNOW WHO HE WAS?
THE GRACE OF GOD
NUCLEAR WAR: THE DEEPER ISSUES
CAN WE BE SURE GOD EXISTS?
WHAT MAKES MAN UNIQUE?
JESUS CHRIST OUR SAVIOUR
JESUS CHRIST OUR REDEEMER **NEW**

JAMES TOLHURST
EDWARD HOLLOWAY
EDWARD HOLLOWAY
ANDREW AND DORA NASH
EDWARD HOLLOWAY
ROGER NESBITT
ROGER NESBITT
ROGER NESBITT
EDWARD HOLLOWAY
EDWARD HOLLOWAY
ROGER NESBITT
DOMENICO GRASSO SJ
EDWARD HOLLOWAY
EDWARD HOLLOWAY
EDWARD HOLLOWAY
EDWARD HOLLOWAY
REASONS FOR BELIEVING SERIES
REASONS FOR BELIEVING SERIES
REASONS FOR BELIEVING SERIES
REASONS FOR BELIEVING SERIES

Name
Address

TOTAL [£1 each]

P & P [+10 p each]

Boxtenders discont. 10%

DONATION

FINAL TOTAL

**A special series of
pamphlets from Faith
Movement**

REASONS FOR BELIEVING

Short, straightforward, up to date and well argued pamphlets on basic issues of Catholic belief, this new series will build into a single, coherent apologetic vision of the Christian Mystery. They bring out the inner coherence of Christian doctrine and show how God's revelation makes sense of our own nature and of our world. Four excellent pamphlets in the series are now in print:

Can we be sure God exists?
What makes Man unique?
Jesus Christ Our Saviour
Jesus Christ Our Redeemer

NEW

ORDER YOUR COPIES NOW
see order form above

notes from across the



by Richard John Neuhaus

WAR ON CERTAINTY

Charles Krauthammer has about had it with the new war on certainty, as he calls it. Doubt is in, conviction is out. He notes the recent cover article in the New Republic lauding the "conservatism of doubt", as well as the big flop of a Hollywood movie that depicted the Christians and Muslims of the Crusades as champions of inter-faith understanding. Of course the war on certainty is very specifically aimed at the most dangerous of certainties, those that are suspected of being rooted in religion. Such convictions, he writes, are criticized as "a deep violation of the tradition of American pluralism, ecumenism, modesty and sceptical restraint". Krauthammer concludes: "That widespread portrayal is invention masquerading as history. You want certainty? You want religiosity? How about a people who overthrow the political order of the ages, go to war and occasion thousands of deaths in the name of self-evident truths and unalienable rights endowed by the Creator? That was 1776. The universality, the sacredness and the divine origin of freedom are enshrined in our founding document. The Founders, believers all, signed it. Thomas Jefferson wrote it. And not even Jefferson, the most sceptical of the lot, had the slightest doubt about it."

BUSH VS CALVIN

I see that President Bush gave Calvin College in Grand Rapids some unwonted (and maybe unwanted) public attention. He accepted the college's invitation to give the commencement address, and a hundred faculty took advantage of the occasion to register their disagreement with him and his policies. They published a letter

declaring, "We seek open and honest dialogue about the Christian faith and how it is best expressed in the political sphere ... [W]e understand that no single political position should be identified with God's will, and we are conscious that this applies to our own views as well as those of others." The smarminess of that statement is reflected in the form of the faculty protest. The letter includes four paragraphs, each beginning with the phrase "As Christians we are called" and continuing with "We believe", followed by specifications of how the policies of the Bush administration allegedly violate the course to which Christians are called. In each of the four paragraphs (offering the usual left-of-centre litany of Democratic complaints against the administration), the signers are saying that Bush is failing to act as a Christian should. What a Christian should do, readers might be excused for thinking, is rightly "identified with God's will." The form of the protest amounts to this: "It is God's will that we do no evil. We believe your administration is doing evil." The signers say, for example, "We believe your administration has launched an unjust and unjustified war in Iraq." Since God calls us "to be peacemakers and to initiate war only as a last resort," it follows that they believe Bush has acted contrary to God's will. At the end of the letter, they ask the president "to reexamine your policies in light of our God-given duty", etc. They do not say anything about reexamining their own preferred policies. And then there is the simple bad manners of insulting an invited guest of the college. Said Dale Van Kley, who taught history at Calvin for twenty-eight years, "I can see that the Bush administration is gaining capital from this appearance, but I don't see what it does for Calvin." Presumably the president of the United States needed a platform and was exploiting

the national prominence of Calvin College in Grand Rapids, Michigan. The thought occurred to me that the faculty protest was cooked up by the public-relations department of the college to get the school some attention, but then I realized that, "as Christians", they would never do anything like that.

THE MIND OF BENEDICT

Sorry for the interruption, that was another reporter wanting to know what Pope Benedict really thinks. They of a fervently investigative bent say it is hard to figure out what he believes and therefore what we might expect from him. Back in May, nine of the top sixty-nine books on the Amazon bestseller list were by Joseph Ratzinger (another was by John Paul II). They include everything from discussions on the Trinity, the reform of the liturgy and the conflicting interpretations of Vatican II to his early and engaging Introduction to Christianity. To get a sense of the man and his perspective on both himself and the state of the Church, one might begin with Salt of the Earth. Excuse me, there is another reporter on the line. I suppose it would be impolite to suggest that reading a person is a really great way to find out what he thinks.

NEW POLITICAL TEXTBOOK

"God is Neither a Republican nor a Democrat." For some reason, that slogan, variously phrased and appearing on bumper stickers and graduation caps, is taken to be a protest against the Bush administration. James Nuechterlein, senior fellow at the Institute for Religion and Public Life, thinks it cuts in all directions. Reviewing Jim Wallis' best-selling God's Politics: Why the Right Gets It Wrong and the Left Doesn't Get It, he says of the author's policy proposals: "A moment's perusal of this litany of 'religious issues', each of them

framed in a similarly tendentious manner and accompanied by presumably appropriate biblical citations, would persuade any half-aware voter that God is most certainly not a Republican and that, while He might not be a registered Democrat, that is definitely the way He would be voting this time around. In treating the Bible as a textbook in political economy, Wallis is strikingly unaware of how he mirrors his opponents on the religious Right, whose propensities in this regard he equals if he does not exceed. In almost every case, he knows with blessed assurance what God requires. 'A budget based on a windfall of benefits for the wealthy and harsh cuts for poor families and children is,' he proclaims, 'an unbiblical budget.' With similar confidence he asks, in righteous indignation, when it was that Jesus became 'pro-war and pro-rich'? Nor is it only Jesus to whom Wallis makes biblical appeal for validation of his politics. We are informed, in extended detail, of what the prophet Amos would make of the Enron scandal, of the prophet Micah's 'vision' of national and global security and Isaiah's 'platform' for properly biblical federal budgets. At one remarkable point, Wallis contrasts Micah's plan for world peace with that of Donald Rumsfeld; Rumsfeld does not come off well." Nuechterlein thinks the Democrats may be unwise in taking Mr. Wallis as their guide in the quest, or declared quest, to get religion: "His modestly revised social gospel may serve some of the party's purposes, but his habit of wrapping politics in religion is the very inclination that liberal Democrats so fervently denounce in others. And for a party already suspected of fecklessness on issues of foreign policy and national security, it would hardly seem prudent to select as its moral paladin a man who makes George McGovern look like a hard-liner."

TRUTH BEHIND SUPREME COURT

You have probably read as much as you want to read about battles over Supreme Court appointments but from all the commentary appearing in the press and online, I think it important to rescue the following by Judge Robert Bork. He is addressing the consequences of a Supreme Court marked by unchecked power, indifference to the Constitution and philosophical incompetence that would be risible were it not so sad. Along the way he provides a handy checklist of the damage already done, which might be useful in explaining to others why remedies are so urgent: "Consider just a few of the Court's accomplishments: The justices have weakened the authority of other institutions, public and private, such as schools, businesses and churches; assisted in sapping the vitality of religion through a transparently false interpretation of the establishment clause; denigrated marriage and family; destroyed taboos about vile language in public; protected as free speech the basest pornography, including computer-simulated child pornography; weakened political parties and permitted prior restraints on political speech, violating the core of the First Amendment's guarantee of freedom of speech; created a right to abortion virtually on demand, invalidating the laws of all fifty states; whittled down capital punishment, on the path, apparently, to abolishing it entirely; mounted a campaign to normalize homosexuality, culminating soon, it seems obvious, in a right to homosexual marriage; permitted racial and gender discrimination at the expense of white males; and made the criminal justice system needlessly slow and complex, tipping the balance in favour of criminals. Justice O'Connor, a warm, down-to-earth and very likeable person, joined many, though not all, of these bold attempts to remake America. Whatever one may think of these

outcomes as matters of policy, not one is authorized by the Constitution and some are directly contrary to it. All of them, however, are consistent with the left-liberal liberationist impulse that advances moral anarchy."

NEW GAY CHANNEL

So it has come around at last. The New York Times announces the launching of "Logo", MTV's new all-gay-all-the-time channel. But don't expect anything racy. This is not about sex, we are told, meaning the channel will not be carrying gay porn. Brian Graden, head of Logo, says, "When you tell a story about gay rodeo or gay surfers it's not a story about sex nor does it need to be. So much connects us beyond sexuality." Well, not really. The gay and lesbian "community" is exclusively defined and constituted by sex: by having sex, desiring sex, talking about sex and promoting themes and sensibilities related to sex between people of the same sex. Same-sex sex is the foundation of the gay world, the axis upon which it turns. Which is not to say that sex is all that gays or lesbians care about. They may care about many things but, to the extent that something "connects" them, that something is sex. People who are not interested in same-sex sex are not connected, they are not part of the "community". The story continues: "Documentaries will feature a variety of gay lives: rugby players, surfers, rural dwellers, Cubans and Republicans." Republicans? I can understand the desire to project the perception of gay diversity but, really, how exotic can they get?

WHAT'S WITH GUANTANAMO?

If kerfuffles can be huge, there was a couple of months ago a huge kerfuffle about U.S. soldiers desecrating the Qu'ran. One account had it being flushed down a toilet, another that it was near a urinal and

was inadvertently splashed and yet another said an interrogator sat on the book to show that it is nothing special. The excitements followed a government report that said there had been thirteen allegations of Qu'ran abuse, five of them substantiated, and two being accidental. Charles Krauthammer writes: "Let's understand what mishandling means. Under the rules the Pentagon later instituted at Guantanamo, proper handling of the Koran means using two hands and wearing gloves when touching it. Which means that if any guard held the Koran with one hand or had neglected to put on gloves, this would be considered mishandling." He adds: "On the scale of human crimes where, say, 10 is the killing of 2,973 innocent people in one day [September 11] and 0 is jaywalking, this ranks as perhaps a 0.01." Krauthammer raises an interesting question: "Even greater hypocrisy is to be found here at home. Civil libertarians, who have been dogged in making sure that FBI-collected Guantanamo allegations are released to the world, seem exquisitely sensitive to mistreatment of the Koran. A rather selective scrupulousness. When an American puts a crucifix in a jar of urine and places it in a museum, civil libertarians rise immediately to defend it as free speech. And when someone makes a painting of the Virgin Mary, smears it with elephant dung and adorns it with porn, not only is that free speech, it is art-deserving of taxpayer funding and an ACLU brief supporting the Brooklyn Museum when the mayor freezes its taxpayer subsidy." Is it simple hypocrisy? There are several possible explanations of why some people are so outraged about offenses against Islam and so blasé about, or even supportive of, attacks on Christianity. One is that the outrage is faked. In their blindingly partisan fury, they are happy to pick up any stick with which to beat the Bush

administration. Or maybe it is just multiculturalism run amok, which produces a love for every culture but one's own. Or maybe there are a lot more Muslims in the ACLU than we had thought. Or maybe the civil libertarians think Islam, unlike Christianity, is really dangerous and must not be provoked. Conversely, maybe they think Christianity is really dangerous and must therefore be attacked. There are so many possible answers to Krauthammer's puzzlement. I don't think we would go wrong if we started with blindingly partisan fury.

ROE VS WADE CONT'D

The quandaries created by the regime of Roe v. Wade. In Lufkin, Texas, sixteen-year-old Erica had been trying by various measures to kill the twin

babies with whom she was four months pregnant. She finally asked her boyfriend Gerardo to step on her stomach, which he did, and the babies died. Gerardo, but not Erica, is charged with murder. Associated Press reports, "The case has attorneys on both sides questioning the fairness of a statute that considers one person's crime another person's constitutional right." According to Roe, Gerardo was helping Erica exercise her constitutional right to kill her babies. Unlike other abortionists, of course, he was practicing without a license, which is properly against the law in Texas.

What Is A Catholic?

Catholicity means universality -- multiplicity that becomes unity; unity that still remains multiplicity. From Paul's word on the universality of the Church we already saw that part of this unity is the capacity of peoples to overcome themselves, to look toward the one God.

The true founder of Catholic theology, St. Irenaeus of Lyon, expressed this link between catholicity and unity in a very beautiful way: "This doctrine and this faith the Church, disseminated throughout the world, guards diligently, forming almost one single family, the same faith with only one soul and one heart, the same preaching, teaching, tradition as if having one voice. Churches of Germany do not have a different faith or tradition, as neither do those of Spain, of Gaul, of Egypt, of Libya, of the East, of the center of the earth, as the sun creature of God is only one and identical in the whole world, so the light of true preaching shines everywhere and enlightens all men who wish to come to the cognition of truth" (*Adversus Haereses* I, 10,2).

The unity of men in their multiplicity became possible because God, this one God of heaven and earth, showed himself to us; because the essential truth of our life, of our "from where?" and "to where?", became visible when he showed himself to us and in Jesus Christ made us see his face, himself. This truth of the essence of our being, of our living and our dying, truth that by God was made visible, unites us and makes us become brothers. Catholicity and unity go together. And unity has a content: the faith that the apostles transmitted to us on behalf of Christ.

Pope Benedict XVI,
Homily for Solemnity of Sts. Peter and Paul. June 29, 2005.

cutting/edge

A special feature keeping us up to date with issues of science and religion

SCHÖNBORN ON EVOLUTION

On July 7 The New York Times published an article written by the Cardinal Archbishop of Vienna, Christoph Schönborn, entitled "Finding Design in Nature," followed two days later by a front-page story with the headline "Leading Cardinal Redefines Church's View on Evolution." Leaving aside the fact that the Cardinal cannot "redefine" Church doctrine, he has certainly returned a controversial issue to the forefront of public debate.

The starting point of Cardinal Schönborn's article is his concern that a single phrase from Pope John Paul II's 1996 address to the Pontifical Academy of Sciences is widely quoted, but not understood in the fullness of Catholic theology. The late Pope had described the theory of evolution as "something more than just a hypothesis" but this is often taken to indicate, the Cardinal feels, that the Church fully accepts every ramification of a neo-Darwinian philosophy of human existence. The Cardinal said, in response to this attitude, "Evolution in the sense of common ancestry might be true, but evolution in the neo-Darwinian sense - an unguided, unplanned process of random variation and natural selection - is not." The crux of the disagreement lies in what is meant by the 'random' nature of evolution. The Cardinal is worried that the world understands this aspect of evolution as denying the guidance and design of creation - its control and direction - in the Mind of a Creator. But there are Catholic biologists who would argue strongly against the necessity of that deduction. In the New York Times on 9th July, Dr. Kenneth Miller, a professor of biology and a Catholic

said, "'Unguided,' 'unplanned,' 'random' and 'natural' are all adjectives that biologists might apply to the process of evolution." But even so, he added, evolution "can fall within God's providential plan." Effectively, the process of genetic mutation, which one might term 'random' is not intrinsically random (i.e. with no discernible cause) at all, and the survival of the fittest is clearly not a random process. Whatever causes the genetic mutations in the first place, they may certainly be humanly unpredictable, but the process obeys the laws of nature, and is still completely under the sovereignty of the Mind of God, who comprehends all things which to us appear 'random', or, better, 'unpredictable.'

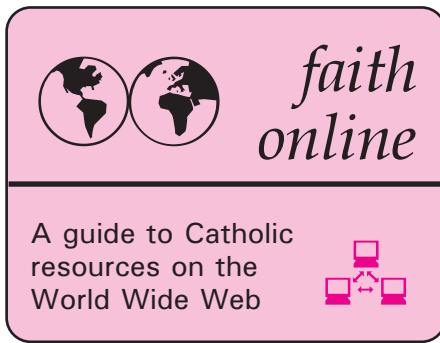
Cardinal Schönborn fills out his argument against a simplistic reading of the late Pope's comment with extensive reference to a general-audience address given by the same Pope on 10th July 1985. The Pope had said, "All the observations concerning the development of life lead to a similar conclusion. The evolution of living beings, of which science seeks to determine the stages and to discern the mechanism, presents an internal finality which arouses admiration. This finality which directs beings in a direction for which they are not responsible or in charge, obliges one to suppose a Mind which is its inventor, its creator."

Confusingly, the Cardinal's article has come at a time of fierce debate in the United States between proponents of evolution and proponents of so-called 'intelligent design.' The latter phrase has a very specific meaning in the current arguments about what should be taught in US schools, and refers to a hypothetical process of repeated divine intervention, to correct evolution, so as to bring about the variety and complexity of known life forms. Those who favour 'intelligent design' believe that there are life

forms of 'irreducible complexity' which cannot, even on the material level, have evolved in a natural continuity from lower life forms. Sadly, the Cardinal's comments have been taken by some as favouring such a disruptive understanding of God's design, or indeed other versions of creationism, which is not the case. The thrust of his argument is not that evolution is untrue as far as the material development of the biological ascent of life, but that to refer to that process as absolutely and inherently undesigned and unguided by the Creator is indeed wrong.

One significant response to the Cardinal's intervention in the matter came in the form of a letter to the Pope on the 12th July. Signed by three eminent scientists, believers all of them, viz., Lawrence Krauss, Francisco Ayala and Kenneth Miller, it requested the Holy Father to "clarify once again the Church's position on Evolution and Science." It drew attention to paragraph n. 69 of the International Theological Commission's 2004 document, *Communion and Stewardship*: "referring to evolution as a 'radically contingent materialistic process driven by natural selection and random genetic variation,' the commission nevertheless concluded 'even the outcome of a truly contingent natural process can nonetheless fall within God's providential plan for creation.'" In the same paragraph of the Commission's report to which they refer, and which was published under the auspices of the then President of the Commission, now Pope Benedict XVI, it states, "In the Catholic perspective, neo-Darwinians who adduce random genetic variation and natural selection as evidence that the process of evolution is absolutely unguided are straying beyond what can be demonstrated by science."

The full text of the letter to the Pope



The links to all the websites mentioned in Faith Online are included in the Faith Website at www.faith.org.uk

TERESA HIGGINSON THE TEACHER-MYSTIC

The first site, www.chrisfw@eurobell.co.uk, has now been complemented. Lady Cecil Kerr's biography remains the authoritative work on this fascinating and obviously very holy woman, but it has long been out-of-print. The whole book can now be read on-line or downloaded.

<http://freespace.virgin.net/crc.english/thh>

The many devotional booklets and prayers are now also available on-line. Many were granted *imprimaturs* in the 1920's, yet have never quite lost their popularity. Indeed, Teresa claimed to have been shown that the devotion to Christ's head as the seat of Divine Wisdom would be the one great means for the conversion of England. Perhaps it is time to update the devotion for the 21st century.

www.teresahigginson.com

PRO-LIFE GENETICS

Professor Jerome Lejeune, the father of modern genetics, devoted his life to the mentally handicapped. As a young doctor he dedicated his research to understanding their conditions. In 1958, aged 32, he discovered Trisomy 21, the extra chromosome that causes Down's Syndrome, and went on to discover many more genetic anomalies. Despite the tragic effects of the misuse of this knowledge, he was determined to set a course in action that would find cures. He eventually became president for life of the Pontifical Science Academy. His foundation continues his thoroughly pro-life work, with various imaginative corollaries; there is even a special interactive site www.planete21.net, for those who have Down's Syndrome, although it is at present only in French.

www.fondationlejeune.org/eng

Created by the Lejeune Foundation with the help of genetic researchers, doctors, philosophers, biologists and lawyers, this aims to be a comprehensive bioethics site. Visitors can subscribe to a monthly newsletter with succinct articles on major developments. There is a weekly press review (sourced from French newspapers, although these topics are international). A 'folder' section provides useful explanations on the basic topics - dispelling the myth, for example, of a distinction between therapeutic and reproductive cloning. A section on official texts and documents charts changes in European and International Law. This is an indispensable site for students of bioethics.

www.genethique.org/en

RCIA - A THOROUGH RESOURCE

The American Association For Catechumenal Ministry provides a detailed resource for RCIA peppered with quotes from popes, saints and church documents, as well as fine images. The expensive resource packs, available through the CTS, provide workbooks and photocopyable sheets. Split into liturgical, pastoral and catechetical areas it encourages the use of all the minor rites. Some may be a little intimidated by this elaborate approach.

www.acmrcia.org

JOHN PAUL 'THE GREAT'

The Catholic Family and Human Rights Institute is a non-profit organisation with an educational role for U.N. delegates and N.G.O.'s. But here you can add your name to a petition to be delivered to Pope Benedict for Pope John Paul II to be publicly declared 'The Great'. www.c-fam.org/cgi-bin/jpthegreat.pl

WORLD APOSTOLATE OF FATIMA

Recognised by the Holy See, this body used to be known as the Blue Army. It has as its mission the New Evangelisation through the Fatima message of conversion, prayer and penance. Last October it organised the saying of 100,000,000 rosaries for the protection of human life.

www.worldfatima.com