**Armour of God**

**Comment and Presentation**

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**See comment and book recommendation at the end**

**Presentation:**

Saint Patrick’s Basilica

Faith and Science are they enemies?

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Does science oppose faith, and does faith oppose science? Not long ago ‘natural reason’ was the axis of this question: whether faith and reason are at loggerheads, or is believing reasonable and reason amenable to faith? Can reason bolster faith and its objects, and can faith develop and enlighten reason. The resounding answer “yes” was well settled and ramified over several centuries, but now increasingly many think that physical science is the epitome of reason - not, mind you, even metaphysics or literary criticism or jurisprudence or good governance or exceptional gaming at chess. So our question is now about *science* and faith.

As the contest of ideas is notorious for coming to few conclusions, secular commentators of science often find stouter rhetoric in selecting from scientific evidence. Take for instance the claim in 1988, published by the reputable journal *Nature*, that carbon dating showed the Shroud of Turin a medieval hoax: a touted triumph of science over piety. The institutes responsible for the study pointedly failed to release the raw data, which has since then been obtained under freedom of information.

The data show the ‘evidence’ was selected, with inadvertent bias, from repairs to the shroud’s edges made after years of public veneration. New evidence of embedded gold particles apparently from ancient Byzantine reliquaries (determined by their alloy makeup) implies that the Shroud was already an object of great veneration by the 12th century .. and some of the gold appears datable to the 6th century in Lydia. Pollen spores have also been found that locate the shroud earlier, in the Holy Land. So what was considered settled on select evidence, remains open to pious thought.

In *The Logic of Scientific Discovery* and other works which won him acclaim as a sort of ‘doctor of Science’, sir Karl Popper maintained that scientific evidence is always partial, provisional and subject to qualification and interpretation, which is why scientific theories are always evolving, sometimes with revolutionary change in paradigm shifts. So science substituting for reason, when it wants to challenge faith, really amounts to a retreat from clear-headedness to a rather brittle closet of passing fashion, built on shifting and limited evidence.

This pinch-hitting is most curious, for several reasons. Let’s just consider one. Kurt Godel, a mathematical logician greatly admired by Einstein, proved that any self-consistent logical system - such as the language of any physical science, but also other systems of thought that aspire to consistency - will produce well-formed predicates that are *true* but entirely unprovable within the system.

Let’s let that sink in for a minute. It means that in arithmetic say, there are well formed formulas that might truly claim to produce only prime numbers, but which as a formula cannot be proven true in arithmetic. A formula like, “take a prime p, double it and add 1, and if the result does not end in 5 (using base 10) then it is prime.” As it happens this formula generates more prime numbers than you’d expect, but is not perfect, so it is not true, let alone Godel formula. But Godel shows there exist such formulas whether discovered or not, that are true, but cannot be proven true in the arithmetic - and so remain conjectures unless proven in a higher realm than arithmetic.

So-named Godel sentences or formulas are truths composed in the terms of a science, but not provable there. This means - wait for it - no science is complete for truth. A consistent physical “Theory of Everything” can only ever be a theory of not-everything. Religion too, the “science of the divine”, doesn’t claim to grasp of all truth either. But at least as well as science, the sense religion makes of what it does receive - when it makes sense and is not entirely mystery (oh yes, science has its mysteries too) - is at least as rational as any science.

Revealed religion for its part is given an extra boost to be already more than a first order predicate system. When Jesus said “the Son of Man is Lord of the sabbath” he was transcending the first-order logic of law.

By virtue of Godel conjectures in a physical science, many things have to be taken on plausibility credit, not proof. Albert Einstein was one to point out, that trusting the world to make sense, or expecting that it *must* make sense is an act of faith. Why should the world accord with mathematical or other glimpses of order, unless there is an implicate order tacitly sought and believed to be there? The trust is founded on a basically religious outlook: the principle that “order is the first rule of heaven”. It is a genuine wonder how often the trust proves well-founded.

To the objecting atheist who says it is anthropomorphism to presume theres’ a God and His order, we say presuming the world will be amenable to the order of mind, is every bit as anthropomorphic. And even that ‘anthropomorphism’ as a proclivity of reason is justified by the results. Wisdom is glorified by its children, which include our insights and good ideas, ‘good’ meaning fruitful and not offensive to the dignity of the searcher. To be plain, I mean moral ideas.

Getting back to Godel, to prove his theorem he had to work at a higher level called modal or meta-logic, corresponding each scientific sentence to the ‘countable infinity’ of natural numbers. This demonstrates that to speak of a science’s limits or its open prospects for further work, we must enter a meta-scientific realm of discourse such as we’re using right now.

In a rich science with a large number of predicates, the number of Godel sentences can itself be large. It is at this level of meta-discourse that the appeal to truth for any one of them is meaningfully discussed. This is rather closer to aesthetics and heuristics than it is to blackboard science. In fact aesthetic reasons have often been the determining factor in accepting that something ought to be true, such as wave nature of an electron, and then tests and confirmations (or not) follow suit.

Physical cosmology has already run into surprises that show how little we knew when we thought we’d gained a handle on the elementary particles, atoms and constituents of all thingly things. We appear to have guessed at only five (5) per cent of the matter and mass-energy of the universe, the rest being what we’ve labelled dark matter and dark energy.

Dark in this cosmological sense denotes lack of physical light or reflectivity, and our own lack of understanding. Without all that dark unknown energy, the accelerated rate of the universe’s apparent expansion, can make no sense. So far, many interpret it as a universal energetic field in vacuum whose average state is not zero, rather than zero-point vacuum fluctuation energy. It seems convenient to associate it with the now discovered Gibbs field (and Gibbs bosons as excitations of the field), but that is conjecture. Time will tell whether it is provable, but it may not; and that will not ruin its appeal.

Many strange things in Quantum Mechanics involve a particle seeming to be in two places or two states at the same time, where even the understanding of time is open to question. One conjecture to make sense of it is the existence of non-local “hidden variables.” The very name shows its conjectural nature. It may well be true, and always consistent with the findings we obtain in experiment, but maybe not provable. So long as it mitigates the untenable breakdown of causality, and remains consistent with outcomes in QM experiments, it will not lose its appeal to reason.

Dark matter seems needed to explain spiral galaxies being stirred like the steamed milk on your coffee by something other than the known gravity and centrifugal forces. Both dark matter (which may be mass-energy) and above-mentioned dark energy amount to a gaping hole in physics, and are reminiscent of another postulate long ago, called invisible ether, which was supposed to be viscous, although nothing conceptually discounts it being the opposite, as in superconducting currents.

If ether exists it does not affect light in any direction, as shown by Michelson and Morley, hence the darkness. It was set aside as a fruitless sort of hypothesis because of overtones of non-local character or absoluteness of space. Even so, empty space had to have mysterious electrical impedance and polarizability, for electrodynamics - so incredibly successful a theory - to succeed. Such is the profound marvel that light can travel in empty space as a polarization wave.

Now, the conjecture of ether as dark energy or the Gibbs field or something else called ‘quintessence’ seems warranted; but proof may be impossible and the idea held-to just because it is at least consistent with findings, as Godel predicates are, and adds to plausibility.

Theology also presents truths, some of them unprovable in the manner of Godel sentences. One comes from Saint Anselm of the 11th to 12th century, writing his *Proslogion.* The universe derives from a being *than which nothing greater can be conceived*. This *nomen*, as some call it - naming the supremum of all good, a supremum so good that it exists (is not a concept) and transcends all good - anticipates Aquinas by a couple of centuries.

This ‘ontological’ *insight* dawned on Anselm in a dream, with its profound connection between the logical conceiving mind and its God. Logician Alan Turing has shown its soundness, using meta-epistemics called modal logic. The intelligibility of the nomen is such that God’s existence makes it rationally creditable to wonder, but not to be an atheist. It is rather like Pascal’s wager: if God exists then whoever understands the nomen would be irrational to continue as if He didn’t .

Of course, as the object of a tenet in scholastic theology (even though predating the *schola*), God as just-conceivable root and crown of all good - including all existence (hence the term ‘ontology’) - cannot be proven by its logic, but the logic is fully consistent with it.

Objectors claim the Godly ontology must fail if the extant devil is no good, since a greater conceivable good would be one that allows for no evil. But there is the thesis that the overcoming of evil is a still greater good than innocence (though the innocent should not risk encountering evil), and the ‘existence’ of an evil being does not contradict the goodness of being a creature. Existence is the only intrinsic good of the devil, besides the good purposes God may have for it to test and even fashion greater creaturely goodness.

The innate knowledge of a dire struggle led Manichaeans to posit two uncreated gods, one evil, one good; final greatness redounding to the one who prevails. Aside from the error that this position is ambivalent to the greatness of good as against the greatness of evil per se, an uncreated evil god would not be so perverse as a creature created in goodness who turns against God who *is* goodness. Overcoming the same is a greater glory for the creature of the good God, which redounds to His glory. Said Irenaeus: the glory of God is a saint: man or woman fully alive.

Anyway the meta-logical result helped Turing to embrace theism, though it was not enough to deliver the *Personhood* of God (even though the connection between human and divine conceiving opens the door of theistic personalism). Anselm’s nomen entails that if God exists then He has to be the supremum bonum. It is a reverse *evidence* for belief (evidence from entailment, not proof) in one who appreciates the good.

If Anselm’s is a Godel sentence in the scholastic language of theology, the objects of faith of course are more than scholastic theology. But in the middle ages, it sounded as if Anselm was claiming you could reason your way to God, and in fact had to do so or you weren’t rational, and so greats like Bonaventure, Duns Scotus, Albertus and Aquinas put it aside. They could not as yet recognize it as a Godel sentence, though they did not oppose its truth content. And of course because it actually is no proof of God’s existence unless you realize goodness must have a supremum (which was guessed already by Seneca by the way), it is no more persuasive than any of their other demonstrations of the necessity of God.

To recap now, on the front of sciences (and theology is a science), if a posit *is* true - as is plausible in the case of dark energy in General Relativity, or hidden variables in Quantum Mechanics - it may be of the sort that is not provable (nor disprovable) within the system, whether in physical cosmology, scholastic theology or ecology. But it will comport with what is known true, so it is not reasonable to discount it, especially if it adds to the whole plausibility of the theory or logic at hand.

Speaking of ecology, recognition of the credit due to plausibilities shows a greater need than ever for an ecology of mind, another word for critical thinking. Critical thought was the scholastics’ real program, memorably lauded by several popes in the 19th century and by the previous two popes we had been blessed to receive. It does not exclude, but embraces the Augustinian methods of search for Godel sentences. Anselm himself was following and studying Augustine when he wrote *Proslogion*.

So as I say, it is curious that the popular press treats physical science, and not even metaphysics or jurisprudence or fly fishing, as the epitome of that genius we call reason. I see it is a brittle haven, a last bastion of retreat, where despite mounting evidence of God in every realm of endeavour including ‘science’, the avowed unbeliever simply will not believe.

In a world that is being construed by narrative-setters to be accountable to scientific thought, even though mathematics has shown how limited that really is, we’re being led to view faith as an irresponsible indulgence in fantasy. Some superstitions, as in the New Age, really are fantastical, but it cannot be concluded from them that faith opposes reason, still less science. It’s the worst ecology of mind to draw that conclusion, as Richard Dawkins has done.

To divulge my own position, I view the dramatic post-war rise of ‘neo-scientism’ as an outgrowth of atheistic materialism, part of the little red book of ideological socialism. Just as words in Orwell's *Animal Farm* and *1984* were redefined for the aims of the governing ‘dialectic’, so is science being redefined for social engineering. It no longer means gifts of the Holy Spirit: knowledge (*scientia*), understanding, wisdom.

The trend if unchecked will make of *science* the password, mostly of non-scientists, who claim proper authority over all of man’s achievements and aspirations: a reigning humanist religion. It is ideological imperialism, claiming self-justification *as* science, because ostensibly ‘evidence based,’ from select evidence. Just consider how the supposed evidence of an uncontrollable firestorm in the Amazon, fires are factually below the norm of several years, have been media-parlayed into an international scream against the government change from ruinous socialism.

This public duping to the effect that the gurus of science know best — the gurus being science’s self-appointed epistle-writers — this tsunami, has come about from a narrative long in play. Its mavens - be they secular humanists, popularizers of science or media darlings - certainly have no time for religion, even though many scientists themselves are profoundly religious, as were most of the great founders of the physical sciences and eminent subfields. Jettisoned from the public square is any notion that theology is queen of sciences, or that science is her handmaid.

What is science after all? It’s the giving of systematic attention to facts known and others sought, in *any* field of human interest. Science is not dry, but a creative work, in the sense of Ars (root of ‘art’), as captured in the title of one memorable little work on personalism, “The *creative* retrieval of Thomas Aquinas.” Creative retrieval, also called research, is *science*. The well-done praxis of a science, relating facts to facts and to other fields of knowledge, is an art. And whereas science and art are work: blessed work, *hard* work, the balm of their blisters is a wondrous gift: insight, and faith even in the absence of much insight. If I may misquote Shakespeare “faith, that knits up the withered sleeve of art”.

The lost preeminence of true belief, or even due regard for the plausible, has affected theology itself. In 1984 (the year, not the book), then-cardinal Joseph Ratzinger stoutly upbraided exegetes for putting understanding before belief, in diametric opposition to Augustine’s great prayer first to believe and then mayhap understand. It is really a take on the sound edict “fear of the Lord is the beginning of wisdom.” Faith is the beginning of science, where the investigator ventures to believe that the world is going to make sense. Quantum theorist David Bohm called it the implicate order.

The dramatic increase in aggressive secularism and wholesale loss of belief has gone hand-in-glove with lacklustre witness to faith in the academe of theology. I don’t pretend to be an expert here, albeit that I am a catechist and Catholic apologist. But firstly, physics used to be called natural philosophy, and when it delved into cosmology it was apt to cite natural theology. And to be fair, this talk is on faith as well as science.

Theology studies, even Christian or rather ‘epichristian’ (meaning ‘*about* christianity’) are pursued by nearly anyone seeking professional accreditation for christologous employment or activism. *Christologous* is a word for the culture of ‘professional Christians’ and pedagogues who are, as often as not, unbelievers who become unbelieving teachers. That of course makes them unbelievable teachers: but yet they are believed.

Thus academia - even at the modest level of teachers’ college - has made of theological studies a smorgasbord of indifferentism, calling dissent ‘sophistication’ and ‘higher criticism’ (which is a further key password for a particular school of secular ideology called the Frankfurt school).

There is at work a definite ‘science’, a really dark art, to the foisting of unbelief as theology, but that too is for another talk perhaps on the great modern arch-heresy of the spirit of the world, or dressing up ideological socialism with other names. Let it suffice to remember that the blessed Virgin warned the world of these errors spreading right from 1917. Pope Benedict XV at about that tine had declared socialist thought - into which the due terror of fascism was driving many (including the founders of the Frankfurt school of social engineering) - to be the ideological order of hell.

Thus in summary of this first part: if the extent any openness to debate remains whether faith and *reason* are in conflict, reason is now proxied by its touted paragon - physical science and the tangible sciences that follow its method. You have to show scientific reasons to believe, and are asked what good your faith does for science, and if not, your method is faulty.

**Method**

With method as taskmaster, a tail is wagging the dog. To have reason (as in the French idiom “*tu as raison*” - “you are right”) truth-content should have preeminence, whether or not some method had been followed to gain it. If you find it, the truth, not the method, blesses you. The method might help convince others, but truth can be happened-upon artlessly, and then the art of explication follows. Indeed many great discoveries or fruitful hypotheses have dawned that way.

Modern cosmology was born of star-gazing, including what we all do when camping, watching for shooting stars. *By accident* the universe was found to have a faint microwave background, pointing back to the 14 billion year old origin in a Big Bang, predicted by Georges Lamaitre, a Catholic priest. Fr. Lamaitre did inherit from Einstein a method for the prediction, but not for the discovery.

Method *per se* is more the husk than the grain: there has to be something for it to be a method *about*. The same can be said of law, which Stephen Hawking forgot when he opined the universe created itself out of physical laws. In his limited defence, modern scientists make bad philosophers as Einstein famously said, not least because of over-specialization.

Laws have to be laws *about* something: if nothing thingly exists, neither do the laws - unless you acknowledge them in the mind of God. Eureka (“I found it!”) as Archimedes exclaimed in his bath, did not mean “just as I thought.” That’s why the French word for experiment is “experience.” You experience nature, and that begets notions, which lead to more careful prodding. Method follows the data that give it reason to be.

The distinction between method and object is somewhat glossed in computer science lingo, where ‘method’ is an embodiment in code of limited scope, keyed for the data it will process. The gloss is in the fact that both the method’s code and the data are nebulous bit-streams, and both can be called objects; but even so a method would be nonsensical without the data. It’s the data that determines the method, not the other way round.

Today in the popular mind, method has new prominence - in particular the touted scientific method - supposedly after Immanuel Kant, which is quite an anachronism. Kant tried to pigeonhole method, so uncooperative in its many forms. The straightjacket is seen in causes that cite ‘evidence-based’ methodology to justify telescopic aims, by re-interpreting select evidence for support. A goal might be population control, where the theory of anthropogenic climate change is marshalled to support it, with highly questionable models and much discarded data.

For instance, dyslexia used to be thought due to over-lateralized (left-right) brain function, but when tests were proposed that might find attention mechanisms to be as big a factor, the investigators for whom brain lateralization was darling (because they had vested cognitive methods to modify it) pulled from the study. Self-styled experts like to imply they have the body of presumptive evidence, and it is not open to question, or ready examination. The 1988 studies of the Shroud tell a similar story.

This puts me in mind of textbooks. A non-didactic approach to knowledge transfer is a minefield of error. There’s value of course in manuals as a syllabus guideline for neophytes, if balanced with historical and personalist commentary. But writers of textbooks generally arrange the order of findings or cherry-picked facts as a canon received and in that order, either historically or in accord with their own frame of first order logic.

If textbook producers are weakly akin to catechists, they are still less like apologists or expositors of their subject who trouble to raise points of controversy or development or relation to other fields. They act instead as middlemen for a product delivered. The product is *conditioned learning*. I don’t know about you, but I never would have liked to think my learning was being conditioned by an agenda of delivery, rather than by the inspiring thoughts of those who laid all the fascinating groundwork.

Textbooks too easily serve as babysitters to inquiring minds, and minds left to feed exclusively on them are impoverished by the transparent ‘method’. Discoverers themselves hardly ever used the Kantian ‘method’ until they had in hand the experience of some new marvel, even if mathematical and not tactile, that they wanted to explain, replicate or develop further. Human development, debate and genius, are the things that inspire a person to take real hold of a subject for him or herself.

A textbook is an occluding screen. Behind the screen lies research - and you need not be be a certified adept to learn what are meaningful questions for research, and nowadays online fora abound. Research is engaging, even galvanizing. When you delve into a topic more expertly, you are immersed in a stream of papers in journals, from colleagues around the world sharing your interest - and this true of every art and science. The sheer volume of text even in one narrow area, say plasmonics (opto-electronics of quantized electrical ‘plasma’ at metal surfaces) is so vast that the content *cries* *out* for prising apart and being shown in relation to other knowledge.

Thus scientific literature like other literature is a huge fund of beautiful epiphanies, but it is woefully undersold by commentators who lionize method or make dead-end conclusions from provisional evidence, whether positive or negative. It’s important to note here that the reigning narrative - let us say trans-species evolution by natural selection and random mutation - may not be borne out (trans-speciation certainly isn’t). So there is a great unanswered call of scientific writing to talents with honed skills at critical thinking, something that is little taught today. Please notice, I said “critical thinking”, not ‘higher criticism’ which often serves as its parody.

Now don’t get me wrong: evidence *is* extremely important to substantiate any claim, whether in faith or in science. There certainly is compelling evidence for the objects of religious faith, because among other things beauty, order, rightness or aptness (which are attributes of goodness), and wisdom offer great evidentiary power for belief.

There is now an impressive convergence between physical science, such as cosmology and other frontiers such as cellular biology, merging with claims of faith wisely interpreted. That convergence also does elevate ‘method’ - the methods of contemplation, pondering, prayerful imagination and faith-moderated heuristics with surprising benefit to scientific explorations - both in promoting them and in morally constraining them. A paper delivered at a physics conference, as an undergraduate, was on the role of imagination in theoretical physics, and now that I’m wiser I’d have addressed the beauty of order as heaven’s governance of imagination.

Almost nothing in modern science is directly tangible in the palpable sense of Alva Edison twirling a lightbulb filament between the fingers. Sub-atomic particles, force-fields, nanosecond laser shots, easy tunnelling of electron bunches across forbidding barriers, black holes and invisible mass-energy pervading the universe beyond our tactile reach - and much else besides is intangible.

Hard it may be to realize that gazing at a star is to be glimpsing its ancient pre-history. It may no longer exist: its supernova explosion of many years past not to be seen for many more to come. So if ‘seeing is believing’ then such removes from sight must mean that the belief of scientists in hypotheticals including the quark - never occurring in isolation - has the character of fideism. It should offer common ground with sure faith.

For the most part what is parlayed as firmly believed in physics or theoretical biology is hypothesis, more or less supported by other theory and some ongoing, always limited observations. The greater support is from the same human ground of confidence that assures faith.

The expansion of the universe is thought to be accelerating, suggesting that big G in Newton’s law of gravitational attraction is not strictly constant. The ‘rate’ of time clicking has changed from the start, where an instant had huge temporal consequences. Hotly disputed is whether space-time and matter’s force-fields are uninterrupted continua or are they discretized like the information bits on a DVD - a sort of digital universe at root. That idea is a new incarnation of philosophical atomism.

As well, it is unsettled whether an observer can be ultimately removed from influencing the outcome of even the simplest observation - say an experimental recording that runs on its own while the investigator takes a surfing holiday. One Nobel prize winner did just that, demonstrating that single photons self-interfere when passing slits. The new question is whether the photons were influenced by the contrived set-up, in effect conditioned by, or informed of, what they were expected to do.

Richard Feynman’s computational solution was to sum up the possible histories of any photon in the whole ensemble, the presence of slits weighing in on the outcome by conditioning photon propensities. Feynman may not have been on the side of a propensity interpretation of probability (opposed to a stochastic frequency interpretation), but quantum theorist David Bohm whom I was privileged to interview, thought so.

Thus so-called predetermination is one of the hypotheses competing at the roots of quantum theory today. So is a many-worlds interpretation, which runs past the point of sensible grammar, unless it means ‘ideational worlds’, because the word ‘universe’ means the sum total of thingly things; so a real multiverse would be an oxymoron. Still, it is taken as seriously as how many angels can dance on a pin.

I hope I’ve got you to feel that religious faith, even though vested in intangible plausibilities and experiences of selves and others, or in revered received texts, is on footing no worse than the fundamentals of physical science. Reason marks the conversation between cosmologists in search of physical world-view whether they are believers or not. For it is not that science and faith are at odds, both pursuing truth in their own lights, but that false scientism is at odds with both faith and reason, or faith and reason’s child - science. There is the faith of rational scientists, and there’s a rational science to faith without which any heresy can rule the day.

That said, it must be admitted that disputations in cosmology can border on the polemical, not least because there are some whose ideas - particularly in the New Age - tend to the *cracked-pot*. But theological exchange is also marred by harsh disputation, not least because of some wild heterodoxies, such as the occult pantheism of Giordano Bruno. Unfortunately Bruno was burned at the stake, which fuelled later claims of aggressive secularists that the Church could not abide the contest of ideas. I think saint John-Paul’s view was that it was alright to grill Bruno, but not to broil him. for that made the Church brittle and defensive in its reaction to a true believer who was admittedly very crusty, mr. Galilei Jr.

The fact that Teilhard de Chardin a century ago only received a stern reprimand for his new-age ideas ought to have mollified cynics and New-age fans of Bruno, but you see he falls in that category that no-one would prefer to own: “among theologians, something of an anthropologist; among anthropologists something of a theologian”.

As I outlined at the start, there is something other than sore-points in history that keep believers and some scientists chary of one another. Aside from a raised pitch of polemics between for instance Sam Harris - who wrote the scurrilous *Letter to a Christian Nation* and Ravi Zacharias, in his *The End of Reason*, what really now strives to pits believers and scientists at each other is an uber-narrative. The maestros of that narrative are dedicees about their irreligion, seizing on science as their special purview. Ostensibly this is in revenge for the supposition, made by revisionists in every university, that the opposite uber-narrative was once dominated by the Church, ready to squelch the explorations of physical science.

That is just a false excuse or rationale of irreligion, whipped into a frenzy by generations of academics following what they call “revolutionary thinkers”. Michel Foucault, an enemy of authority and of ‘givens’ like human sexuality, was one of them — and too bad really, as another Foucault, Leon who died a Catholic but was eclipsed in postmodernism, had invented the cosmic pendulum which not only tracks the earth’s rotation but, if placed at a pole or on a satellite above the pole tracks the earth’s solar orbit.

Many of the postmodern intellectual offspring don’t even realize how revisionist and dismissive of facts their narrative is. For instance, all the roots of modern physics, chemistry, genetics, and even neuropsychology, were fostered in the healthy fideist environment of exploring God’s handiwork, especially from the renaissance years onward.

Even the Copernican paradigm shift was incubated in the Church’s zeal for astronomy, for which the episode with Galileo was a very unfortunate hiccup, due as much to his megalomania as to ecclesial caution in endorsing heliocentric celestial mechanics as giving any *better* imagery of the heavens than geocentrism — and is it always better? For General relativity, any place can be treated as the pivot of celestial motion, as Einstein comically signified with is index finger “the centre of the universe is here, where I point my finger.”

Few people realize that nearly everything Galileo proposed or computed was in detail wrong, often embarrassingly so. He failed to explain the tides for instance. But he is rightfully commended for letting faith give him boldness to probe nature and to hypothesize, even if Hans Kepler - also a religious man - was doing a more successful job on many fronts - including the order of planetary motion - with the added virtue of humility.

The real reason for overlooking facts, such as the religious devotion of Copernicus and Galileo and Kepler, of Newton and so many of those who laid the bedrock of modern sciences, is agenda-laden. You all know that Mendel fathered genetics, d’Alambert, Faraday and Maxwell fathered electromagnetism, Mendeleev fathered modern chemistry, every one of them deeply devout. Lise Meitner, who helped uncover the mysteries of atomic fission, was a Jewish convert. James Clerk Maxwell, father of both colour theory and electromagnetic communication (radio, TV, cell phones) was expert in scripture and an elder in his church.

As an evangelical Maxwell stated that social studies cannot hope to make sense of man if pursued using the ill-suited methods of physical science. Even the clutch of atheists or agnostics who contributed to quantum physics along with others who were theists did not advocate for atheism as governing their work or interpretation of findings. Thus when a fellow graduate student said “I gave up on God when I discovered quantum mechanics” I could only blink. I had no idea how my favourite topic in science leads to unbelief.

More recently, the agnostic, now converted French investigator of gold dust in the shroud of Turin has said “the ‘science’ and the truths proclaimed by the Catholic religion were not in conflict, but strengthened. … With this discovery I am happy to be able to show why Christians should not be afraid of science. We must speak the truth, whatever it is.” [quoted by John Burger in Aleteia July 22 2019]

So the reason revisionists make war on religion - wielding scientism as a weapon - is more disingenuous than mistaking science for secularism. Something further is at work than just being wrong by category mistake. As new wonders multiply before us, such as big-bang cosmology, or mass derived from symmetry and symmetry meaningfully broken, those scientists who are yet agnostic are presented with reasons to believe. This is worrisome to an inveterate skeptic. Hiding behind ‘skeptic’ is just a ruse for the obdurate, because skepticism is supposed to mean open to evidence.

And not only secular skeptics are entrenched: disaffected believers too. Providence has arranged that just at a time when the subtle impediments to faith arise from liberation theology as cover for atheistic materialism, just as immanentist / syncretist variants of new-age ideas or a heterodox hermeneutic of inculturation further undermine the Church’s mission, just now in history: increasing signs of God’s existence and ageless care are manifest in the physical sciences. For instance there is more complexity in the structures and signal pathways within a living cell than in all the major cities on earth. The evidential power of this is something that dissident pedagogues, as well as secular masters of scientism, the media and humanist funding bodies, cannot abide. It may put them out of business.

**Response**

Now this all poses the question, how is a believer to respond? When we are caught in a narrative cast as paradigm of conflict, as Marxism is at root, one must recognize the tacit agenda and decide whether it is something to humour, like the tares growing with the wheat, or whether to expose the agenda. One could be conciliatory and show where religious faith’s non-canonical claims are moderated by knowledge obtained in science, a path recommended by Augustine’s second rule, cautioning theologians not to make bold claims for science in ignorance. One could on the other hand show where claims, such as the mantra “your mind is your brain”, should be mitigated or dismissed on both moral and scientific grounds.

For example of the first way, conciliation: in deference to the skeptic, a few Christian academics propose that not all evolutionary theory is bad, even if trans-special, as it is not outside God’s *power* to have used some animal forms to derive others. Others, like Thomas Dubay, a priest and scientist, note that the fossil record has no evidence for trans-species evolution. Thus Christian proponents *for* evolution of man leave it to speculative theology whether God has revealed criteria for inferring that He did use this available avenue, while their Christian opponents ask whether it would comport with man specially made in God’s image and likeness. Just because God *can* do something doesn’t mean that was His choice. He *could* have made the Eucharistic miracle out of lamb. He chose the staff of life.

The first approach risks selling out religion. The second risks making religious pronouncement on science that contravene Augustine’s second rule and views of notable scientists who are Christian, like Freeman Dyson.

But the danger in the conciliatory approach is, I think, more subtle. It creates gaps of theological category as if: natural theology covers God acting in ways that don’t make secular scientists uncomfortable, but where God might have reasons for acting inexplicably to science as we have it, that is speculative theology.

What is being wagged by this tail is too important. One comes too close to buying into secularism when saying that scripture never intends to address cosmology, ecology, social science or even jurisprudence. That’s plainly false: often enough, scripture intends to be knowing about these things, like the role of entropy in rust corroding and moths eating.

The real trouble with the deferential approach, for the scientist who is also Christian, is a danger of reversing Augustine’s *first* principle. It lets sure physical proofs be requisite before sure belief, and that is the leitmotif not of revelation but of logical positivism or empiricism: at root reductionism. Science has long since moved beyond the blinders of empiricism, to pursue reason and the order in existence wherever it may be found, and however mysterious it may be.

**Empiricism**

Galileo’s ecclesiastical supporters were right that scripture can be read too literally, and the fuller sense of scripture is an important Catholic principle of exegesis. But for the same reason, pondering on the formless void can mean something for a mind inquiring about the deeper meaning of form, as in Christ came in the *form* of man - not just the semblance. Or words like *firmament* (in Hebrew, a worked fabric) and *cosmos* (in Greek: ordered beauty) can declare the first rule of heaven: order in all its beauty. Were it not for biblical language and subsequent eulogizing on symmetry, even from the iron-age scroll of Job, I wonder when the insights of meaningfully broken symmetry - so key to physics - would have dawned.

Proof before sure belief is the demand of empiricism. Being dedicated to modern science since early youth, I am surprised at the return of an empiricist doctrinaire mood when atheistic materialists write about science. This positivism was on its way out even with Alfred North Whitehead and Bertrand Russell, who was no believer. In the nineteenth century, empiricism had encrusted into an unproductive chokehold on exploratory science, under the ‘goal-driven’ aegis of the industrial revolution. Some of that century’s later physicists, inspired in the lineage of Newton and Kepler, dared to be imaginative, but only the very thick-skinned might hope get away with jostling the paradigm. In the dawn of the 20th century the circles of Max Planck and Albert Einstein were only just able to herald a new paradigm, and that by discovering things undreamt of.

The empirical canon is really an imperious one, with a book of laws interpreted more like statutes. It acquired such force for conformism and a view of man as cog in a grinding wheel that pope Leo XIII and Pius IX before him wrote extensively on the dangers to intrinsic human dignity. Then God gave bright ideas to daring minds: Werner Heisenberg, Paul Dirac, J J Thompson, Wolfgang Pauli, Erwin Schroedinger and Louis DeBroglie who birthed quantum physics, and to Albert Einstein, the Georges Lemaitre and Gamow, and Alex Friedman, who founded General Relativity, perhaps He was showing that it was high time to be more inquisitive about His handiwork.

The first recorded imaging of a black hole event-horizon was recently captured in a worldwide array of radio-telescopes. A little before, quantum 'teleportation' of information (with perfect encryption) was demonstrated. The scale of next generation electronics is now down to a 10nm limit (1 / 100 of a micron or 1/ 1000 of a hair-width), with entirely new opto-electronics called plasmonics. Already flexible OLED (organic LED) displays can be worn, and are sensitive to gestures in air. Big-data mining with adaptive AI (artificial intelligence) is able to predict your next move with blinding speed and confidence, soon ready to drive your car.

These developments and sea-changes offer novel challenges and opportunities for scientists and technologists with Christian faith. The panoply now confronts even the student of Liberal Arts who wants to appreciate the signification of such developments from the perspective of the life of man and the signification of God's handiwork in ever more revealed realms. They and all of us can not only make sense of it, but take a proper moral guidance in it. We need only remember that God is the author of the beauty and order that we are forever plumbing, as He himself is without bound, and yet is anything but arbitrary.

Roy Schuman, a Harvard professor who had a remarkable conversion experience of speaking with Mary, heard her answer his question “what is the Holy Spirit?”. She looked up with ineffable love and said, “His Gaze!”

As the book of Wisdom puts it: “We can barely guess what is on earth; and what is at hand we find with difficulty; yet who has compassed what is in the heavens? Who has learned your counsel, unless you have given wisdom and sent your [ruah khodesh] from on high? Thus was the seeking of those on earth set right, and people were taught what pleases you, and were saved by Wisdom.” [Wis 9:16-18]

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Further Reading: Presenter’s Recommendation:

I recommend [*The Evidential Power of Beauty*](https://www.worldcat.org/title/evidential-power-of-beauty-science-and-theology-meet/oclc/488810114&referer=brief_results) by Thomas Dubay,  S.M.  [Ignatius Press, 1999] . As it is Ignatius, I would imagine the St. Patrick book store can easily get it.  I fetched mine on Amazon.ca

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**Comment from Attendee in Gathering:**

Gary:

I thought that I owed you this feedback. It would have helped to explain right at the start what science is and how it operates ("how their minds work"), and by comparison a comment on the essence of faith. And then, tangentially, how both of them are, or can be, related to Revelation and rationality. Some of your insights were profound. For example, your distinction of pluralism and pluralities, but there was also an opportunity to reflect on how the failure to recognize the difference has been a plague in Canadian political life.

I trust the audience understood that belief systems (any system?) cannot function except in relation to a supervening standard - a meta-standard, which in fact cannot be other than God himself. My father used to explain that theology differs from other disciplines inasmuch as in the others the actor or observer stands above the subject whereas in theology the observer stands below the subject of inquiry. This means that they can never be on the same footing.

In this regard I disagree with the impression created by even the best of Catholic theologians who describe faith and reason to be like the two wings of a dove - which implies that they are equally important. My metaphor is that of two horses running in tandem, with reason running behind and supportive of faith. Similarly I disagree with the popes who have said that Christians and Muslims share the same God. Slogans can be dangerous, especially the ones that may sound so good.

Here endeth my homily.

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**Reply to Attendee from Gary Knight:**

High school classes have even raised questions that make clear they read the popular press on everything from black holes to teleportation. But a (good) speaker ought to be adept enough to sense where he or she needs to anecdotalize more - especially when they arrive (as I did) with three possible texts !

I was gratified that the first questioner thanked me for mentioning Godel sentences as a demonstration that science without meta-science is dead. Several (five that I know of) young people at the session expressed great eagerness to get copies of my talk. They and others at the coffee scrum confirm your trust that " *the audience understood that belief systems (any system?) cannot function except in relation to a supervening standard*"

I didn't call that a 'standard' because of its textbooky sound, but rather a meta-logic, heuristic, and aesthetic. As well, another scrummer appreciated my emphasis - as you elucidate here - on the principle of faith above reason (Augustine's first principle as I called it) as compared to the principle of avoiding incautious pronouncements in faith that might have a bearing in science (Augustine's second principle as I called it).

I like your harnessed horse imagery, for I mentioned that the 'scientistic idealogues' have jettisoned from the public forum the wise adage that reason (or science) is the handmaid of faith; or that theology is the queen of sciences. A good friend present also said, so truly, that such a talk needs an editor. A good bit of irony well received, as I'm often leveling that observation at others, like Stanley Jaki.

As for popes being in tone 'ecumenical' with Islam (John XXIII, Paul VI in Vatican II, John-Paul when inviting world religions to pray at Assisi, and Francis), I believe most of them were simply underlining that as there is one God, and since Jews, Moslems and Zorastrians adore one God, that God is the one we proclaim. Paul did the same thing for the Greeks who were willing to acknowledge the unknown god might be over all others (Socrates apparently did), and used that common ground to proclaim the personhood of God and His redemptive act.

None of the pantheon could really be called persons in anything close to an anthropomorphic sense: anyway they weren't so referenced, in the lingua franca (half-human mythical offspring were rather, avatars). [As an aside: humans being anthropomorphic towards God is of course a thin critique of Judeo-Christianity, because in making us in His image God was being deopromorphic towards man; so discovering the depths of what a person really is, is a Godly pursuit]

As ours is the only revealed religion of the Person - the person of Christ, the popes are appealing to other theists, that they might emulate (or "be jealous of") the personal relationship we have with God, and not be so dismissive or 'insulted' by the mystery that in the One, He is three persons: 'three times for emphasis' as I like to say.

Whether it is a 'slogan' to speak of the same God I am in doubt. But I'll agree that prospects for this ecumenical approach in evangelism seem greater for Jews than the others .. and so far that isn't much. Hebrew scriptures hint at plurality of persons in the one ('ruah khodesh' or Holy Spirit is shown active in Genesis and so of course is the Word; the word for God is plural in form: Elohim; God speaks of 'let Us' ; and the 'angels' coming to Abraham speaking as "I" were three).

But even so, it was the magi (Zorastrians) who first went back another 'Way' and sojourned in India (so their relics attest, now interred at the main altar in Koln), later caught-up with by Thomas who made them bishops - so the oral tradition and second and third class relic evidence goes in India. And Job, who wrote (or chipped) about 1800 BC, some 450 years before the Mosaic texts, had no more (nor less) trouble acknowledging God in quite personal language than did king Darius, yet another Persian, so many years later. Neither did the king of Nineveh in Jonas' time. And certainly neither did Abram, even if his dialogues with God were in oral tradition until Moses.

Do we 'share' God ? Well, perhaps in the sense where He said "my house will be a place of prayer for all people." I think that was pope John-Paul's point in hosting world religions in Assisi (or Paul VI calling the whole world to prayer for the Apollo 13 astronauts). John Paul and many pilgrims knew (still know and often attest) that Assisi is like one big open tabernacle of the real presence of the Lord. You only have to walk there to know it, and no homiletical word even needs to be said.

But I agree that the most recent papal ejaculations seem ill-advised, as his word-choice seems to equivocate on whether we share the truths about God, His nature and His redemption. Because clearly we don't, and it smacks of indifferentism for a bishop to imply that we do ! Let's pray for our daddies who stub their toes on the rocky road.