

Orthodox faith and orthodox science

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Introduction

I am defending and explaining a unity between orthodox Biblical Christianity and orthodox science. By orthodox I mean "that which is generally accepted and regarded as well-established" whether by Christians or by scientists. This proposed unity is not itself orthodox. It is commonly regarded as crackpot by orthodox scientists, who, if they endorse something beyond science, usually consider only something unorthodox by Christian standards, for example pantheism. A unity is also often regarded as heretical by those orthodox Christians who would favour an unorthodox approach to science, particularly some form of Creation Science. However, I am certainly not alone. For example, Bernard Ramm's "The Christian view of Science and Scripture" (Paternoster) starts off with the chapter title "The imperative necessity of a harmony." I believe that such a harmony is implied by the Bible and endorsed by the results of science. All I do here is to outline this viewpoint and to indicate some reasons on which it is based. Particularly in the Christian context, the most I attempt is the bare mention of some analogies which have been helpful to me. I speak alternately to the scientist and to the Christian, basing much on Psalm 19, which gives a Biblical basis for this unity: God speaking to us through Science, the Scriptures and the Soul.

Science in Psalm 19

Introduction

Psalm 19:1 The heavens declare the glory of God.. the sun, .. is like a bridegroom ... nothing is hidden from its heat.

I suggest to 20th century Christians that they are in no position to denigrate science in the name of God. The cars in our garages, the digital watches on our arms, the refrigerators and radios and TV and CD players in our homes, the X-rays at our dentist and hospital, the surgical therapies and pharmaceutical drugs in our medicine cabinets that are essential to keep some of us alive, all bear eloquent witness to the overwhelming success and utility of scientific study. This is evidence to the Christian that both orthodoxies are important and that their compatibility is itself God's truth. But the psalm also states this as being evidence to the non-Christian. "How do you know there is a God?" an atheist asked a Bedouin. He replied, "How do I know that it was a man and not a camel that went past my tent last night? I know him by his tracks." Then, pointing to the sun, he added "There is the track of a God."

In the times of the French revolution, one man said to a God-fearer: "We'll pull all your church steeples down, and destroy the memory of your God." He replied, "You can't pull the stars down." I suggest that science comes first, not because of its superior importance, but because of its prior place in the history of every human's experience of life, and because it is designed to lead on to the other and closer revelations of God (Romans 1). By the way, the popular pantheistic range of options are clearly rejected by Psalm 19: the heavens are God's servants, not God, who is beyond and above His creation..

Mechanism: a help or a hindrance to faith?

Some will respond to Psalm 19 by saying: nowadays we know how the sun works. Hydrogen is a fuel, burning to give helium. The man who discovered the details, Hans Bethe, is still alive. Many scientists use the discovery of such mechanisms as an excuse to deny the existence of the Creator. Every advance reduces the room for a "God of the gaps". One might ask, if we have a mechanism, is God not now unnecessary? Lagrange, though at least a nominal Christian, is often quoted: there is "no need of the hypothesis" of God in our equations to explain the ongoing course of Nature at the scientific level.

Science may find a mechanism to "explain" something, but the Scriptures know nothing of a God of the gaps. A Christian and scientist finds each new level of explanation a source of enrichment in wonder at God's marvellous work. I believe that it is important to be aware of, welcome and appreciate the two levels of

explanations. Psalm 19 reassures us, if we need reassurance, that both of them involve God's truth. The sheer complexity of the mechanisms are breathtaking. Every science has its own catalogue of stupendous wonders, each collection being essential to life and each list clearly incomplete. In physics alone, many strange 'coincidences' of law publicised under the title of 'anthropic principle' and which are necessary to permit an atomic world have recently been brought together (PCW Davies); at a more 'mundane' level, the understanding of the diffraction gratings 'invented' by butterflies, the polarised pattern-recognition devices in the eyes of bees, fish, and flies (based as they are on totally different approaches), magnetite field detectors by migratory birds and magnetic bacteria, quantum-limited feedback systems in the cochlea of the human ear, and so on form apparently endless challenges to understanding. We are "fearfully and wonderfully made," Psalm 139.

In the 17th century, such wonders as were then known were cited by Christian apologists such as Paley. If you found a working watch lying in a field, you would not be rational to deny the watchmaker his existence. One could understand gradual deformation of muscles and bones over many years without obvious planning of the final result, but the variety of species demanded more: "Who bored the hole in the nose?" (to allow a novel and vital function, requiring several apparently independent components). However, this line of argument was identified with a "God-of-the-gaps" philosophy. It was therefore stigmatised, and is popularly regarded, as outmoded by the far more fundamental mechanisms of genetic programming uncovered in our day. Against that, this advance comes with the phenomenal burden of explaining the origin of that astronomically complicated and intricate device: the genetic code itself. The Christian might recognise that Paley's particular wonders have the potential of being resolved mechanistically one day. The scientist might recognise that that has only enhanced the complexity at a hitherto unimagined level of sophistication. We may anticipate new evidence in the 21st century science for a deeper insight, perhaps a mechanism of synthesis of complex molecules and of self-replicating material, DNA itself. In the meantime we can gladly support serious work towards such scientific goals. We can predict on the basis of past experience and from the nature of the problem that the next level also will have its own mysteries, whose subtlety and wonder will be in proportion to the scientific achievements, and will still leave wide open the question: "Why does all this work so beautifully for our benefit?"

The 'survival of the fittest' is popularly interpreted as the new Darwinian insight for debunking Paley and explaining what originally was explained by a watchmaker. What appears to be designed for a purpose could arguably be every bit as suitable as it is precisely because unplanned development induces better survival against odds amongst the winners. I conclude that an 'argument from design' does not rule out mechanism. The Christian who believes that God works in His creation will not find that a conflict, and takes a larger view of the design aspect of God's creation. Some Christians are apprehensive of and defensive about the potential discovery of scientific mechanisms, especially in biology. The discovery of mechanisms is the nature of the trade of science; a scientist thinks about mechanisms as a boy about aeroplanes. Mechanistic thinking has proved overwhelmingly useful in physics, chemistry and already in biology. When the boy grows up, he may make aeroplanes, and they fly. The recent spectacular progress in molecular biology further and overwhelmingly attests to the value of a mechanistic approach as of great benefit to humanity. It is an insult to God's revelation in science to play down the value of this fundamental search. The Christian can happily accept that this comes from God. I suggest that it is Biblical thankfully to accept the mechanistic level of description as a valid one. The Christian's special insight is to go on from that to recognise the Creator in those same mechanistic discoveries (as in Psalm 19).

Genesis 1 tells us that in His creation God chose to work in time, not in one blinding instant. And Romans 5 and Galatians 3 remind us that the same is true of redemption. The Apollo astronauts, who 'knew no day or night in outer space but returned to Earth with better precision than British Rail,' give a faint illustration as to how God, who is eternal, entered into the limitations of His creation for His actions.

Duality

Psalm 19 tells us that God speaks to us in science. For science tells, with limitations, the How of God's creation. But God speaks more clearly still in the Bible, which uniquely gives the Why. Take the question: why did the car start? The scientist and engineer will explain the valves, the pistons, the injection of petrol vapour. The housewife says, "I wanted to get the shopping done before the children came home." Both explanations are true, but the personal insight can only be obtained directly from the person responsible. And science cannot really explain the universe; for that, we must listen to the Person.

The Bible neither denies nor plays down the scientific level of explanation. The Lord God formed man "of the dust." (Genesis 1) "A strong east wind" aided the parting of the waters of the Exodus, Exodus 14. Psalm 104

tells us "He makes the grass grow" and the winds are "His messengers." Many of the miracles of the Bible may well have their roots in orthodox science, the miracle being that it happened when and where it did. (Ramm's "The Christian view of Science and Scripture" is helpful here.) Even for "ordinary science", It was a Huxley who said "The miracles of the Bible are nothing compared to the miracles of science;" a Christian can agree enthusiastically. God did not only set the Universe going supernaturally like a watch, although the intricate construction is obvious to all. He is just as involved in His ongoing creation, even as the scientist explores it. While science always has created more problems than it has solved, there are no gaps where God has to be invoked in place of science, or into which He has to be squeezed.

Is science for Christians?

What is the Christian's proper attitude to science? Psalm 19 indicates that science is not in itself a threat to the Christian's faith, but quite the opposite, a glory to God. I accept that Robert Chapman had a point when he described scientists as "grubs in the old creation". On the other hand, John Calvin encouraged some grubbing as glorifying to God. I'm glad to find in many psalms that God is involved in His creation and attaches importance to our view of it.

The philosophy of "Mindless evolution"

The atheistic anti-God philosophy popularly called "evolution" is an enemy with which no Christian can compromise. But in joining just battle with this, Christians have often been negotiated onto dodgy ground. I am not speaking of the scientific aspects here, but the mindset which often lies behind its ready acceptance (C.S. Lewis traces this mindset back well before Darwin). The scientific discoveries of mechanisms throughout the universe are to be distinguished from the philosophy of mindless origins.

Psalm 16 expresses the converse of Psalm 19 when it says: "the (senseless, empty) fool says in his heart that there is no God." Psalm 8 and Psalm 104 amplify Psalm 19: "When I consider the heavens, the work of thy fingers, .. what is man?" "O Lord, how manifold are thy works. In wisdom hast thou made them all." Francis Bacon said: "I had rather believe all the legends of Aesop and all the fables of the Talmud than believe that this universal frame is without a mind."

The most stultifying thing either the Christian or non-Christian can do is to imagine that there is a conflict between the Bible and science. Psalm 19 tells us that the heavens declare God's nature. It follows that no conflict is possible. Pagan mythologies may believe in different gods for different areas, whether Egyptian, Canaanite, Greek or Maori. Hinduism is notorious. It is Judaism and Christianity which are distinctive. "The Lord our God is one Lord." Christians at least do not believe in one god of science and another of the Bible. The idea of fundamental conflict is a lie. Nobel laureate Steven Weinberg in "The first three minutes" speaks of scientific work as the only aspect of the universe which lifts it "from the level of farce, and gives it some of the grace of tragedy." Against that, another leading scientist, Freeman Dyson, contrasts this with Paley and replies "if Weinberg speaks for the 20th century, I prefer the 17th". Oxford professor Richard Dawkins may talk in the November 1995 Scientific American of "the pitiless indifference" shown by genetic growth; I rather marvel as a Christian at the very existence of the genetic code.

Can a Christian trust the work of non-Christians?

I should explain that I am committed to the message of the Bible including Genesis as reliable. To me, any deviation from the Biblical emphasis, however well-intentioned, can end up in Bunyan's Bypass Meadow. "Let God be true and every man a liar." However, for the same reason, I cannot support those who add to God's Word, against the warning of Revelation 22, to outlaw all mechanistic thinking in some sciences.

The Christian should have a care before rubbishing the purely scientific work of non-Christian evolutionists. Rejecting a mechanistic level of explanation is an impediment to science, and so the Christian can learn from Psalm 19 that it is also dishonouring to God's truth. I teach happily and thankfully the scientific theory of relativity, knowing well that the topic was made attractive to Einstein by the anti-God philosophy of relativity.

But the results of his theory, as opposed to the philosophy that spawned it, are now proved to be right, and so reveal God's works to me in a fresh way. We owe most of the basic discoveries in electricity to Christian

believers. Michael Faraday was arguably the greatest experimental scientist of all time. He was an orthodox Christian, of Sandemanian persuasion --- a Presbyterian form of what in Anglicanism emerged as the 'brethren movement,' which has a great deal in common. James Clerk Maxwell was an evangelical Baptist with a clear conversion. Christian faith certainly does not hurt scientific ability! But we owe our modern luxuries to the discoveries mainly of non-Christians. In each case, it is God's truth which was discovered, and we benefit accordingly.

In believing their Bibles, all Christians already accept work based on non-Christian beliefs. We owe the Old Testament to the accurate copying of unbelieving Jews. We owe the New Testament to partially enlightened mediaeval monks. God overruled because of and through their scholarship to preserve the Scriptures to us. We do not endorse their erroneous beliefs by accepting the Scriptures they transmitted to us.

Is the Bible a textbook for a "Christian" science?

Would the "one Lord" have two different kinds of science, each to reveal His own nature? Rather, Almighty God has chosen to entrust scientific truth to just and unjust alike, like the rain from Heaven, and like the news of His Son's redemption. Psalm 19 says that He does not say one thing in science and another in the Bible; rather, the message is the same. Psalm 103 and 104 go together. Isaiah 40 also combines creation with redemption. Paul announces both in Acts 20: "God who made the world... now calls on all men everywhere to repent." His creation, like the gospel of Christ, is accessible to all who seek at the appropriate level. If they discover anything at all, it is God's science, ultimately orthodox science, the only science, which they discover. God has chosen to bless the results of people who are in personal opposition to His Son, so far as they diligently follow after a lower goal. As the Saviour's own words show, all of these paint lessons which the Christian uniquely appreciates; botany has its lilies, its seeds, zoology has its ravens, sparrows, doves, hens and migratory birds, but that is because "This is my Father's world." It follows that there is no "Christian" science as such - or indeed Christian psychology, etc., as Dave Hunt has urged. No "other kind of science" which demands, say, a prior acceptance of the Bible exists. The Bible is not a scientific textbook. For a start, it's much more interesting. And it sets out to answer the Why, not the How. I do not wish to minimise the problems we see in reconciling these two accounts of God's truth, but that is a separate study which demands this prior perspective for any success.

That is why the popular form of the Creationist-Scientist debate is to me a tragedy of misunderstanding. Neither side achieves the balance God supplies us in Psalm 19 in His 3-fold revelation in Science, the Scriptures or the Soul. As Harold St John said in another context, everyone seems to want to freeze on the North Pole or the South, instead of searching out a temperate clime which enjoys God's world and God's Word to the full. Psalm 19 epitomises that full-orbed enjoyment. The Christian view is outstandingly more inclusive.

C H Spurgeon, in "The Greatest Fight in the World," said: "Two sorts of people have wrought great mischief, and yet they are neither of them worth being considered as judges in the matter; they are both of them disqualified. It is essential that an umpire should know both sides of a question, and neither of these is thus instructed. The first is the irreligious scientist. What does he know? What can he know? He is out of court when the question is - Does science agree with religion? Obviously he who would answer this query must know both of the two matters in question. The second is a better man, but capable of still more mischief: I mean the unscientific Christian, who will trouble his head about reconciling the Bible with science. He had better leave it alone, and not begin his tinkering trade. The mistake made by such men is that in trying to solve a difficulty, they have either twisted the Bible or contorted science. The solution has soon been seen to be erroneous and then the cry goes up that the Bible has been defeated. Not at all; not at all; it is only a vain gloss on it which has been removed ... if our friend's book is all fudge, the Bible is not responsible for it."

"Of old hast thou created the earth"

When people mistakenly add to God's Word by offering a "Biblically based" age for the physical Universe of up to perhaps tens of thousands of years, this is grossly at conflict with orthodox science. Such Christians then find themselves forced to be even more unorthodox and to repudiate the principles of nuclear physics as they relate to radioactive dating. This line was popularised by for example Morris and Whitcomb of the so-called USA Creation Research Society. All scientific evidence supports the opposite. All this only brings discredit on God's name amongst non-Christians.

It was our New Zealand unbeliever, Lord Rutherford, at a meeting of the British Association for the Advancement of Science around the turn of the century, who first revealed the sheer weight of the nuclear radioactivity evidence as regards the age of the Earth. Since then the weight has increased greatly. He showed this to believers in God like Lord Kelvin who had supported a young Earth. Kelvin as a brilliant scientist saw the strength of it, and was obliged out of honesty to agree.

Those Christians were big enough to know that such truth is not the prerogative of the Christians but could be found by the appropriate actions of any sincere person. This is an example worth following.

Gosse's theory

Though it is less popular to do so now, some Christians got around this supposed impasse by believing that God built the appearance of age into His relatively recent creation. He created the navel, the half-digested food inside the dinosaur inside the ice and so on, all on days 5 and 6. On this view, if scientists think they are looking at an old story, that reflects their gullibility; it is a charade. Maybe such perversity is what a jealous and perverse sinful human will resort to, but it's totally beneath the dignity of any decent human, let alone my loving heavenly Father! I know these people are wrong, because I know by faith and through salvation that God is no such scurvy liar. Every breath of the Old and New Testament is straightforward. "What may be known of God is manifest to them, being seen in the things that are made", "we use great plainness of speech." Would "the great Shepherd" put misleading information in His creation just to fool the scientists? They make quite enough of a mess in twisting His truth as it is (Romans 1 predicts and interprets this) but it's not God's fault. Even Einstein, brilliant scientist and unbeliever that he was, said "Subtle is the Lord, but malicious he is not."

Authority in science?

What might be said to the Weinbergs and Dawkins, who believe that science is the only secure enterprise? First, we do not grant that "science proves and religion just believes without proof." That antithesis is nonsense in the scientific view anyway. Where did you read that "science says?" Do you believe what your school text-book says? Perhaps it's not so bad a thing to believe something because the Bible says so! And how can one confirm scientific orthodoxy when it is challenged, even by some form of Creationism? Science has no official hierarchy of barristers or priests to safeguard it, no Pope, no statutes of accepted theories, no professional safeguards at all. Scientific societies try to act in such capacities, and often are successful, but are not reliable; the greatest scientific honour and the most popular and accepted theory can be put in the shade tomorrow by a single new fact. I suggest another similarity, to me a highly characteristic one. There are professional societies in science, and they play a useful role; but the recognition of orthodox science is not tied to them. Similarly, whatever the denominations or local church organisations within Christianity, orthodox Biblical Christianity is not tied to them. The true church of Christ is invisible except in local and personal witness, but extends well beyond these. The Roman Church takes unfair credit in claiming to authorise the canon of Scripture. F F Bruce explains in detail in "The Spreading Flame" that the historical evidence is that the church of the time simply accepted what was already widely if informally recognised. The canon of Scripture depends not on the Pope, but on its own intrinsic merit, as recognised by the continuous Christian communities since the days of Christ's earthly life.

Communal orthodoxies

This points a fundamental strength in an emphasis on orthodoxy: science and Christianity share the intrinsic credibility of a well-exposed and well-analysed view. As C S Lewis said, "Our faith is not pinned on a crank," nor do we accept dramatic pressures of poorer TV journalism and the maverick isolationist. The twentieth century cannot deny all that was good in the previous centuries when humanity repeats the same mixture of good and evil in each. Who are we to know that much better than all before, especially in such areas as those of careful and impartial analysis, fidelity, moral courage, and (for the Christian) insight into the meaning of Christ's death and resurrection? Christians recognise that others before us have laid foundations, which we merely build on. "The faith once delivered to the saints" (Jude) is to be accepted, experienced, safeguarded and transmitted as a Divine trust and as God's revelation. Much the same is true for the edifice of modern science; while it welcomes useful additions, the underlying approach is the same. No one can reinvent all of science, from the wheel onwards.

Both the scientific and the Biblical orthodoxies, then, are characteristically elusive, communal and timeless in character, and as such are not subject to formal human regulation. I believe that that is because they both reflect

Divine truth. I am inclined to feel that, of all disciplines of study, science has a special place in relation to Christianity. Psalm 19, in starting with observational science, supports this view.

Science heterodox or orthodox ?

An obvious objection is that science progresses with heterodoxies, not orthodoxies. The Kuhnian paradigm is for a nonconformist to put up a theory which destroys the complacency of the old guard of scientists and enforces a new approach which makes the old obsolete. An Einstein arises to refute the old and venerated Newton, and is rewarded by becoming venerated himself - for a time.

Indeed there is a radical difference with Christianity, if not Judaism, here. A Biblical Christian does not accept the idea of a progression of Messiahs as does say the Ba'hai faith, and does not view its central doctrines as subject to fundamental alteration: "the faith [was] once delivered to the saints." Science on the other hand is to us a progressive and incomplete revelation.

But one should not overemphasise this difference. Even within science, the Kuhnian school has been accused of oversell. First, the working out of known principles is as fertile a ground for scientific advance as any other. It took 40 years for the known principles of quantum theory to be used to explain superconductivity (by Bardeen, Cooper and Schrieffer in 1957). The results were well worthy of a Nobel prize award, even though they did nothing whatsoever to undermine the principles of quantum theory. In a similar way there is a continuing Christian commitment to "work out your own salvation..." Phil. 2, the principles being settled, but the applications being deeply challenging. Even in a super-revolution when many basic principles are challenged, only some of them are made obsolete. In both Scripture and science, we are launched on an unending quest (Eph 3:16-19).

Second, none of the successes of the earlier paradigms can be queried or outdated. Feynman has emphasised that to a newcomer it is incredibly hard to make genuinely new and fundamental progress in a mature science like physics, precisely because whatever is proposed as the new paradigm has to accommodate the successes of all that has gone before. The most that can be done is peel away some of the assumptions of the old theory as superfluous and misleading, so exposing the things which endure into the new theory. For example, although Einstein's theory of gravitation was a super-revolution, it does not deny the validity of Newtonian gravity within certain approximations; nor does it deny some of the crucial scientific insights of Newton. Many such advances have far deeper roots in what was best of the old theories than may appear to a casual observer. There is a remarkably strong parallel here, whose exposition is basic to the book of Hebrews, with the way that Christianity replaced Judaism, retaining its underlying basic insights into monotheism etc. and understanding while rejecting the trappings of animal sacrifice as stopgaps, as matters which were essential in their time, but are now to be taken as indicative of the fuller revelation to come.

This reflects basically the fact that we live in the AD's, not BC's. The Old Testament era was the time for such progression of revelation, more closely paralleling the present progressive advance of science. The coming of Christ Jesus has an utterly unique character which has solidified Christian revelation in a way which can have no direct parallel in science. "God who spoke .." (and who is still speaking in science as it progresses) "has spoken unto us by His Son."

Faith of science

Science needs some kind of faith if it is to operate at all. Who would start the turgid enterprise of getting a tricky experiment going, of performing a particularly arduous calculation, while expecting that the result would be worthless and ugly? It was Western civilisation which spawned the science of today. Stanley Jaki traces this in detail directly to the influence of Christianity. People looked for an orderly law-abiding universe, and were not disappointed; Christianity had prepared them for that, and at the scientific level the evidence fitted. Other cultures such as the Greek culture made important inroads on science. Chinese culture was easily more advanced, and started strongly, but believed in a dual system of gods with inbuilt conflict, and was left behind. What is believed about the world strongly influences the success even of a scientific quest. The converse of this effect is being played out before our eyes. The "hard" sciences are in serious decline in the Western world. My non-Christian colleagues who view this with alarm themselves attribute this to the increasing influence of non-Christian philosophies such as "New Age" teaching, and to a widespread "flight from rationality." I was supported and encouraged by the President of NZ Skeptics, who incidentally assures me that "our sights are set

on pseudoscience and paranormal, New Age rubbish, not responsibly practised religion." To me as a Christian this retreat from science is a logical result of the manner in which permissive thinking has already severely eroded the moral standards of our society. If there are no standards, there is no objective truth to be found anywhere, not even in science. "Constructivism" – which despite its very positive aspects might be parodied as 'imagine your own science, it's right for you if it feels good' - is an influential doctrine. The 1995 New Zealand School Certificate science exam had serious flaws in a majority of its questions; some were so impossible as to be ludicrous. When I took public issue with NZ Qualifications Authority over this at a national level in December 1995/January 1996 on behalf of the NZ Institute of Physics, the lame responses suggest that the above parody is little exaggeration.

Confirming orthodoxies

A Popperian view is that in science nothing is proved, but only disproved. The non-Christian feels justified in saying: how can Christians be so arrogant and unscientific as to claim certainties and proofs of such intangibles as one-off miracles and of unique events in history? This familiar contrast, like any worthwhile point, ought not to be pushed to its apparently logical conclusion. In science alone, that would be to deny full value to science itself as an outstandingly successful enterprise. We have learned something positive! And history is by definition a record of unique, irreproducible events.

From another viewpoint, science and Christianity are remarkably alike in this. Since there is no Pope for science, and only a Popper, there is only one convincing way of confirming orthodox science, and that is to be able to do things you could not do without it. If you're wearing an LCD display wrist watch, it's hard for you to argue that Thomas Young got his science all wrong in the 1830s, when he said light was polarised. You're using a device that utterly depends on what he said being true. If you watch TV or listen to a radio, it's hard for you to argue that Michael Faraday was wasting his time with wires and wheels in the Royal Institution in the mid-1800s, or that James Maxwell was a hallucinating theorist: you're using the result they predicted. If you've had a barium meal before an X-ray or had some technetium injected as a radioactive tracer into your bloodstream, it's not so easy for you to argue that all that the scientists say about carbon dating and radioactivity and an old earth is bunkum --- you're benefiting from the same nuclear physics discoveries.

The same is true in Christianity. The suggestion that Christians just believe without evidence is not fair to Biblical Christianity. "Taste and see that the Lord is good," Psalm 34. Once again, there is evidence for a new power, in this case through accepting the teachings of the Bible. As Psalm 19 says: "The law of the Lord is perfect, converting the soul." The power illustrates the perfection of God's Word. Millions of people have found in trusting Christ as Saviour the strength to overcome in the temptations of life. In the 1920's, a Christchurch railwayman said to his newly-converted mate on the footplate, "Dick, I hear you've become religious." "Well, I've become a Christian." "Well, Dick, I'm surprised at a man like you believing in all those fairy stories. I could explain the Bible to you in 5 minutes." His mate replied, "You know what I was like, and how I always went home drunk with a near-empty pay packet?" "Yes." "You've reason to believe I've changed my ways?" "Yes, certainly." "You say you can explain the Bible? You explain me." That testimony was unanswered; my father was deeply impressed, and himself was converted not long after.

The Christian, Francis Bacon, said: "Start with certainties, end in doubts; start with doubts, end in certainties." Some prefer the word "certitudes" mature convictions based on a reasonable extrapolation through faith on the basis of reasonable and appropriate evidence. In Christianity, God invites us to an experiment - He performs His work on us (not the other way round, which reflects human arrogance, but in a spirit of repentance and faith). There is evidence to motivate our belief. "Christ died for our sins, and was raised the third day." "Thomas, reach out your hand... be not faithless but believing." In Hebrews 11, faith is the "title—deeds to things unseen," but equally is stimulated by the historic evidence for God's planting faith in Abel, Noah, Abraham, Moses, and so on. When asked, we are to give "a reason for the hope" within us (1 Peter 3).

The step of faith may seem to contradict this claim to the rationality of Christianity. However it is required to enter into the experiment because of its very nature. It is impossible to learn to float or swim by reading a book. That is the nature of the experiment. A book may help, but you have actually to allow the water to carry you, or you will never swim. Swimming instructors are not dubbed as anti-scientific on this account.

Does science itself suggest there is something beyond?

I am convinced that science points beyond itself inexorably to some other level of explanation. The strongest evidence to me is that although science is successful, it cannot explain why it is successful. Refrigerators can be explained, but the laws of electricity and thermodynamics shed no direct light on why such discoveries are there to be made, and why they are useful. Nobel laureate Dick Feynman said "We do not know what the meaning of existence is." Science is strongly suggestive and yet explicitly inadequate. Psalm 19 confirms this. It is not a "God of the gaps" which is meant. It is rather like the recent 3D pictures; you can indeed analyse a 2D diagram pixel by pixel, and in doing so you have indeed got absolutely all of the data. But if some people (not all) look at the pattern as a whole, something new emerges - the stereo effect. If you insist on reducing the picture to the pixel data, which we might call the "scientific" level, you will never see that pattern, because it is an optical impossibility at that level. Once you stand back and look at it all, you see a message coming through. I suggest that it is the same with science as a whole. The Bible delivers that message as no other book does.

It is arguably not intellectual honesty, but the opposite, which leads some to deny this possibility of a new revelation. C S Lewis: "There comes a moment when the children playing burglars in the hallway suddenly hush: was that a real burglar's footprint in the hall? There comes a moment in men's search for God that they pause: did we ever mean to find him? We never meant it to come to that! Worse still, supposing He had found us!" On Biblical miracles that imply a suspension of God's laws in science, C.S. Lewis's "Miracles" gives a well-thought-out interpretation. One would have to rule out God's intervention a priori to deny the possibility; but, for reasons which Lewis details and which go to the heart of our personality and to the fulness of the Christian revelation, that itself does not square with the totality of our experience.

The above is only one approach of many that I have found helpful. Mrs Gatty's "Parables from Nature", discussing as parables the miracles of caterpillar turning to a butterfly, of dragon-fly grub and full adult, from insect and bird life for example, is an outstanding if Victorian example.

Is advanced science the key?

The observational, 'phenomenal' approach of Psalms 8, 19, 104 etc indicate that a basic appreciation of God is available 'to the savage and the scientist' alike. It would be intolerable for a fuller revelation to be dependent on more esoteric science if it were to be universally accessible and universally relevant. It is a precondition of any plausible creed that it not depend on superior intellectual capacity. An extraordinary if repellent recent example by a good physicist is Frank J Tipler's "The Physics of Immortality." This book is full of the equations and mathematics of quantum electrodynamics mixed with assertions. He claims to work his way to a proof of immortality, starting from science. He believes in resurrection, but significantly not in THE resurrection. When Weinberg was asked by the US Senate about the justification for building the huge Superconducting Super-Collider: "Will this machine help us to find God?" he said "I don't think any answer I give to this question will be helpful." That was diplomatic. Tipler commented: "I would have said 'Yes! Yes!'"

Do you want to have a machine made that will help you find God? And the more costly the machine, the more likely the success? The Bible anticipates every such idea, in this case the Genesis story of the tower of Babel. No scientist would mind seeing a scientific proof of God, especially if that "God" can be twisted and turned not to demand holy living - as the God of Psalm 19 requires. But what an intolerable "deus ex machina" that kind of God would be!

Even in the sophistication and expense of today's science, and for example in astronomy, a dedicated amateur can still contribute at a fundamental level. Albert Jones of Nelson, NZ was the second person in the world (after an observing group in Chile) to spot one of the greatest scientific events this century, Supernova 1987a in the Large Magellanic Cloud. He knew his stars, and saw by eye that a new one had appeared. I see in this a parable of the fact that Christians who know their Bibles are well placed to recognise God's present actions in this world. A person intellectually handicapped by birth damage was baptised at the local church I attend, Linwood Bible Chapel, Christchurch, NZ; another case in a neighbouring Christian assembly was of a paraplegic young man brain-damaged in a car accident. Were these cases of religious cranks brainwashing a gullible person into a pious "body-washing"? Is Tipler's alternative any better? What would it mean to such a person to say: if you can build this outlandish machine, maybe then you'd know God a little? What kind of God would any ordinary person find, if it were possible only that way?

Various cults teach a higher knowledge not accessible to the new Christian; they are therefore to be rejected. The New Testament (for example 1 John and several Pauline epistles) explicitly contends with such Gnostic

claims, that knowledge of God is a preserve of a certain sector of society. The Lord Jesus prayed "I thank Thee, Father, that Thou hast hidden these things from the wise and prudent and hast revealed them unto babes. Even so Father, for so it seemed good in Thy sight." The thief on the cross knew little theology and had less time; he was accepted with Christ. We baptised that young lady at her request and because of her conviction that the Saviour who loved us had loved her, had died for her, and had shown Himself to her, and she had received Him by faith. Not a blind faith, which makes a virtue of believing any rubbish one is told to believe; but a seeing faith (Hebrews 11) which balances the evidence, acknowledges the problems but looks beyond them. It was clear that that young lady had been blessed by Christ with His salvation. We had to baptise her; it was a delightful obligation. She had found the One Whom we had found, and He had found her. Since God is greater than His creation, His nature is a great mystery of stupendous and intricate knowledge and power, but Christianity to me illustrates its compelling authority when it describes Him as being at the same time readily accessible to simple faith. No other creed could satisfy me as intrinsically accurate to life, reasonable and credible on such a point.

The Scriptures in Psalm 19

The Psalm conveys God speaking not only through Science but also the Scriptures: *Psalm 19:7- The law of the LORD is perfect, reviving the soul. The statutes of the LORD are trustworthy, making wise the simple.* The second revelation by God is here declared to be the Bible.

Does the Bible override science for a Christian?

One Christian objector said to me: "the revelation of the Scriptures must override Science and the Soul". That did not come from Psalm 19. I accept that Mr Recorder (the conscience in the parable of Bunyan's "Holy War") needs Biblical calibration to be accurate, and that when the question is "Why?" the plain statements of the Bible override the imaginative speculations of scientists. But the message of Psalm 19 to me is, first, that Science is one valid aspect of God's Truth, and is an independent testimony to Him; next, that God has spoken in sundry times and divers manners by His Son through His Word; finally, that God speaks directly to the heart and conscience, on the basis forged by the first two. I dare not minimise any of those revelations. If they seem to conflict, I should learn from that apparent conflict to adopt a spirit of humility towards a God whose "ways are past finding out", and suspend judgement on all fronts until He is pleased to clarify the matter. I ought not to resort to an arrogant denial of one of those revelations on the basis of lengthy and shaky human deductions from another of them.

Do we agree with: "Religion without science is lame; science without religion is blind"? Perhaps it is nearer the mark, but religion never saved anyone. Psalm 19 gives a better balance in my estimation!

Futility

One popular response from the non-Christian to the above is basically an assertion of the futility of life. Why believe in God, when the facts show that Nature is indifferent and that there is cruelty in what is supposedly His creation? Incidentally, the force of this is not universal. When a non-Christian, C S Lewis found such objections to be utterly natural. In "de Futilitate" he contrasted the (to him) natural expectation that no war would end war with the reaction of utter astonishment of a labouring man on being faced with this view: "Then what's the good of the ruddy world going on?" One Christchurch ambulanceman alluded to the carnage seen in attending car accidents as enough to annihilate anyone's faith. But I also know some Christian tow-truck drivers and ambulance workers who give a natural expression to their faith in their work.

The problem is recognised in the Bible. A whole book, Ecclesiastes, relates to aspects of this problem. Solomon was just such a person, and totally empathised with this sense of futility. In ch. 3 etc., he carries this through to a remarkably modern listing of even worse "futilities" which acutely trouble 'the thinking person.' However, he did not attempt to deduce an enduring argument against God's existence. His statement "He has made everything beautiful in its time" acknowledges the beauty of creation, which as in Psalm 19 carried its own correcting and overriding conviction. Solomon's sober final chapters warn us that to deny such a major and positive insight by focussing on the attendant perceived problems can be personally crippling and ruinous. The Saviour Himself, when interpreting a fatal accident, simply drew from it a similar warning. A philosophy of cruel indifference by itself is utterly inadequate or worse. It leads people to a self-contradiction, to utter folly, and sometimes to flagrant evil.

I say self-contradiction, in that no reasonable person would live by such a rule, so where did that universal higher ideal come from? C S Lewis is exceedingly good value here; read his accounts in "Miracles," "The Abolition of Man" or some of his essays in "Christian Reflections". To lodge any complaint against Christianity, we are forced to take our moral "instincts" or ideals much too seriously for them to have any possibility of being subjective fairy stories. They are therefore objective, and are associated with a reality beyond ourselves. For an example of sheer folly, see the Dawkins article in the November 1995 Scientific American where Dawkins talks of "God's utility function" and considers Nature as flawed. He goes so far as to say that in a sensible forest (governed by Dawkin's utility function?) the "mindless" genetic competition of the DNA would be defused, and trees would not need to compete by trying to grow so as to outdo the other. Not only does the argument become circular, it reduces to absurdity. So timber has no utility? And our NZ bush does nothing for us? Any of our Sunday School children knows better. "When through the woods and forest glades I wander .. Then sings my soul, my Saviour God to Thee, How great Thou art." The Scriptures say of God, "I will frustrate the wisdom of the wise." And for evil, take Nazi Germany and its roots in the despairing philosophies of Nietzsche etc., remembering that the worst evil of all still lingers in our own minds.

The practical problems of apparent undeserved cruelty, both by sinful humans and by "natural" causes, remain. In her beautiful autobiography published posthumously in 1995 Patricia St John tells how, even as an old lady a few years prior to her own death and retired after a lifetime of selfless nursing and missionary work in hostile environments, she agonised over TV reports of the the Ethiopian famine to the point where she simply had to go. She helped to nurse the victims in searing heat and in conditions where many younger people were forced to give up. In the camps, riddled with suffering and death, she discovered no complaining, and nearby found "the final answer to my question" (as to whether "the Lord was among them or not") --- an extraordinarily vibrant church at Gedaref where for example one leader had become a refugee in order to help best. It was for her a powerful illustration that it is God's way, not to remove our problems, but Himself to come to us in our problems and suffer with and for us, as indeed He did in Christ. Without that dimension, even acts of great human compassion to famine victims have fundamental limitations: Patricia St John said: "we would have changed their circumstances, but we would not have changed them."

The facts of evil and the facts of Christianity

When we look at the facts of Nature, we must look at all of them; it's inconsistent and dangerous to focus on just one or two and ignore the others. For a Christian, the facts of the Incarnation, the Cross and (above all) the Resurrection must also be put into the analysis. The scope of the discussion is enormously widened. Christianity again seems to me to have the overwhelming compulsion of a uniquely broad perspective with which to interpret every such fact in context.

Christianity frankly acknowledges the abundant sin and cruelty in our world and the manner in which it inextricably intermingles with the good. It alone describes how God, though utterly pure, was Himself deeply involved and identified with that evil, so as to redeem humankind and the very creation out of that evil. The Bible explains the origins of evil as reflecting a total human rebellion, a primordial cosmic catastrophe (Genesis 2), instigated by a personal if disguised force of evil. Since this has affected all creation (Romans 8), and since lions and lambs are stated, if only pictorially, to coexist in the new world (Isaiah 11), it is not clear how far any of the popular arguments against Christianity based on "nature being red in tooth and claw" can be extrapolated to the primaevial creation. All agree that we are not naturally in touch with the Creator. The Christian sees this as like the reason a transistor radio without batteries does not tune in to the station; the problem is not with the Source of light and life, but with us. God did not immediately remove evil from His universe.

For reasons which are His secret, but which may have included the avoidance of annihilating the whole human race, God's way of dealing with this disaster was to work in time in redemption as He did in creation, sending His Son to the certain expectation of abominable cruelty from fellow-humans and even worse, the atonement appointed by God's providence, so as to redeem humanity. The apparent contradictions in nature are not denied, but are set in a greater and richer perspective. Christianity makes sense of every one of these facts as nothing else does.

There was no questioning of such facts to Paul. Everyone knew the historical accuracy of the death of Christ. Paul himself was convinced that he saw the risen Christ. And his sober testimony, backed by his self-sacrificial life, is one part of that historical evidence which has persuaded us that our faith is not founded on a lie. Calling these, the axioms of Biblical Christianity, facts is of course just the issue where people diverge. That is indeed the watershed; this is precisely the nature of the challenge posed by Christianity, and it cannot be left out of the

discussion if it is to be well-rounded. The case today for accepting these as historic facts has a variety of strands for its potential defence by Christian apologists, for whom there are many approaches; I mention here only a very few of these, which were of formative importance for me. One is the unique initial impact of Biblical Christianity as an utterly self-denying, persecuted and yet non-militaristic movement. The intrinsic implausibility of self-deception or untruthfulness is pointed by the outstandingly sober and selfless actions of the early apostles when faced with heavy persecution on all sides. One relevant study was that of Gilbert West, who was reported to set out initially to discredit Paul. The historical authenticity and reliability of the written records is fully examined in "The New Testament documents: are they reliable?" by F F Bruce; they quite outclass all other historical works for evidential value. The continuous existence of Bible-believing local Christian churches, and the confirmation that this implies of the primitive origins of their doctrines and practices, is documented in such accounts as "The spreading flame" by F F Bruce, "The bridge of history over the gulf of time" by Cooper and "The Pilgrim Church" by E H Broadbent. For all Christians and especially those without the bookish interest to follow such lines, the new power over sin discussed above, necessarily personal in character as God's "experiment", is the clinching evidence.

The soul in Psalm 19

The Psalm conveys God speaking through Science and the Scriptures; now through the soul.

Psalm 19:12-14 Who can discern his errors? Forgive my hidden faults. Keep your servant also from wilful sins; may they not rule over me. Then will I be blameless, innocent of great transgression. May the words of my mouth and the meditation of my heart be pleasing in your sight, O LORD, my Rock and my Redeemer.

Neither Science nor the Scriptures alone cover the full revelation of God in Christ. The third revelation is that God speaks through these to the inner person.

Science alone is certainly not enough. After discussing evidence for mechanism in biology and how he reconciled that with Christianity, Douglas C Spanner finishes his booklet "Creation and Evolution" by clearly explaining how no amount of scientific persuasion can alleviate the fundamental problem of spiritual rebellion. In particular, no 'apology' or defence of Christianity can make it any easier to be a Christian by removing the intrinsic unpopularity of the requirements of a Christian. The parable of the Sower (Matthew 13) illustrates that the key to the problems of life lies at a personal level. This is, in Lewis's words, "the envelope I am allowed to open." If I want to know who God is, and what He wants of me, it is not a Superconducting Super-Collider I want to build; it is an honest examination of my own life's motives and problems. When I do, I immediately hit a huge problem - a recognition of my unreasonable misadjustment to God's beautiful creation, my basic errors which I cannot understand, let alone cure, my overwhelming need in the sight of a holy God and my total dependence on His love. If creation shouts God's praise, why doesn't every human?

Science, like the moral law of the decalogue, can bring us toward God; but it is inadequate for the last step. The full explanation of what David was feeling for in Psalm 19 are found only in the New Testament. But this has to be reflected in the experience of human life to be effective. Here everyone must tell his or her own story. Christian assurance came to me personally from the Bible verse John 5:24. It echoes and amplifies Psalm 19.

"He who hears my word."—we are privileged to be exposed to God's self-revelations

"..and believes on him who sent me..": -- God's revelation, supremely that in Christ, is reliable as a foundation for belief

"..has eternal life.."—responding openly and appropriately to those revelations necessitates and supplies a fundamental personal change

"..and shall not come into judgement.."—the question of sin and evil is resolved, at a personal level

"..but is passed from death to life."—the change and resolution is here announced by God to be structurally complete, although it is to be worked out in human life.