

GODBLOGS

*On Religion from Sam Harris
to Bede Griffiths*

J. Andrew Ross

DRAFT PREPRINT 2009-01-25
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ISBN 0-00-000000-0 Ross International

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Introduction

This book is based on a lot of old blogs about religion and related themes. The blogs were first posted on the web in 2007 and 2008. I have added value to my efforts by stitching them together with interlocutions to form a running conversation and tidying them up editorially for the record. The result is a web-age reincarnation of a classical Socratic dialog, which is a hallowed form in philosophy when the issues are too amorphous for a more straitlaced monographic treatment.

I trust you will agree that the conversational form and sometimes demotic language do not imply that the thoughts expressed need be equally sloppy. Perhaps some of the thoughts are less than rigorous, but for my part at least I intended throughout to make serious contributions at the highest logical and scientific levels to our understanding of the nexus of concepts that people denote with the word “God” and related terms.

The best intentions gang aft agley, of course, and mine are no exception. Even the most patient readers will sometimes balk at my overly exuberant verbosity and profusion of esoteric references to highly technical literature. Yet this is all part of the plan. Most public forums of my acquaintance for the posting of blog messages dissolve all too readily into dismaying illiteracy and emotionalism. In such circumstances, the probability of being able to pursue a challenging and rigorous argument to a successful conclusion is near zero. By striding forth boldly with my own language and references, I winnowed my interlocutors down to a hard core of relatively serious thinkers who reflected quite well my intended readership for this tome.

Let me now offer you some introductory comments for each of the following chapters. The articulation of an ongoing stream of blog posts into chapters came quite naturally from the way the collection grew over the months, but still it cuts across the deeper thematic groupings at numerous places. Too bad – I must ask you, dear reader, to hold the entirety of the unfolding revelation in your mind as you read, until by the end its effect as a whole can have the desired effect. Together, the chapters convey a big vision, as I see it, which I feel unable to convey by means of any less intellectually challenging reading experience.

By the way, in these dialogs I have changed the online names of the other participants to protect their privacy. I have also trimmed their contributions to the point where they become little more than appendages to my own words. This is no disrespect, I trust, but merely an invocation of authorial privilege. My own argument is the focus here, since I seem to have enough to say already. If my interlocutors chose to trim and reuse my posted words in a similar way, then of course I would have no objection. For anyone who is interested, the original blogs are almost certainly archived for digital posterity and can doubtless be accessed for research purposes.

God and Sam Harris

In the first substantive chapter, I work off a few initial inhibitions and stake out my pitch. As I put it in an initial review of the contents in early 2007, popular discussions of religion are often dismayingly bereft of logical rigor or scientific clarity, but the new attack on organized religion spearheaded by Sam Harris has ignited a radical debate that sets new standards of quality.

Sam Harris is – or was in 2007 – a young atheist firebrand, one of the notorious “four horsemen” of the atheist apocalypse alongside Richard Dawkins, Daniel Dennett, and Christopher Hitchens. He is the author of two very controversial best-sellers on religion, *The End of Faith* (2004) and *Letter to a Christian Nation* (2006). More recently, he has kept a low profile as a humble researcher in the field of consciousness and neuroscience.

The other “horsemen” were already familiar to me, too. Daniel Dennett is one of the greatest living philosophers and I have enjoyed his writings on various themes for over a quarter of a century. His main areas of professional interest are consciousness studies and cognitive science, which are major themes in my own work, and I find I agree with him on most things. We have met and talked at professional conferences, always most amicably. His “atheist” book *Breaking the Spell* (2006) is diplomatic, even mellow, in tone yet uncompromisingly rationalist in outlook.

Richard Dawkins is the recently retired Oxford prophet of the selfish gene. His numerous best-sellers on biology and genetics put him in the front rank of advocates for consistent adherence to the Darwinian understanding of life on Earth. As it happens, I have never met him, but I share his scientific views and therefore feel some sympathy for the anti-religious stance he takes in his passionate manifesto *The God Delusion* (2006).

The fourth horseman is Christopher Hitchens, a contemporary of mine at Oxford, with whom I shared friends and acquaintances in the British literary and media scene. His journalistic exploits over the years culminated in his 2007 best-seller *God Is Not Great*, which has catapulted him to global fame.

As I was blogging the source messages for this chapter, the works of Sam and Dan were fresh in my mind and the works of Dawkins and Hitchens were prominent in the media. Their assault on religion – and especially on the Islamic extremists’ politicization of religious expression – was the backdrop to the exchanges. All the original exchanges for this chapter were posted on the Sam Harris threads in the *On Faith* forum, hosted by *Washington Post* and *Newsweek*, in January and February of 2007.

God and Others

The *On Faith* forum hosts threads based on target texts from many panelists, not just Sam Harris. My impression was that in early 2007 the Sam Harris threads attracted far more interest than any of the others, for obvious reasons.

But the other panelists were of some interest too, and I posted several messages that relate to the ongoing themes of this volume.

The Daniel Dennett thread needs no further introduction. Dan's target text was a politically correct and I hope tongue-in-cheek suggestion to alternate usage of "God" and "Allah" as names of the Abrahamic god. It found little or no enthusiasm among the bloggers, but an incidental comment there – all these *On Faith* thread attracted tangential posts that made it hard to focus for long on the target theme – caught my imagination, as you will see.

The thread by His Excellency Seyed Mohammad Khatami (former president of Iran and son of an Ayatollah) was of interest for a quite different reason, namely that here was an authoritative expression of a fairly orthodox yet evidently enlightened faith from a distinguished emissary of Islam. My statement there was an opportunity to test my diplomatic skills.

William S. Cohen and Janet Langhart Cohen reminded me on Valentine's Day 2007 that the power of love is undiminished in this world.

Jon Meacham is the managing editor of *Newsweek* and one of the hosts of the *On Faith* forum. His target texts were somewhat beside the point for me, but still I found some stimulating material there, as you will see. In particular, my exchanges with the the lady here called Soja turned out to be fruitful for reasons that become evident later in the book.

Sally Quinn is a *Washington Post* reporter and the other host, together with Jon Meacham, of the *On Faith* forum. Her target thread on eroticism and celibacy in Hinduism was naturally intriguing. Given my decades-long interest in the doctrines of Mahatma Gandhi, I felt compelled to wade in there and stake out a position.

God and I

The extended manifesto that opens this chapter was an attempt to get my thoughts on the God-and-I issue in order after reading Douglas Hofstadter's book *I Am a Strange Loop* (2007). The special significance of this book was that it reprised the logical conundrums that had metaphorically blown my logical mind a quarter-century earlier. In 1981, while I was in Japan, I read the extraordinary "metaphorical fugue" by Douglas Hofstadter called *Gödel, Escher, Bach: An Eternal Golden Braid* (1979). Central to that fugue were Gödel's theorems in formal number theory, on which I had written a distinguished philosophy thesis at Oxford in 1976 and about which I nursed the dream of composing some sort of fugue of my own. Needless to say, Hofstadter did the job better than I could have done it, and that was that.

This may seem irrelevant to the controversies surrounding atheism, but in fact, as you will have seen in some of my posts in the Sam Harris chapter, my whole contribution to the new controversy is made from a logical perspective arising from Hofstadter's work, together with my own earlier work in logic

and set theory. In my own intellectual odyssey, Gödel and Hofstadter play central roles. Together with the giants of set theory, they give me the formal paradigm for my main assertion regarding the denotation of a wide range of statements purporting to refer to the God of Abraham.

This chapter continues with transcripts of exchanges on the next Sam Harris threads. The story there continued in the light (or the shadow) of my manifesto, which as you will see prompted some feedback. In fact, the conversation gained considerable momentum. It just grew and grew.

God and Bede Griffiths

The earlier exchanges with Soja revealed her connection with the celebrated Oxford holy man Bede Griffiths. Griffiths had studied under the famous Christian apologist C.S. Lewis at Oxford and had then become a Benedictine monk. In 1947 he moved to India, where he established the ashram of Shantivanam, became known as Swami Dayananda (Bliss of Compassion), and wrote numerous “spiritual” books. In his later decades, his hair and beard were long and silver and he wore flowing orange robes. A more classic candidate for sainthood would be hard to find.

Another connection made this more intriguing. One of my earlier Oxford college acquaintances was a brilliant young scholar called Andrew Harvey, who went on to become a celebrated mystic. He hobnobbed with Buddhists and Sufis and Christians and wrote books on Rumi and Jesus and others. He became a TV celebrity, worked with Bede Griffiths in India, and achieved fame in America, where he settled in New Age comfort.

Naturally, I had to explore this mystic stuff. It turned out to have a fairly clear connection to the dialectical idealism of the German philosopher Hegel, with whose “logic” I had concerned myself for several years as an Oxford postgraduate. All this is spelled out at sufficient length in the exchanges up to and including this chapter of the book.

The chapter opens with my shortened edition of an *Earthlight* book review outlining Bede’s philosophy, and continues with my summary of an article on Bede’s perennial philosophy by Bruno Barnhart, OSB Cam, followed by my parallel account of my own philosophy, not as parody but as flattering imitation. I wanted to ensure that my own thoughts could achieve the level of mystic respectability that Bede had evidently achieved. Naturally, my attempt is far from flawless, and you, dear reader, are invited to remain sceptical. Only later in my “spiritual” evolution (later in the book) will a sceptical reader begin to sense something more than callow posturing.

The rest of the chapter is more stuff from the giant Sam Harris thread. It broke all records for length as the certified atheists joined lustily in battle with the Christian apologists for supremacy on the field of logic. At risk of being accused of triumphalism or immodesty, I say I won.

Panpsychism

The *On Faith* forum was only lightly moderated and wide open to abuse. Some posters were obvious crackpots who should have been hustled off. Sam Harris may have been aware of this as he started his own more zealously moderated forum using a more highly optimized software package. Perhaps he was just reinvesting his book royalties in a worthy cause. In fact, he created a forum where timid religionists stood no chance.

For all its flaws, the new forum had one big advantage. It enabled me to start my own thread and decide for myself what I would and would not discuss. So I settled on the topic of *panpsychism*, which is a curiosity from the history of philosophy that the (relatively) young Oxford philosopher Galen Strawson had recently raised to new prominence. The doctrine has a resonance for me in that it highlights just the novelty that one needs to be aware of in order to understand my new perspective on monotheistic religion.

Initially, I cultivated the thread in parallel with the long *On Faith* thread, and I repeated some long posts. In this transcript, I abridge repeated passages with page references to the previous chapter. But soon the new thread developed its own momentum and its own much edgier style, and it felt more natural to let it diverge from the *On Faith* thread, which I soon benignly neglected.

As you will see, panpsychism was a hard sell to the hard-boiled types who stalked the Sam Harris forum. But the effort paid off, because I got some sharp feedback that helped me hone my central formulations to new levels of lucidity (or perhaps absurdity – you judge). The intervention of Soja greatly enlivened the thread so far as human interest is concerned. I have sanitized the exchanges for family reading – some of the regulars became incensed enough at the distraction to post insulting profanities.

Panpsychology

The panpsychist game served its purpose in allowing me to refine my doctrine unencumbered by the crass obfuscations of common sense (from attacks originating within the Matrix, as it were). But by the spring of 2008 it had served its purpose and begun to seem too threadbare for further duty. So I ascended to the metalevel of panpsychology and finished the job in a methodologically more respectable garment.

The doctrine that finally emerged – that the varieties of religious experience are specifically human manifestations of the autophenomenology of genocentricity – is hardened enough to survive the sort of scrutiny that someone like Richard Dawkins might insist on. Dawkins says we are biological robots, lumbering survival machines for our genes. I say the fact that we are driven by our genes finds its most vivid expression in our subjective mental lives in spiritual or religious experience – in our awareness and celebration of a numinous attractor beyond our individual and everyday lives. The experience

or inner phenomenology (*autophenomenology*, to use Daniel Dennett's word) of mystic states is evidence for this view. To cut a long story short, I say the great monotheisms are fertility cults.

For me, all this makes a useful contribution to my ongoing thoughts on a core paradigm for psychology. Before Darwin, biology was an empirical science. It had lots of data but it was a theoretical mess. With the doctrine of evolution by natural selection, biology became a well founded science. Darwin gave it a theoretical foundation that in the course of the next century was merged with those of chemistry and physics.

Now, in our time, a comparably solid foundation is needed for psychology. We have a lot of good data from neuroscience and a lot of funny ideas from philosophy (qualia and the self) and religion (angels and the soul) but no well articulated core insight. It seems to me that my version of panpsychism (inspired by Kant, Hegel, and Wittgenstein) comes usefully close, and that my panpsychic "godology" – as a spin-off from that – illuminates the novelty of the view vividly. If I am not mistaken, any ambitious psychologist who can cope with mystic insight couched in alternately technical and baroque language should find a gem buried in this book.

Thanks

I thank Sam Harris for kicking me into action on this project. Whatever we may think of his contributions to the philosophy of religion, no-one can deny that his youthful passion has raised a useful storm.

I thank all the forum interlocutors whose contributions have been lightly fictionalized here for stimulating my (more or less) thoughtful responses. In all cases I have tried to be true to their apparent intentions as I edited their comments and questions.

I thank Bruno Barnhart, Andrew Harvey, and especially Soja John Thaikattil for helping me appreciate the contributions of the late Bede Griffiths to the themes discussed here.

I thank many authors listed among the references for their contributions to the care and maintenance of my inner life of thoughts and reflections. The sources listed are mostly referenced explicitly in the text and always directly relevant to some aspect of the big theme here.

I thank my employers at SAP for supporting me in sufficient comfort to get all this together – at the same time as authoring a technical SAP monograph that I hope pays my way with them.

God and Sam Harris

From 2006 to 2008, Sam Harris and his disciples and opponents together created an extremely lively online debate in the *On Faith* series of conversations on religion with Sally Quinn and Jon Meacham, hosted by *Washington Post* and *Newsweek*.

In this chapter, I present edited transcripts of most of my early contributions to the debate. These are scattered among thousands of posted responses to Sam's four earliest target articles, "Faith won't heal a divided world" (posted November 14, 2006), "God's enemies are more honest than his friends" (posted December 29), "Selfless consciousness without faith" (posted January 6) and "God's hostages" (posted January 22). By the end of January 2007, the four articles between them had already logged well over four thousand comments, far more than any other posted targets.

Obviously, Sam had hit some hot buttons. I like to think I'm a pretty cool guy, but even my hot buttons were well and truly pressed. Perhaps you, dear reader, will warm up too as you read on.

Faith Won't Heal

From the first target article by Sam Harris:

Most Christians believe that Jesus was the Son of God and, therefore, divine; Muslims, however, believe that Jesus was not divine and that anyone who thinks otherwise will suffer the torments of hell (Koran 5:71-75; 19:30-38). This difference of opinion offers about as much room for compromise as a coin toss. ...

It is not an accident that scientific discourse has produced an extraordinary convergence of opinion and remarkable results. What has interfaith dialogue produced? ... The differences between scientific and religious discourse should tell us something about where to place our hopes for an undivided world.

God's Enemies

From the second target article by Sam Harris:

For better or worse, I am partly responsible for the recent emergence of "atheism" as a topic of conversation. This is somewhat ironic, as I do not like the term and rarely use it. ...

Despite my misgivings about answering to the name "atheist", I consider the stigma now associated with the term to be entirely unwarranted. This stigma is, of course, the continuous product of the inane and unctuous declarations that still pass for argument among the faithful.

For thousands of years, religion has been a haven for dogmatism and false certainty, and it remains so. There is not a person on this earth who has sufficient reason to be certain that Jesus rose from the dead or that Muhammad spoke to the angel Gabriel in his cave. And yet, billions of people profess such certainty. This is embarrassing. It is also dangerous – and we should stop making apologies for it.

Stud: I have read all these comments, and I have to say that they have forced me to remove the religious veil that I normally wear and come face to face with the actual basis for my faith. I am in the position of advocating a faith that I cannot objectively prove, except to report to you my subjective experience. I can see why many of you believe that my faith is based upon wishful thinking, at best, or is psychotic, at worst.

A: Identification with your own personal Jesus may be seen as the achievement of a new state of mind analogous to the enlightened states targeted in the Eastern meditative traditions, with the difference that the born-again person remains a regular member of his or her community.

Is this enlightened state the goal (or end) of faith? Does personal fulfilment justify such a detour through religion? And is the Christian religion a good way to transport ordinary mortals from the banality of everyday life to the perfection of enlightenment?

Atheism can seem a dismal doctrine, a mere denial of the charms of traditional paths to subjective transcendence of our carnal limits. But it speaks to a real impatience with the tunnel vision that those traditional paths impose. Sam Harris sees the issue: As a society we can no longer safely tolerate the intolerance that is so often a corollary of the tunnel vision of organized religion, not to mention its crazy irrationalism in face of modern science. We are better off with a dismal truth than absurd hubris masquerading as revelation.

Yet there is a risk of throwing out the baby with the bathwater. Many times in history, revolutionaries have rebelled against religion only to founder on the rocks of an excessively harsh rationalism. Think of the French revolution, where heads were chopped off like cabbages in the name of reason, or the Russian revolution, where reactionaries of all kinds were rounded up and shot in the name of the proletariat. Militant atheists need to ensure that the struggle against tolerance of religion does not spill over into denial of the deeper needs of humans in an age characterized by the scientific revaluation of all values.

The deeper need that the personal Jesus meets is the need for one's own direct and intimate contact with eternal glory. Scientists like Richard Dawkins tell us that our bodies are no more than survival machines for our genes and that our brains are no more than battlegrounds for competing memes, and philosophers like Daniel Dennett tell us that free will is an illusion. The average person is not bright enough to see the merit of these

ideas and merely feels belittled. But if I can unite with Jesus, I become immortal and transcend all that scientific intellectualism.

The deepest problem with the Abrahamic tradition, as I see it, is that it politicizes God. The raw, undisputed immanence of being is conflated with the unfathomable transcendence of a supreme being. This supreme being is conceived by analogy with a person who rules over us like a hugely inflated father figure. The timeless presence of being is seen as a mere gateway to the father, who is enthroned above me and offers a path or a tunnel to salvation. When my salvation is made conditional upon my following the shining path, the political risk of punishment for straying is obvious.

The solution to reconciling both the problem of the Abrahamic God and the desire for a personal Jesus with atheist demands, such as those of Sam Harris, Daniel Dennett, and Richard Dawkins, is to see that the scientific vision of the atheists always includes transcendence, understood as lift-off from the here and now toward infinity. We are stuck in the immanence of normal life, where genes and neurons and so on seem to rule our days, but the sheer complexity of all the neural feedback loops, molecular interactions, electromagnetic fields and so on ensures that infinities pop up everywhere in the scientific story and open it up. In fact, the scientists need faith to believe that it will all make sense in the end. This gives room for each and every one of us to shape our selves to suit our psychological needs. If that need takes the form of ecstatic union with an imaginary Jesus, so be it. Such an inner path to peace has no implications for public policy except that people should be free to experience it. Atheism with this freedom is not dismal, and faith thus interiorized is not intolerable.

Stud: Conversion to Christ is a worldwide phenomenon. Obviously, there are also examples of conversion away from Christianity to these other world-views. The point is that you cannot so neatly and summarily dismiss faith as being culturally determined.

A: Any expression of faith occurs in a language community and against a set of shared beliefs and defaults about life and the universe. The faith itself may be a human universal, hard-wired by genes like the basic emotions, but if so, it may be so protean that without a culturally determined expression it would remain unrecognizable. I am sure that this kind of protean faith lies behind the belief in science of people like Richard Feynman or Carl Sagan, who were smart enough not only to see the epistemological problems at the leading edge of science but also to see that only clear thinking based on honest appraisal of natural phenomena can help us in the long term. In other words, science done right is a faith too, but one shorn of embarrassing entanglement with old issues about whether Jesus walked on water or Mohammed took dictation from an angel.

Achievement of a state of enlightenment seems to be a widespread phenomenon, and some cultural memes cause this to be described as conversion to Christ. But why should this kind of enlightenment, which may

or may not have anything in common with Buddhist enlightenment, be thought of as related to the Biblical Jesus? Our contact with the Biblical Jesus is more remote and indirect than that with most other historical or fictional personages, yet people are convinced they have made contact. This is surely psychologically remarkable.

The possibility that Jesus was fictional raises the wider question of the historicity of the New Testament. If even the existence of Jesus is in doubt, the resurrection and so on are not even worth talking about. But such issues are irrelevant to any faith that depends merely on resonance with an image of Jesus, which is a psychological phenomenon familiar to students of consciousness.

Carl: Would monogamy be the norm if not for religion?

A: Probably, yes. Biologists have studied several pairs of species that are very similar except that one is monogamous and the other is polygamous, and it seems to reflect the working of a simple hormonal mechanism controlled by a small number of genes. So we probably have that mechanism to thank for the fact that we're not (quite) like bonobos. The fact that human males are on average slightly bigger than females reflects a tendency for polygamy or harems, like gorillas, and the size of human testicles correlates with a level of promiscuity that puts us halfway between gorillas and bonobos. As you see, none of this has any obvious relation to religion.

The monogamy mechanism works mostly via oxytocin, which is released in both sexes during copulation and results in pair bonding, so the relative promiscuity of men and women probably has more to do with their relative investments in offspring. Social and religious arrangements must also play a role, but in various ways. For example, Mormons are genetically indistinguishable from average Protestants, but they tend to have bigger families for explicitly doctrinal reasons. Agreed, Mormon doctrine evolved to adapt the flock to populate a practically virgin continent (ignoring Native Americans for the usual deplorable reasons), so we cannot claim that the doctrine floats free of all natural constraint, but it is clear that doctrine is a separate variable here. As another example, Muslims and Hindus in India are genetically the same but treat women very differently.

The modern liberation of women has two aspects: the contraceptive separation of sex from reproduction and the increasing economic importance of intelligence relative to muscle power. Modern sexual politics are only possible where sexual freedom does not have reproductive consequences. And intelligence is about equally distributed between the sexes, unlike muscle power. The downside here is that Western fertility has slumped as a result of women's liberation. Understandably, free women don't want to spend all their time having babies, and we have in effect chosen quality over quantity: we prefer fewer kids, with more investment in education and so on per kid, than more kids and lower standards.

The disaster waiting to happen here is that the Islamic world is still in fertile mode – pop out more kids and economize on their education. So we have a demographic nightmare looming, which the relative fertility of Jews and Arabs in Israel illustrates as urgently as any other example. This, I believe, is the big horror behind the fear of terrorism that Sam Harris documents. A few hotheads we can maybe live with, but tens of millions of angry youths whose only education is the Koran may make some of us want to reach for the nukes.

Emma: Without a soul and a connection to god, what makes humans better than dolphins, which live in complete harmony with the planet?

A: Humans are learning to live in harmony with the planet. As a social species with big brains, we are better adapted in a quite natural sense to “run” the planetary ecosystem than any other species. And our technology is part of our “extended phenotype” (the title of Richard Dawkins’ first – and for me still best – book). We deploy machines to improve our lives in the same way birds deploy twigs to make nests. We’re not better in any metaphysical sense than dolphins, just smarter at building machines.

Humans are adapted to run the world in the evolutionary sense (which has often been said to be tautological) that the fittest survive. Who are the fittest? Those best adapted to their environment. What counts as best adapted? That which tends to promote survival in those conditions. Natural selection selects those who reproduce most successfully. Hence our angst about the Koran-waving millions!

Emma: Do atheists believe in a soul?

A: Souls are often thought to be the same thing as selves, and to a first approximation that may be good enough.

A self, as Dan Dennett sees it, is a construction of the brain. We make selves for ourselves (so to speak) to put our thoughts into better order. We each build an autobiography to sort out our memories, as an ongoing drama starring our own self. Dennett maintains that we create ourselves as something like fictional characters within our own stories, and we do this for deeply rooted biological reasons. In our inner pictures of the world, our own self is the locus of agency and control, like the cursor on a computer screen.

Another part of Dennett’s picture is that when we look inside the biological robot we see in the mirror, we find not a little homunculus at the control panel in the brain but a pandemonium, with a lot of little demons slugging it out for control. These little demons literally fight for resources to grow their synapses and so on. Logically, the demons are cognitive robots. The robots are made of more robots, and so on. They just get simpler the deeper you go, until finally you reach the electrochemistry of neurons.

Dennett compares the self to a virtual machine, which is to say an emulation, like a virtual Windows machine running on a Mac. The parallelism of the

brain supports a serial virtual machine, which he calls a Joycean virtual machine because it generates a stream of consciousness using words, like the fictional character Nora Bloom in James Joyce's novel *Ulysses* (see Dennett's 1991 book *Consciousness Explained*).

As to the eternity of souls, here I give my own view. The self is an information structure, like a program, a huge collection of bits. If someone were to run this program on new hardware in the deep future, that self would emerge anew into physical life. If it were me, my guess is that I would remember my previous life as if it were yesterday, and feel rather puzzled about what happened in the meantime.

Scientific Method

Jack: Sam, nothing that I have read in your writings so far would come even close to addressing the issues Gordon Clark had raised in a number of his books. Here are a few of the arguments:

- 1) Observation is unreliable. Scientists always repeat experiments, and the results almost always differ in some way. But if observation is unreliable, why should one ever believe that he has discovered truth through observation?
- 2) All scientific experiments commit the fallacy of asserting the consequent. In syllogistic form this is expressed as: If P , then Q ; Q ; therefore, P . That is to say, all scientific laws are based on fallacious arguments.
- 3) Science commits the fallacy of induction. Induction is the attempt to derive a general law from particular instances. Science is necessarily inductive. Universal propositions can never be validly obtained by observation. Hence, science can never give us true statements.
- 4) Equations are always selected, they are never discovered. In the laboratory, the scientist conducts a number of tests and notes the slightly differing results. He will likely plot the data points on a graph and draw a curve through the points. An infinite number of curves is possible, but the scientist draws only one. The probability of choosing the correct curve out of an infinite number of possibilities is one over infinity, or zero.
- 5) All scientific laws describe ideal situations. At best, scientific law is a construction rather than a discovery, and the construction depends on factors never seen under a microscope, never weighed in a balance, never handled or manipulated.

Science has its place in a Christian philosophy. But science is never to be seen as a means of learning truth. Truth is found in the Scriptures alone.

A: Gordon Clark's logical methodology fails to apply to scientific reasoning for the following reasons.

- 1) Observations are unreliable but they are the best way we have to get started in science. If we repeat observations under systematically varying circumstances, we can build up a foundation on which to build a theoretical edifice. Without observations, there is no science, just empty dogma.
- 2) Propositional logic is not a major tool in experimental science, but a propositional formalization of how scientists sometimes reason is better characterized not as “if P then Q ; Q ; therefore P ” but either as “ P if and only if Q , and Q , therefore P ” or “if P then Q , and not Q , therefore not P .” The problem of induction highlights a weakness not in science but in the logicist methodology of science, which was rectified in the improved philosophy of science developed by Karl Popper.
- 3) As Popper said, scientists proceed not by inductive inference but by proposing and testing hypotheses. This is a trial and error process that generates better and better theories for describing reality. It is an evolutionary process in which errors are selected out and improved variant theories tested in experimental confrontations. When all goes well, dominant paradigms emerge to guide and shape future work.
- 4) Equations are distilled hypotheses based on large volumes of experimental results. Only a beginner would regard all the possible curves through a set of points on a graph as equally valid. Some mathematical relationships are fruitful, others are not, and an expert sees this and selects the right curve, the one that fits with other related results and the surrounding theory and so on.
- 5) All scientific laws are derived from models that simplify reality. They represent the features that interest us and abstract away irrelevant detail, just as your visual cortex abstracts away most of the detail your retinas send back along the optic nerves. Scientists first build a basic model for the salient facts and then build more detailed models for more exact work.

The validity of science does not depend on inductive reasoning, and scepticism, far from shaking the foundations, strengthens science by exposing the weaker parts for ongoing revision. Science gets stronger as it reveals successive layers of truth – from atoms to nuclei to quarks, from heliocentrism to galaxies to inflationary cosmology, from cells to DNA to genomes, and so on.

Organized science is the most powerful and effective machine we have for augmenting our human faculties in order to achieve an understanding of nature. Nothing else comes close. The equations of Maxwell, Einstein, Schrödinger and Dirac, the laws of heredity and DNA chemistry, all the proofs of mathematics and so on – these are the new scriptures. These are the deeper truths that make the world make sense. Individually, they are fallible, but collectively they have a weight exceeding that of all our previous

scriptures put together. The Bible and the Koran are now fossils for a museum.

Induction

Inductive reasoning in mathematics:

X is true of 0.
 For all n , if X is true of n then X is true of $n + 1$.
 Therefore, X is true for all n .

Analogously in empirical science:

X is true at time t_0 .
 For all times, if X is true at time t then X is true at time $t + 1$.
 Therefore, X is true for all times.

Alternatively, write “case” and “cases” for “time” and “times”.

In mathematics, such induction is valid. In empirical science, it is valid *only* to the extent that the step from t to $t + 1$ is valid. Generally this is a matter of probability or hypothesis. So we make a model *within* which the step from t to $t + 1$ is valid, and see whether the model *as a whole* survives sufficiently rigorous testing.

Science works. Any logician who “proves” otherwise has shot himself in the foot.

As anecdotal evidence for the shift of power here, the acronym QED used to be taken to say *quod erat demonstrandum* and stand at the end of logical or mathematical proofs. Nowadays it is more often taken to refer to quantum electrodynamics, the “strange theory of light and matter” (as Richard Feynman put it in his 1985 book), which physicists have refined so far that theory and experiment match down to a few parts per trillion. But nobody really understands it (said Feynman, whose Nobel Prize was for QED work), so the logicians don’t have the last word here.

Here is another induction:

If X has 0 hairs on his head then X is bald.
 For all n , if X has n hairs on his head and X is bald,
 then if X has $n + 1$ hairs on his head then X is bald.
 Therefore, for all n , if X has n hairs on his head then X is bald.

The ancient Greeks called this a *sorites* paradox. It shows that induced baldness is a deep philosophical problem. But do we have problems with baldness? Not me!

Atheism and Belief

Tom: I wouldn’t describe the French and Russian revolutions as harsh rationalism rebelling against religion. If anything, I would describe them as the replacement of one type of state religion with another.

A: Sadly, the French revolution led first to chaos and then to Napoleon. But the American revolution was a similar attempt to replace a manifestly irrational arrangement (rule by the British crown) with something more reasonable (the constitutional republic). As we all know, it was by accommodating religion (“In God we trust”) that the American revolution achieved a smooth transition. Even more sadly (to go by the body count), the Russian revolution was explicitly atheist. It was state-of-the-art atheism, as of 1917. And intellectuals like George Bernard Shaw even admired it (before the gulag stories got out).

Tom: I don’t see atheism as inherently denying the spiritual, although Dawkins specifically suggests so. The problem, as Dawkins said, is that dogmas don’t limit themselves to the purpose of life, but instead make claims about the world.

A: What is conventionally known as the central dogma of molecular biology is that DNA contains the code for making proteins, which make up organisms. The “purpose” of DNA life is to replicate its genes – Dawkins. And the central dogma makes claims about the world, namely that if we study DNA transcription and proteosynthesis, it will all work out nicely. Okay, this is the one and only good piece of dogma in the world of Dawkins, but the problem of principle remains. Modern big science is analogous to a religion, indeed a bigger and more powerful one than has ever stalked the Earth before. If big science repudiates spiritualism, it will generate opposition. So I hope that, perhaps via the science of consciousness, room will be made for the sort of harmless spiritualism of people who seek enlightenment – so long as their personal Jesus does not ask them to blow up medical facilities and the like, of course.

Carl: Marxist communism is much closer to the dogma of Christ’s teachings than to anything an atheist mind would dream up. Communism doesn’t fail because it is godless or atheist. It fails because people are biologically greedy and the only way to get them to share everything is to point a gun at them.

A: Agreed, but it was an attempt at atheism (“religion is the opiate of the people” and so on) and therefore deserves close study as an example of how even the best intentions can go wrong. Marx based his efforts on Hegelian philosophy. Hegel created a supposedly definitive dialectical critique of all religion, and set religion beside art but beneath philosophy in the culminating triad of his “absolute” synthesis of everything.

Carl: Science is one small aspect of atheism. Atheism is not belief in science over religion. It is simply not to believe in religion.

A: Again true, but atheism without science is a leap into the abyss. To deny a worldview you need a better worldview. Scientists do their level best to stop scientific doctrines from becoming dogma (except the molecular biologists, who were probably just joking), so it is misleading to see science as much

like religion. Science is descriptive but should not be prescriptive, whereas religion is prescriptive and should not be descriptive.

Stud: I see Christian faith as an epistemological issue. A revelation comes to the believer, and it creates the phenomenon of faith. This appears irrational to the non-believer, because he does not have any epistemological frame of reference for such things.

A: Agreed in part. The problem is that revelation is not an epistemologically sufficient means for acquiring knowledge. At best, revelation provides raw material for a reasoning process that may result in knowledge. Sensory experience is revelation at its most trivial. The senses reveal phenomena that I may choose to accept at face value. More usually, they reveal raw data that require some serious cortical processing before any substantial or useful knowledge emerges. In the meantime, between the revelation of the senses and knowledge, faith can help. Faith is a strategy for holding out until mere belief has been refined into knowledge. Accepting inner revelation as knowledge can work too, as when a thinker finally “gets it” and sees the answer to a difficult problem. Here the normal prerequisite is a lot of preparatory thinking in order to know that the answer is indeed correct. Sadly, too many cases of Christian revelation short-circuit this process.

Stud: It is not arrogant of the believer to say that he “knows” something in this sense that the non-believer does not know, just as it is not arrogant for a biologist to say he knows more about biology than an accountant.

A: Agreed too, in part. But apparent knowledge can be illusory, if later testing reveals deficiencies. Mystical knowledge is often illusory, precisely because testing it is so difficult. Your own testing of your faith in a “lion’s den” of confessed atheists is impressive, but this only demonstrates your will-power, not the quality of your claimed knowledge. Faith is merely a way to maintain belief until it can be refined into knowledge. If the refining process leaves nothing of value, too bad. Bad things can happen to good people. As it happens, a refining process that has lasted for centuries is leaving precious little from the core assertions of Christianity.

Stud: It is impossible to convince someone who has not experienced faith as a response to revelation, that it is valid.

A: This may be true. Faith is never valid, though it may be a reasonable strategy for a while. Since a statement is valid when it is true under all admissible interpretations in some given scheme, it had better be impossible to maintain that mere faith is valid!

For me, the example of string theorists in physics is helpful. Over two decades ago, some string theorists had a revelation of the possible power of strings. Since then, hundreds of brilliant theorists have kept the faith in the hope that string theory will become knowledge and finally give a cash value to the revelation. No luck yet. Soon the believers will start to drift away (said Smolin in 2006).

Science and Logic

Lot: God might break the laws of buoyancy to make an iron block float if he wanted to.

A: Scientific laws describe patterns that only make sense when they are universal, without exception. To use a poetic metaphor, they are God's laws and God cannot break his own laws because he is realized in the inner harmony of the universe as revealed through the patterns and regularities of nature. This is a poetic view with no factual value, as its "prophets" Einstein and Spinoza would be among the first to insist, but as a metaphor it captures the implicit faith that makes organized science possible. Without universality, science as we know it would make no sense. If we find an exception, we look for reasons and find an explanation.

A radical atheist may wish to deny this faith in universality. Okay, we can discuss this too, but we need at least the rules of logic and philosophy to do so. I predict that if we follow those rules honestly and consistently, they will boot us back up to universalist science.

Jack: What is logic? What is truth? What are your epistemological justifications for such concepts?

A: Logic is the science of valid inference. An inference is valid if, under all admissible interpretations under which the premises are true, the conclusion is true too. An assertion "*S*" is true if and only if *S*. To cite a phrase from Willard Van Orman Quine, truth is a device of disquotation, and all instances of the previous schematic sentence are true which are obtained from it by substituting a well formed statement for the schematic variable *S*. This logical definition of truth is due to Alfred Tarski.

Jack: Please demonstrate to me in a syllogism how you deduce that if I were to throw a newspaper in fire right now, it will burn.

A: A syllogism is an ancient construct. Today we talk of IF loops in program code. If you are asking me to write a single IF loop that will print correct predictions in a range of circumstances involving combustion, I say get real! Either you write more code than you ever saw before to cover all the cases or you make do with a single loop and your predictor crashes on about the second newspaper.

Lizz: I am inclined to think that religion is a flawed by-product of some sort of social function – perhaps the price we pay for the ability to communicate information efficiently via language, emotions, or facial expression.

A: This reminds me of the view of Julian Jaynes that until about two to three thousand years ago, people were by modern standards schizoid, with their right cerebral hemispheres "the home of the gods" (infested by god memes) and only the left hemisphere available for practical reasoning. In this version of history, modern integrated personal consciousness only emerged slowly,

with the then-radical figures of Socrates, Buddha, Lao Ze and Jesus, and is still doing battle with the schizoids. Modern neuroscience has left the details of Jaynes' psychology behind, but his historical argument is still fascinating.

Solipsism

Here I offer a sketch for a logical reconstruction of the mindset attributed to Jesus in the New Testament. I developed the idea many years ago to reconstruct what the young Ludwig Wittgenstein said in his *Tractatus Logico-Philosophicus* (first published in 1922). From it I now deduce that Jesus may have been suffering from solipsism.

Definition 1. Reflection principle. At each and every moment in time, I am logically equal and opposite to a momentary view alpha of my world, equal to the world we live in.

Definition 2. Momentary worldview. For any index ordinal i , let the set α_i be a momentary determination of the world we live in, that is, a state of the world indexed by a time parameter, and let the index run over successive moments in my world.

Definition 3. The primordial world. Let the first (null or trivial) momentary view alpha be the set indexed as α_0 , where the ordinal number 0 indexes the first moment of recorded time.

Definition 4. The ultimate world. If ordinal theta is the first inaccessible ordinal (that is, the first ordinal not definable from a countable ordinal by means of a recursive function), then let the set α_θ also be called omega. The view omega is future to all accessible views.

Lemma 1. Any logically articulable worldview is logically isomorphic to (or morphs) a set α_i , for some ordinal index i .

Lemma 2. If a set α_i morphs a given worldview, the power set of α_i (that is, the set of all its subsets) is big enough to morph its successor view $\alpha_{(i+1)}$.

Theorem (Ross–Hofstadter). I am a strange loop.

Proof. Assume all the axioms and rules of ZF (Zermelo–Fraenkel) set theory. Initially, I am isomorphic to α_0 , or zero, the null set. For any successor ordinal n , if the set α_n morphs my current worldview, the power set $\alpha_{(n+1)}$ of α_n morphs my next worldview. For any limit ordinal lambda, if for all n less than lambda, sets α_n morph my previous worldviews, the union α_λ of all α_n morphs my previous or current worldview. By transfinite recursion, at the limit of accessible time I become equal and opposite to α_θ , or omega. No set has a lower index than zero and no set has a higher index than theta. In ZF the ordinal line is only defined between zero and theta. The ordinal line can be looped by setting zero and theta back to back. The loop is a strange loop in the sense of Hofstadter. In the eternal limit, I am morphed in the loop.

Corollary 1. Omega is the standard or natural model of ZF set theory.

Corollary 2. I am the alpha and omega.

QED (*quod erat demonstrandum*)

Contradiction

Jack: The law of contradiction has to be one of the most fundamental, non-negotiable laws necessary for you and I to even have a conversation.

A: One formulation of the law of contradiction is that a speech act is vitiated in the case that one and the same statement is both asserted and denied without further explanation or justification.

Examples of contradiction

- 1) “It will burn!” versus “No, it won’t!”
- 2) Galen Strawson, metaphysical thesis 36: “Reality is substantially single. All reality is experiential and all reality is non-experiential. Experiential and non-experiential being exist in such a way that neither can be said to be based in or realized by or in any way asymmetrically dependent on the other (etc.) (Equal-Status Fundamental-Duality monism).” (2006, p. 223)
- 3) A three-step argument:
 - a) Statement “It is round” contradicts “It is square.”
 - b) Statement “It looks round from this angle” appears to contradict “It looks square from this [other] angle.”
 - c) Statement “It is a cylinder whose height is equal to its diameter” resolves the contradiction.

Discussion of examples

- 1) Hopeless.
- 2) Potentially fruitful – all hangs on the “etc.”
- 3) No problem at all. This is how to do it.

Jack: Atheists and agnostics complain about Christians that they are stupid, irrational, and lack humility.

A: Many people in good conscience have thought carefully through the issues that concern us all very deeply. Some of those people are conversing here and are attempting to deal with the issues with due respect and moderation.

Believe me, I have meditated at length on the Christian view of God and how it has developed over the centuries. I find much in the tradition to respect. It is indeed the fertile ground in which the new faith of empirical science took root. Many believers worked as experimental scientists and saw no contradic-

tion with their faith. Even Charles Darwin began life as a trainee priest and troubled himself for many years over the religious impact of his work.

Jack: Some people appear to believe that my “beliefs” are irrational. They are the same people who say that the law of contradiction is not an absolute certainty. Yet I am the one that needs to “rationally” analyze my beliefs?

A: Let me tell you a true story.

The young student Ludwig Wittgenstein was very brilliant. He discovered the logical work of Gottlob Frege and was totally awed by it. Frege had just made the greatest advance in logic since Aristotle and had used it to write a monumental book on the logical foundations of mathematics. But Frege did not want Wittgenstein (who was a Jew) as a student and advised him instead to go work under Bertrand Russell in England.

So Wittgenstein went and studied under Russell. Russell had found a fundamental and irreparable contradiction in Frege’s big book and driven Frege to consternation, so now Russell and his collaborator Whitehead were completing a massive three-volume work called *Principia Mathematica* (from 1910 to 1913) that attempted to do right what Frege had done wrong. Just when they completed it, the First World War broke out and the young Wittgenstein went off to fight for the Austrians. In the trenches, he thought a lot and wrote (in pencil) a slim book.

Back in England after the war, Wittgenstein gave his slim book to Russell to read. Russell was blown away. This was a work of total genius! It was a polished reconstruction in pure logic of the entire universe! It had such crystalline perfection it allowed Wittgenstein to be a solipsist! (A solipsist is someone who thinks he is the only person in the universe and everyone else is a figment of his imagination.)

A whole movement in philosophy grew up around the work. But Wittgenstein couldn’t stand it. He retreated into a hut in the mountains and had an “epistemological break”. When he finally returned, he repudiated his earlier philosophy completely and said it was a load of error. His new philosophy was that logic was just a language game. Other language games could have different rules and be just as valid in their own, different ways. The main thing was that people agreed on how they used and understood their words. Those shiny hard logical rules were just fetishes for people who couldn’t stand to play the usual language games.

As other philosophers gradually realized the older and wiser Wittgenstein was right, they built up a movement around his new work, which was not a book but just scraps of paper with remarks on them, and celebrated it to the heavens. That led us all to modern philosophy, where logic is just a formal machine, in effect the stuff of software, with no particular metaphysical value. The old idea (as one distinguished mathematician put it) that God was “the supreme fascist” in the sky who laid down the laws of logic was gone, dead, obsolete.

Whew! Free, free at last!

Creativity with contradiction (Hegel in a nutshell)

- 1.1) It is, it is not, it becomes.
- 1.2) It becomes objects, it becomes properties, objects have properties.
- 1.3) Objects are essence, properties are essence, essence is appearance.
- 2.1) Reality is essence and appearance, both are essential, we see both.
- 2.2) Essence is manifest, appearance is hidden, reality is deceptive.
- 2.3) We sort out reality, we don't sort it out, we are people.
- 3.1) We use our senses, our senses trick us, art shows us how.
- 3.2) We lack knowledge, we have faith, religion offers hope.
- 3.3) Art is surface, religion is beyond, all is one in the Absolute.

Hegel used an argument like this to “prove” that the Prussian state, united under God, was perfect. Karl Marx took this dialectical idealism and turned it upside-down it to create dialectical materialism. Vladimir Lenin concluded that “dialectics is the doctrine of the unity of opposites.” The resulting clash (Prussian militarism versus Soviet communism) dominated the twentieth century.

What can we conclude? Philosophical absolutism, of left or right, is dangerous. What should we do? Relax and let logic become a technology.

Bits ($1 + 1 = ?$)

For a logician, the innocent statement “ $1 + 1 = 2$ ” is not necessarily true. In bit logic, otherwise known as Boolean algebra, $1 + 1 = 0$ as long as you ignore the carry bit. If you remember the carry bit, $1 + 1 = 10$. In arithmetic modulo 2, $1 + 1$ is zero, and in binary arithmetic, two is 10.

In program code you can write contradictions. There is no law that says you cannot. But if you do, your computer will crash. Avoiding contradiction is a practical maxim for success in life. Things go better if you go with the flow of *modus ponens*: if P then Q ; P ; so Q . Wittgenstein (re)invented truth tables to show why this was valid.

God (who, what, how to explain)

Sam Harris is now a researcher in neuroscience and consciousness. So he will understand the following idea, whose exact source I have forgotten but for which my prayer to Google was in vain.

One way to describe the sense of awe in face of the Absolute is to say that we find a fixed point. We touch base with eternity and feel our unity with the universe. All the rest is flux and change, including our little personal lives with all their jealousies and frustrations. This Absolute, experienced in its

true magnitude, is peaceful and self-sufficient. It bears comparison with the inner peace found by experienced meditators in the Eastern traditions such as Buddhism. There is no yearning for a beyond because there is no beyond – I melt into eternity.

The psychology behind this state is that each of us has two heads, metaphorically speaking. We have a big head and a little head. The little head is our everyday head, the one that drives to work and sorts out the kids. The big head is the “Sunday head” that tries to achieve union with the Absolute. How can I know God? By becoming God, or rather by becoming my own representation of God, my big head. Done right, this gives me my fixed point.

Naturally, my big head fails to achieve more than fleeting union with God. I would have to overcome all the contradictions in Hegel’s philosophy to become God, and life is too short. But I can have faith. The monotheistic traditions help me hold on to the idea that one day my little head will catch up with my big head and I will go down in eternity as a fulfilled soul, a strange loop in the sense of Douglas Hofstadter, with no time left un-lived.

Why do we have two heads? This is where the neuroscience comes in. What we really have is two cerebral hemispheres, left and right. As one acts, the other observes. We have mirror neurons to reflect both our own thoughts and the observed actions of others. We understand things by holding up the mirror and analyzing their image. This is how we manage socially. We mirror each other, as best we can.

Our big head is a social adaptation. It is our altruistic head. Our little head is our selfish head. We need a big head to get along with each other. Now, monotheistic religion has taken this big head and inflated it enormously. Each and every believer is supposed to get his or her head around the entire universe. Because we cannot do this, we need faith. The church sells us faith to stop our heads exploding. The church takes over, and then attacks non-believers as pusillanimous, which in effect means insufficiently big-headed.

Abraham had a vision of God that brought the world together. Today we agree that we live in one world but we have some serious political problems to clear up. I predict that we can solve them if we remember that a network of medium-sized heads can understand each other well enough to be, in effect, one big head.

The acid guru Timothy Leary (fogged up by LSD but still lucid) saw the Web as a worldwide brain in which we, the online masses, were the neurons. Just as the neurons in our brain communicate imperfectly with each other and sometimes foul up, we in the Web still have some collective thinking to do.

The Sam Harris online debate is a perfect example of what we need to keep doing. When we can claim together to have become not just a lot of talking heads but a brain as big as a planet, we will have become Gaia, we will have fulfilled the vision of Saint Augustine and become the Body of Christ.

The philosophers have accumulated a case against “God” that even rock-solid stick-in-the-mud absolutists cannot refute, because even the so-called law of contradiction (not both P and not P) is denied them. You cannot make any statement at all about “God” or anything else without permission from the philosophers, who allow you to say “om” and no more until you put some kind of sense into the rules of your language game.

You have to define “God” in such a way as to distinguish the resulting entity from the blank state of being that kicks off Hegel’s logic and serves as the basis for Heidegger’s philosophy. Being is not a god or anything like one, but it is all you get for free. All the rest, as Wittgenstein pointed out, depends on a lot of anthropological facts about you and your language community, and there the uncertainty of everything empirical becomes an issue.

Carl: I have been doing an experiment the last couple of days. I have asked 20 people the question, “Do you believe in God?” The results: two people said yes, three people said no, the other 15 said, “It depends on what you mean by ‘god’.”

This debate will always be muddled so long as the definition of an atheist is, “One who believes that god does not exist.” It is a one-sentence definition in which the two most important words are clearly ambiguous. This definition needs revision.

A: For 2500 years, the philosophers have accumulated a case against “God” that even rock-solid stick-in-the-mud absolutists cannot refute, because even the so-called law of contradiction (not both P and not P) is denied them. You cannot make any statement at all about “God” or anything else without permission from the philosophers, who allow you to say “om” and no more until you put some kind of sense in the rules of your language game.

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Jack: God is logic (John 1:1).

A: But which logic do you mean? For example, the new discipline of quantum logic has recently emerged based on qubits, which are realized as quantum dots that are both 0 and 1 at the same time. These quantum dots are based on the amazing facts about the empirical world revealed by quantum mechanics. David Deutsch, the first prophet of quantum logic, says the only way to make sense of qubits is to say we live in not just one universe but a multiverse. The different universes within the multiverse interact to generate the quantum effects that make qubits possible. The interaction was nicely visualized in the Spielberg science-fiction movies *Back to the Future*.

To set up a logic, we first have to define an alphabet and a set of rules for making well-formed expressions, then we need to assign a semantics. We need to define a model containing objects and then a mapping between the objects and the names in the language. To do so, we use the formal truth definition I cited earlier. All this presupposes a lot of facts about languages and so on, empirical facts that have a haze of uncertainty.

Think of computers again. Before your box suffers any risk at all from contradictions, you have to define an operating system, specify a programming language, specify assignments for your variables, make sure the box is turned on and booted up, and so on. All this goes beyond logic, and is subject to empirical constraints and probabilities.

Returning to quantum logic, it looks as if reality buds a new universe whenever a contradiction threatens. That is, as soon as a thing can happen two ways, say if the dot can be 0 or 1, the universe sprouts two branches, one for 0 and one for 1. Because we are big creatures on the quantum scale, we have to go one way or the other. Only the tiniest things can be in two or more universes at once. You can see this as God leading us along one path, but the science suggests that all the other paths are there too. All this makes it hard for us to assign a consistent semantics to the word “God”.

On Contradiction

The philosopher Hegel wrote thousands of pages to build up a position called dialectical idealism. From these pages, a (hazy) picture emerges of reality developing and growing through a process of inner necessity, powered by the emergence and resolution of contradictions. When I tried over a period of years to make sense of these writings, I came up with a text that boiled down to the triads (1.1)–(3.3) cited above. If my summary makes no sense, my apologies, but I believe it makes as much sense as the original (see Charles Taylor’s book *Hegel* for a sympathetic yet baffled review).

Hegel’s core idea was that all that happens must happen as it does. Reality unfolds as a tree grows, out of an inner drive that powers it through a succession of momentary forms. Starting from sheer being, which is indistinguishable from mere nothing, we discern becoming, and so on until we arrive at the absolute truth, which is a version of reality in which the Prussian constitutional monarchy and its trappings represent the highest and most evolved state. For Hegel, the truth is the whole.

Like many other Germans, Karl Marx started out as a young Hegelian, but then rebelled and inverted the whole lot to create dialectical materialism. Then the young revolutionary Lenin studied both Hegel and Marx closely (1914–1916) and proceeded to put the revolutionary ideas into practice in Russia. When Lenin died, Stalin took over in Russia. A few years later, the young Chinese communist Mao Zedong studied under Stalin and took the lessons back to China.

Most of the writings in this tradition are logically worthless. In my own sampling, I found a translation of an essay by Mao Zedong (1937) to contain the clearest expression of the core doctrine:

The law of contradiction in things, that is, the law of the unity of opposites, is the fundamental law of nature and of society and therefore also the fundamental law of thought. It stands opposed to the metaphysical world outlook. ... According to dialectical materialism, contradiction is present in all processes of objectively existing things and of subjective thought and permeates all these processes from beginning to end ... In given conditions, opposites possess identity, and consequently can coexist in a single entity and can transform themselves into each other ... But the struggle of opposites is ceaseless ... If, through study, we achieve a real understanding of the essentials explained above, we shall be able to demolish dogmatist ideas which are contrary to the basic principles of Marxism–Leninism.

All this goes to show not only that one can write a lot of nonsense about contradiction but also that the classical law of contradiction is really just a useful tool, and using it is a choice we make. One can choose not to use it, and write Maoist stuff and build a state on it. That state can survive and prosper, and buy up U.S. Treasury bonds to bankroll the present U.S. administration. In Maoist terms, this was an ongoing world-historical contradiction in 2007.

Let me return to “God is logic” (John 1:1).

If the word “God” as used in the Christian sense is to have any denotation at all, it must denote the highest and most universal concept in our whole ontology. That concept must also conform to the rules of logic.

Any ontology can be mapped into the universe of sets, because sets are the most abstract and logically pure entities there are. The efforts of Frege and Russell were precisely to map all the entities of mathematics into sets. For any other domain of discourse, the task is logically easier (albeit empirically much more difficult, given the fuzzy semantics of empirical domains).

Frege created a theory with a universal set, which he defined as the set that contains all other entities as members. (The membership relation is not at issue here, since it is abstract enough to have almost any empirical instantiation, just like the predication relation in a subject–predicate sentence, which asserts that the object denoted by the subject of the sentence falls under the concept denoted by the predicate.) Frege’s universal set contained any set defined by a clear and unambiguous membership criterion.

Russell then discovered the following contradiction. In Frege’s universe, there is a set S of all sets that are not members of themselves. Russell asked, is the set S a member of itself or not? If it is a member of itself, it does not satisfy the qualifying condition for the set, so it is not. If it is not a member of itself, it does satisfy the qualifying condition, so it is. We have obtained a

contradiction. From this *reductio ad absurdum*, we conclude there is no such set S .

So if the universal set exists at all, it must be a member of itself. But the membership relation is normally understood as an asymmetric relation. If A is a member of B , then B is not at the same time and in the same sense a member of A . For consider what this would mean. The members of a set A are “inside” A . If A is a member of B , B is “outside” A . So if set A were a member of A , it would be both inside and outside itself. This paradox is normally regarded as showing that a set cannot be a member of itself.

The natural conclusion is that there is no universal set. Since all concepts can be modeled as sets, there is no concept that if modeled as a set could only be modeled as the universal set. The Christian God seems to be a logically inadmissible concept.

However, there is a way out. I discovered that in any set theory in which sets are not members of themselves and all sets are ultimately based on the empty set, there is nothing to stop you regarding the universal set as the “inside” of the null set and the null set as the “outside” of the universal set (I was not thanked for this irritating discovery). This paradoxical looping of the universe is invisible from within the universe, and forms a strange loop in the sense of Douglas Hofstadter.

Applied to God, the strange loop suggests that God looks like everything from within but like nothing at all from outside. The other conclusion is that our feeble logic is simply not up to the task of representing God. In this case, there is nothing we can say with logical certainty about God and we may as well save our breath. This is what Buddhists have said all along.

The King James translation of John says “In the beginning was the Word, and the word was with God and the word was God.” If we translate this as, “In the beginning was the null set, and the null set was in the universe and the null set was the universe,” you may see how Hegel’s being–nothing–becoming dialectic gets started. The universe grows by budding out of its own momentary contradictions!

This is why we prefer to say logic is just another tool.

The “God is logic” view is so Old Testament. The New Testament view is that God is love. Love melts down those hard edges, lets us live in the loop. The Word is love.

Jack: Show me the logical fallacy in starting with the axiom that the Bible is the word of God and then proceeding from there to deduce and build a worldview in which to make sense of life. Reveal the logical fallacy to me.

A: Lo and behold.

Preliminaries. An axiom is an assertion from which truths may be derived by valid reasoning. Reasoning is valid when it never leads from true premises to

false conclusions. From a false assertion any statement at all may be derived, including a contradiction. A contradiction is a statement of the form “ P and not P ,” for some statement P . By substitution of values for P , a contradiction is true if and only if it is false. A statement is necessarily false when it is false under all admissible interpretations. By *reductio ad absurdum*, an axiom from which a contradiction may be derived by valid reasoning is necessarily false. If an axiom is necessarily false, it is fallacious to infer the truth of any statement derived from it.

Definitions. Let axiom A be the statement “The Bible is the word of God.” Let object X be the Bible, and let object Y be the word of God. By these definitions, A says that X is Y .

Fact 1. The King James Bible contains 783,137 words.

Fact 2. The exact number of words in the Bible depends on the language and the translation.

Fact 3. The meaning of a word or statement is determined by its usage in a community (for details, see Wittgenstein, 1958, *inter alia*).

Fact 4. The exact meaning of the words in the Bible is determined by a long history of usage.

Fact 5. The word of God is authoritatively stated to be unique and absolute and unchanging.

Theorem. X is not Y .

Proof. By fact 1, some instantiations of object X contain 783,137 words. By fact 2, other instantiations of X contain a different number of words. So X is not unique. By fact 3, the meaning of the words in X is determined by usage in a community. So X is not absolute. By fact 4, the meaning of the words in X is determined by a long history. So X is changing. By fact 5, object Y is unique and absolute and unchanging. Therefore X is not Y .

Corollary. Axiom A is necessarily false, and deductions proceeding from axiom A are fallacious.

QED

I hereby revelate the following truths. God is truth. The truth is one. The truth is the whole. All is one in the absolute. God is absolute and unchanging. God is eternal. By induction, I deduce that God is one and all and ever more shall be so. Let God be X .

Who am I, what am I? I am the still centre of the passing show. Things change but I remain the same. I am one. I am all that I survey. I am the whole. I am absolute and unchanging. I am eternal. Let me be Y .

By the identity of indiscernibles, I deduce that $X = Y$. By the law of good manners, I deduce that I had better shut up about God.

Selfless Consciousness

From the third target article by Sam Harris:

I recently spent an afternoon on the northwestern shore of the Sea of Galilee ...

As I sat and gazed upon the surrounding hills gently sloping to an inland sea, a feeling of peace came over me. It soon grew to a blissful stillness that silenced my thoughts. In an instant, the sense of being a separate self – an “I” or a “me” – vanished. Everything was as it had been – the cloudless sky, the pilgrims clutching their bottles of water – but I no longer felt like I was separate from the scene, peering out at the world from behind my eyes. Only the world remained. ...

Every culture has produced people who have gone off into caves for months or years and discovered that certain deliberate uses of attention – introspection, meditation, prayer – can radically transform a person’s moment to moment perception of the world. ...

There are, in fact, several points of convergence between the modern sciences of the mind – psychology, neuroscience, cognitive science, etc. – and some of our contemplative traditions. Both lines of inquiry, for instance, give us good reasons to believe that the conventional sense of self is a kind of cognitive illusion.

A: Time and eternity may be worth exploring. Eternity in the present moment escapes the fantasy of a life after death modeled on this life. Life in eternity is not meeting up with old friends in a celestial lounge, but the Abrahamic faiths tend to offer this.

Ducky: Nobody knows *any* absolute truth pertaining to objective reality. The only thing we can say with any certainty about objective reality is that it is nonlocal, as revealed by Bell’s theorem. Essentially, a belief is a delusion, which is sustained by faith – wishful or magical thinking. It has nothing whatsoever to do with what *is*.

A: Sorry, but this can’t stand. If the “nobody” claim is true, it’s absolute. Maybe we can know absolute truths, but maybe they become trivial to the extent that they’re absolute. If the law of contradiction is granted as absolute, then it becomes trivial in the sense that it regulates what we allow ourselves to assert. Similarly, the “nobody” claim would become trivial in the sense that we would simply refuse to grant absoluteness to any other claim, however solid.

It is curious that you should single out quantum nonlocality, of all things, as certain. A hundred years ago, a straw poll of scientists would have shown unanimous belief that nonlocality was false (Einstein: *spukhafte Fernwirkung* – spooky action at a distance). Bell’s theorem is interesting, but it took some very careful experimental testing before we all agreed to accept it as certain.

And it is certain only in the sense that the overall picture conjured up by quantum mechanics, for all its paradoxical weirdness, is the best we can do to explain the amazingly exact technical applicability of the laws of quantum mechanics.

The problem I have with all this talk about absoluteness is that our own standpoint, relative to which all claims of truth must be evaluated, cannot be elevated too far without absurdity. We can bootstrap toward infinity, but we can't get there, or at least not that easily. Whatever platform we stand on is absolute for us. Because we are finite beings (or rather to the extent that we are finite beings, given that we might sometimes be mere channels for an infinite agent, for example an angel who tells us what to write), we are all fundamentalists about something, somewhere in our conceptual schemes. We may be arrogant enough to regard that something as known, but more often it will be wiser to admit to mere belief. I say we better get used to that fact, and try to make the practical consequences bearable.

Ducky: I coined my own definition of metaphysics: The blind leading the stupid into the unknown on a quest for the unfathomable. My definition is intended as a reminder to myself to keep things in context and in perspective, and not to take myself too seriously.

A: But we are in what the Germans call *Zugzwang*, which is a term in chess for the situation where you have to make a move. We can't live with metaphysics, but we can't live without it either. Any background beliefs, however trivial they may seem, to shore up our practical beliefs, both in everyday life and in scientific pursuits, add up in effect to a metaphysical system, which may of course be more or less systematic. I say we do better to look at the metaphysics and try to tidy it up, rather than just look away and hope it will somehow sort itself out.

Carl: You play semantic games with your arguments that distract from the meaning of what somebody is trying to say.

A: Sounds like fun to me! Seriously, the ordinary language we use every day is good enough for ordinary activities, but here we are on a more rigorous quest. The course of the discussion makes it abundantly clear that precise use of words and attention to getting clear about what they really mean is essential, or we melt down into the sort of greeting-card or song-lyric sentimentalism that you can express so well. This is a challenging task we have here, trying to prepare the ground sufficiently to enable Sam's wise words (remember them?) on selfless consciousness to take root.

Carl: So just like the man who came up with quantum physics had to imagine it before he could discover it, we will probably have to imagine everything that we will discover in the future.

A: Well, there wasn't "a man" who imagined it all, and that was the problem! It was a committee effort, and no-one really put it all together into a perfected form. Many people see a lot of the story as still up for grabs, in the sense that

a new picture could conceivably, for all we know, make the whole theory make much better sense than it seems to make so far. So your idea that we will have to imagine the future before we can experience it is not persuasive. Some futures descend upon us willy-nilly, whether we like them or not. As Isidor Rabi said when someone discovered the muon, “Who ordered that?”

Pat: What I am, philosophically speaking, is a naturalist, which the Wikipedia defines as follows.

Naturalism (philosophy), any of several philosophical stances wherein all phenomena or hypotheses commonly labeled as supernatural, are either false, unknowable, or not inherently different from natural phenomena or hypotheses. Metaphysical naturalism, the world is amenable to a unified study that includes the natural sciences and in this sense the world is a unity. Methodological naturalism is the belief that the natural sciences are a proper way to study the world. Humanistic naturalism, an outlook that places the emphasis upon a naturalism based upon scientific reasoning.

A: Well said. This is a position worth defending.

Lin: I think that when the Big Bang occurred there was a flash of light and all things came from that. We are beings of light. We are human beings with a consciousness in each of us that is the universe awakening to its own existence.

A: Once upon a time there was a big bang. A sea of particles and photons was created. The particles made stars, the stars made dust, the dust made planets and people, the people made gods. The photons made starlight, the starlight made life, life made electromagnetic symphonies in cerebral neuronets, and those electromagnetic symphonies made information structures invested with symbolic and totemic value.

Ducky: I don't know about the “beings of light” part, but I've always been intrigued with the idea that we could all be component small-scale elements in the universe's journey to understand itself. It is an interesting paradigm, in the sense of being a useful way of thinking about things.

A: The best and noblest part of a human being may be the brainwave symphonies in the brain. These carry our consciousness, represent an external world and our reaction to that world, and give form to the hopes and fears that launch our spiritual quest. Brainwaves are made of photons, and so is light. If we are stardust, we are also beings of light. The metaphoric extension of scientific doctrine here is equally good.

If human consciousness includes a world model that reflects the external world, then the tiny part of the universe that plays out its life inside a human skull may be understanding the universe at some level, as part of an awakening that spreads like a flame through the universe. So is the flame of awareness a real phenomenon? Experienced meditators report less a flame

than a steady glow, or rather an inner transparency. The ecocycles that constitute human life peak in a state of being that is open to the universe.

Kylie: In the late sixties when I struck out on the “pathless land of truth,” I had Teilhard de Chardin’s *The Phenomenon of Man* and *The Divine Milieu* in my knapsack. I thrilled and still do to at the idea of a continually evolving universe. To be on the productive side of this evolution is meaning enough for me.

A: Teilhard de Chardin found a scientific resonance in a big 1986 book by astrophysicists John Barrow and Frank Tipler. Their idea was that the anthropic principle, which is the idea that the universe is well furnished to accommodate life because otherwise we wouldn’t be here to remark on its furnishings, had a deeper significance and would drive the evolution of the universe to an information-saturated analog of Chardin’s omega point.

What can we make of this sort of idea? That we are tiny parts of the evolution of the universe is clear enough, and it also seems fair to say that our concerns reflect cosmic themes. We should naturally expect to see ourselves as on the productive side, and even to find that this view suffices to give life meaning. We are happy with where we are and what we’re doing. This is just as well, for if we weren’t we’d be in trouble.

One way to check the strength of a set of ideas like this is to spell out their practical consequences for our personal and public lives. If human beings are mere support structures for the photonic symphonies that take place in their brains, and if such symphonies can be bigger and better elsewhere, for example in quantum photonic supernanohyper computers, then we could upload our music and trash our old bods. We could leave the old stuff world, the world of stardust, to the robots, who could vacuum around the new machines and keep the electricity flowing by themselves. In our new global online digital paradise, we would be free to commune with each other to eternity, raptured away from the struggle in the Darwinian slime outside. But would we, could we, should we?

Ducky: The only people claiming to know the absolute truth about fundamental matters pertaining to existence and reality are those who claim that it has been “revealed” to them by a “higher power.” Even if one of these assertions happened, quite by accident, to *be* true, it would still be irrelevant, because we are not coupled closely enough to objective reality to verify it by observation or experience. I am quite comfortable with saying that nobody knows *any* absolute truth pertaining to objective reality. I don’t see this as being in conflict with the law of contradiction.

A: I sympathize with the general drift of your statements, but I’m pedantic enough to want to trip you up on a few points. For me, everyday sensory experience is an ongoing revelation, which one might poetically ascribe to a higher power in the sense that it came from one knows not where, if one is to be honest with oneself. Sensory input comes in, and we process it as best we

can to generate the illusion of a stable external world. People impressed by this revelatory aspect not only for sensory experience but also for thoughts whose logical provenance they are unable, for whatever reason, to reconstruct may as well describe them as revelations too. That is, they dimly sense that something they consider true is as true as anything else they know, and fall back on revelation as the best account they can give of why they think it true. Now the normal rules of social engagement demand that such people admit their own fallibility, just as you do for your own core beliefs (at least for all truths that are not mere tautologies, which are best regarded as true merely by definition, such as the law of contradiction). Yet I hope you will agree that we do not want merely to silence those who lack the sophistication to express their beliefs in politically correct epistemological circumlocutions.

Ducky: The thing about Bell's theorem (and why I singled it out) is that it is a mathematical proof. It tells us that nonlocality is a feature of reality. Even if quantum mechanics is discovered to be totally wrong, nonlocality will still persist as a feature of reality, to be explained in terms of whatever theory replaces quantum mechanics.

A: Yes, Bell's theorem is a mathematical proof, given the premises. But the premises are statements about the physical universe and may or may not be true of our actual universe. The theorem asserts that given those premises, a certain inequality holds in a quantum universe that does not hold in a classical universe. Experiments then show that the quantum predictions are upheld. Good for quantum mechanics, bad for classical mechanics.

One of the premises is that causally efficacious signals cannot travel faster than the speed of light. This one can deny, if one is prepared to reconsider special relativity. The distinguished physicist David Bohm did just this, and developed a consistent, local quantum mechanics that incorporated superluminal information waves. Needless to say, most of his colleagues regarded his achievement as empty, since he did not explain how special relativity could fail to apply to information waves.

Another premise of Bell's proof, this one implicit, is that the described experimental interaction takes place in one universe. In that case, it appears that the nonclassical statistics can only be explained by nonlocal interactions, or what Einstein called spooky action at a distance. However, as David Deutsch and others have pointed out, if the interaction occurs simultaneously in a set of initially similar universes that branch to realize the respective possible outcomes of the experiment, then the probability that we find ourselves in the branch with the observed results is predicted correctly by quantum mechanics without nonlocality. This is a clear win for the metaphysicians, who can now speculate freely about parallel universes.

Pat: I often wonder why religious beliefs cling so tenaciously to the majority of the world's people. Particularly a belief in a supreme being. With science dispelling miracles and explaining so much that was a mystery to ancient men, why do the beliefs of the ancients still resonate today?

A: Anything that has stood the test of time seems safer than ideas that seem to come and go like spring fashions. For example, since Christian orthodoxy has apparently survived twenty centuries of vigorous philosophical criticism, it seems it cannot be entirely unsafe. Reality is full of paradoxes to a naïve logician, yet life goes on. So maybe the paradoxes of Christian doctrine are harmless too, says the believer. But I agree wholeheartedly with you that in an age where science has established itself so successfully, only someone who fails to understand the basics of the scientific method would seek to deny it on the basis of faith alone.

Ducky: The ways in which we perceive the world owe much more to what goes on in our brains than to what actually goes on in the universe. Take vision. Think of a pencil, for example. We perceive it as a solid, opaque object. The pencil is made up of molecules, which are made up of atoms, which are almost entirely empty space.

A: Our perceptions owe a lot to what goes on in our brains, true. We have evolved to be efficient at perceiving things that are salient in our human worlds, where our survival depends on correct and exact perceptions, and yet remain hopeless at other, quite similar perceptual tasks.

Atoms, as you say, are mostly empty space. The hydrogen atom has a diameter of about a tenth of a nanometre, and all the other atoms are similar in size (they have more electron shells, but also more massive nuclei that pull the shells in tighter). The hydrogen nucleus is a single proton, with a diameter on the order of a femtometre, which is a millionth of a nanometer. So if a hydrogen atom were as big as a football stadium (a few hundred meters), the proton would be a little pea (a few millimeters) in the middle. The biggest nuclei have two hundred or so nucleons, so they would be just a handful of peas. Nucleons are mostly empty space too, with three tiny quarks buzzing around inside each one. And electrons seem to be truly point charges, except that spacetime itself breaks down at the Planck scale, another twenty powers of ten below the femtometer.

Kylie: I'm a lay person when it comes to science. I have organized my life around imagination, art, creativity. I pay attention to my dreams, to synchronicity, intuition. *What the bleep do we know!?*

A: Science at its best needs imagination, art, creativity as much as logic and rigid methodology. As for dreams, I tend to think they're the best things we have – “lose your dreams and you will lose your mind.” As Nietzsche once perceptively said, it's not absurd to regard the purpose of life as to sleep well – which I think also means to dream well, though I suspect for Nietzsche it meant rather to dream big, to dream bold, to thrill to the prospect of the coming of the superman.

Returning to Einstein for a moment, he stated quite clearly that his God was the God of Spinoza, and Spinoza was excommunicated from his Jewish community for his godlessness. Both of them saw the sometimes manifest,

sometimes hidden harmonies and symmetries of nature as somehow divine, and used talk of God as a poetic metaphor to indicate this divinity. The philosopher Schopenhauer, in many ways a cold, hard, godless man, saw life as the manifestation of a universal force, which he called the will, and which Nietzsche later recast as the will to power. Freud saw the same force as either Eros or Thanatos, or maybe both. But Einstein was less impressed by such thrusting talk.

What we undeniably have in the universe is things changing in time, and these changes seem to track the ongoing forms of a polymorphous entity that finds little godheads in people and big fountainheads in stars. This entity is the universal distribution of mass-energy, which determines all that happens and even the geometry of spacetime itself. Broken symmetries engendered by the decreasing average density of this distribution since the big bang created the forces we observe now, all of which may have started as one superforce, back in the era when spacetime was as small as the higher dimensions of string theory are said to be. See how poetic the words of physics are! But guess how much gym work you need to do first to throw these words around without losing it.

At last we come to the movie *What the bleep do we know!?* Certainly one of my favorite movies of all time but still deeply flawed. I know some of the scientists interviewed and have debated their views on many occasions. They are out on the fringe of orthodox science, and most of that quantum holism is too way out to be worth trying to relate to Heisenberg's principle or Schrödinger's cat. But something survives the critical acid, which is that because we ourselves are realized as incredibly delicate and fragile patterns of electrical activity over neuronets much finer than spider's webs (which only escapes our everyday attention because it all happens inside our case-hardened meat heads), quantum effects are quite likely to play a role. If so, then we cannot rule out such quantum phenomena as entanglement (a.k.a. spooky action at a distance, or we are the world) and superposition (a.k.a. opposite things happening at once, like 0 and 1 in a qubit, or being in two minds). All this suggests that the multiverse picture can help us, which in turn suggests a role for something like free will to choose a path through the branching tree of possible futures. As I said, great movie!

Albert Einstein: Common to all [ordinarily religious] types is the anthropomorphic character of their conception of God. In general, only individuals of exceptional endowments, and exceptionally high-minded communities, rise to any considerable extent above this level. But there is a third stage of religious experience which belongs to all of them, even though it is rarely found in a pure form: I shall call it cosmic religious feeling. It is very difficult to elucidate this feeling to anyone who is entirely without it, especially as there is no anthropomorphic conception of God corresponding to it.

The individual feels the futility of human desires and aims and the sublimity and marvelous order which reveal themselves both in nature and in the world

of thought. Individual existence impresses him as a sort of prison and he wants to experience the universe as a single significant whole. The beginnings of cosmic religious feeling already appear at an early stage of development, e.g., in many of the Psalms of David and in some of the Prophets. Buddhism, as we have learned especially from the wonderful writings of Schopenhauer, contains a much stronger element of this.

The religious geniuses of all ages have been distinguished by this kind of religious feeling, which knows no dogma and no God conceived in man's image; so that there can be no church whose central teachings are based on it. Hence it is precisely among the heretics of every age that we find men who were filled with this highest kind of religious feeling and were in many cases regarded by their contemporaries as atheists, sometimes also as saints. Looked at in this light, men like Democritus, Francis of Assisi, and Spinoza are closely akin to one another. (1930)

A: Note Einstein's caution over the word "atheist". Sam has it too. For what it's worth, I do too. I would much rather be thought of as a saint than an atheist (unlikely though the former is compared with the latter).

Rod: The psychological view of dreams has gone through a long, twisting evolution, and has arrived today at a very confident shrug of the shoulders. I studied a whole lot of silly stuff that psychologists wrote about dreams to get my shrink degree. You asked who or what creates them while "I" am sleeping. My immediate answer would have been you, but then I noticed that you had put quotes around the word. Is there a "you" other than you? A night-shift you that takes over for the day-shift you?

A: Let me try this. I've attended neuroscience conferences where speakers talked about dreams, and I know the current orthodoxy is that dream contents are just odd stuff from the previous day processed into rather random narratives that sometimes reflect personal concerns or predilections, as if the brain were doing garbage disposal and playing around with the poop. But science often advances when people take something apparently trivial and understand it in a new and systematic way. Given the huge advances in neuroscience over the last decade or so, I guess it might be time to find a new theory of dreams, nothing like Freudian mythology or tea-leaf reading but based on a clear model of the underlying neural processes. Needless to say, I'm not the one to create this new theory.

But the second point here, about the dream self, is easier to make a start on. Many years ago, when I was teaching philosophy part-time, I asked my star student to write an answer to the question "Am I responsible for what I do in my dreams?" She came back the next week with a wonderful essay distinguishing three senses of the word "I" – the everyday sense (that is, the day-shift self), the dream actor, and the dream observer. She pointed out that the dream actor often acted irresponsibly relative to the day self, while the dream observer was often deficient in reasoning power. Skip the rest – I gave her an alpha for the essay.

The multiplicity of selves is a natural outcome of Dan Dennett's theory of the self. Since Dan is America's greatest living philosopher and also a keen student of neuroscience, I hope you'll agree that his view is worth taking seriously. Let me summarize his view.

A self, as Dan Dennett sees it, is a construction of the brain. We make selves for ourselves (so to speak) to put our thoughts into better order. Each of us builds our own autobiography to sort out our memories, as an ongoing drama starring our own self. That is, Dan thinks we create ourselves as something like fictional characters within our own stories, and we do this for deeply rooted biological reasons. We create multiple drafts of this story, each with its own version of the self. Dan thinks the self is like a virtual machine, which is to say an emulation, like a virtual Windows machine running on a Mac. The parallelism of the brain supports a serial virtual machine, which he calls a Joycean virtual machine because it generates a stream of consciousness using words, like the fictional character Nora Bloom in James Joyce's novel *Ulysses*. For Dan, a human self is spun from words like a spider's web is spun from silk.

Kylie: Dreams might be nothing but the old coffee grinds of the used-up day. When people dismiss or scoff at dreams, well, I too at the end of day throw away the old coffee grounds. But many of us throw those grounds onto the compost pile, for life can grow from them.

A: Indeed. See my comments above. A theory can grow from them.

Carl: What about recurring dreams? I will forever be freaked out by this dream of twin towers falling that I had maybe a hundred times before I saw it happen on live TV on 9/11.

A: Indeed. See my comments above. An emotive future event throws its shadow back onto your mind while it is dreaming. This would be an example of the mind working in prophetic mode. Spooky action at a distance!

Pat: We're predicting the future in our dreams? Would you like to explain the exact mechanism by which that would take place?

A: I would indeed. Sadly, I can only give hints as to possible mechanisms, but they will suffice to show that this may be more than just a nutty idea. Sam Harris will doubtless encounter related ideas quite often in the quantum mind community. Let me give a few hints.

All the generally accepted equations of physics are time-symmetric, and the most glaring apparent example of asymmetry, namely the inexorable rise of entropy, is itself a time-symmetric phenomenon in the sense that retrodiction, if you know no historical facts, is subject to the same probabilistic rise of entropy. On this curious aspect of entropy, read David Albert or Brian Greene. The fact that the laws of electromagnetism (EM) could be satisfied by waves propagating outward into the past, instead of the observed direction of outward into the future, was remarked by James Clerk Maxwell and has

remained a minor puzzle ever since. On this curious aspect of EM, Richard Feynman was bemused too.

Nowadays we often say that quantum mechanics proves determinism is false and that there are alternative possible futures, but this need not be true. Some theorists, such as Gerard 't Hooft, now think there may be a deterministic layer of nature below the layer described by quantum mechanics. Also, Einstein believed in determinism, and believed that quantum mechanics was not yet a correctly developed or understood theory. He believed that the future is as fixed as the past. He thought the passage of time was an illusion generated by the limitations of our conscious minds and that the true view of nature was *sub specie aeternitatis* (Latin: from the standpoint of eternity).

With a fixed future and a unique universe, time travel must be impossible, on pain of paradox bordering on contradiction. So it seems that causal influences must flow unidirectionally from past to future, yet this is not quite right. Causal relations are lawlike relations, and the paradoxes of induction show that our knowledge of such lawlike relations is never more than hypothetical. Things happen, and make lots of pretty patterns, but exactly which patterns are the real regularities of nature and which are merely approximate or superficial, no-one can say with absolute certainty. So how about retrograde causation?

Now to the point. The quantum mind community includes people who speculate that although almost all EM waves propagate from a source in the past to sinks in the future, there is also a non-zero flow in the opposite direction. In case you think this is nuts, remember that in relativity theory, light rays are null infinities, as Stephen Hawking and Roger Penrose call them, which means time stops at light speed and all points along a light ray are simultaneous, so the causal relation between the source and the sink of a photon is puzzling anyway. The quantum mind nuts think there could be emanations from the future that impact our minds.

To forestall any more flames, let me hasten to add that I do not think this explains biblical prophecy or apparently precognitive dreams. However, believers in such things are not barred by logic and fundamental science from doing so, rather by elementary facts about history, human psychology, the probability of various events, and so on. For all we know, rigorous studies could one day find a kernel of truth behind such apparent nonsense.

Pat: I don't believe in anything supernatural and I think that this sort of thinking is what religion depends on. I have no problem with keeping an open mind, just not so wide open that your brains fall out on the floor.

A: But what is supernatural? I think everything is natural, including the subjective phenomenology of religious revelation (which I guess is probably psycho). My brains are still neatly encased in my head.

Pat: I don't see any evidence that the brain and its contents aren't the only factors in dreams.

A: Nor do I, or at least no hard evidence. But absence of evidence is not evidence of absence.

Pat: Creation requires a creator. There is, in fact, a legitimate use of the term in quantum physics, when you're talking about creation or annihilation operators that add or remove electrons from atoms.

A: If I may correct you, creation does not require a creator. This is a transposition into the linguistic domain of the fundamental error of the Intelligent Design nuts. More to the point, creation and annihilation operators in quantum field theory do not apply only to electrons but are quite general in their scope and effect. As Steven Weinberg said, in trying to predict the behavior of a system of particles, the best we can do is calculate the probabilities of creation or annihilation at each point in spacetime. Indeed some cosmologists now speculate that the universe may have been created in this sense, as a quantum fluctuation.

Dude: Technology is the great equalizer. Is it possible that technology has neutralized natural selection and stalled evolution? Are we breeding toward a devolved future man?

A: By definition, the evolution of species by natural selection is not neutralized by technology. If anything, technology enhances it, via genetic engineering and so on. Remember that technology is part of our extended phenotype, as Richard Dawkins explains, and therefore the influence of technology on our evolution is no more neutralizing in its effect than that of brightly colored feathers on the evolution of birds.

Dude: If there are really no bad or ignorant groups of people, there are only unfortunate ones who keep having babies that they can't feed, keep healthy, or educate because the government only cares about corporations and rich people getting richer. So it's everyone else's fault except the ones having the babies that they can't take care of but deliberately keep having.

A: People find this subject hard to be cool about, so you have to go easy to maintain a reasonable debate. The data is hard to interpret because there are lots of implicit assumptions here that many would dispute if they could. Your own story as a computer engineer from a modest background is one I can readily appreciate. I too worked in a variety of low-pay, low-skill jobs in my earlier years, and I now work in a team developing a software engine. I do my heavyweight philosophy on the side.

People have more kids than they can afford for reasons they are unable to understand. This is biology in action. Intelligent people have fewer kids (or none) for their own reasons (I'm waiting for a better world) and take more care of the ones they have. These are contrasting reproductive strategies: either pop out lots and let some die or have fewer but take better care of them. In a world where high living standards and civilized social norms reduce the death rate, it looks as if the fast breeders are on a roll.

But in fact this is more like division of labor. An organized society made up of people is like a human body made up of cells. In a society, some people do the thinking and others have kids. In a body, the brain cells do the thinking and the gonad cells work hard to maintain instant readiness for reproduction. In some kinds of people the brains are dominant and in others the gonads, but a functioning society needs both kinds.

A human body is a heap of stuff churning away chemically to maintain the higher functions. The higher functions cannot keep going without all that churning. Our society is like that. A lot of people are unable for various reasons to contribute much to high culture, but they can keep doing their jobs and raise families. With luck, some of their kids might make good. It's a lottery at that level. For a person who likes thoughtful pursuits, that sort of lottery is no fun unless you can stack the odds, for example by putting your kids through college.

In an organized society, kids don't just grow up wild but are put through a compulsory program of socialization, also known as education. This encourages them to value more thoughtful pursuits and has the overall effect of increasing the average level of functional intelligence in a community. Now we know that the intelligence measured by IQ tests is in large part genetically determined, so trying to educate some people may be about as much good as putting lipstick on a pig, but on the whole we tend to agree that universal education is the right way to go. Extremely intelligent people have a major say in shaping the education program and that may be their best contribution to the future.

I think Sam Harris would agree that until we know more about the science of mind, we cannot reasonably say that people would automatically be better off with higher IQs. In an age of intelligent machines, high IQs may become as irrelevant as bulging muscles. But it certainly seems to be a good thing that a society both has intelligent people in it and makes effective use of their best efforts. This is why we want to put a box around religion.

God's Hostages

From the fourth target article by Sam Harris:

For millennia, the world's great prophets and theologians have applied their collective genius to the riddle of womanhood. The result has been polygamy, sati, honor killing, punitive rape, genital mutilation, forced marriages, a cultic obsession with virginity, compulsory veiling, the persecution of unwed mothers, and other forms of physical and psychological abuse so kaleidoscopic in variety as to scarcely admit of concise description. ...

While man was made in the image of God, the prevailing view under Judaism, Christianity, and Islam is that woman was made in the image of man. ...

If we ever achieve a civilization of true equity, respect, and love between the sexes, it will not be because we paid more attention to our holy books.

Carl: All of the evidence necessary to debunk religion, as the archaic primitive superstitions of early man, lie in the holy books themselves. Cross referenced with recorded history, it can be plainly surmised that God is a creation of man and not the other way around.

A: Spot on, well said. But why did early man do this? What does it tell us about human psychology? Major advances in science often come from such apparently naïve questions. In this case, the reasons for the rise of religion in terms of power politics and repression of human spontaneity in all its forms seem obvious, but I think there is more to the story. What is missing is the story of the appearance of the basic architecture of human psychology itself. This must have evolved somehow from the simpler mental states of earlier primates, and it did so in a way that enabled humans to build up a social order of quite unprecedented complexity. We have no evidence that religion in some form was essential to that evolution, but conversely we have no evidence that our present social order could have arisen separately from the scaffolding of rules that religion provided.

The viral hold that religion memes take on human brains suggests that they exploit basic features of our mental architecture. The Abrahamic God is normally imagined as analogous to a father figure, sometimes scolding and sometimes merciful but always somehow other and beyond. The chink in the armor of this vision is that we can naturally be expected to grow up and become gods ourselves. I submit that this is the hidden attraction of the Abrahamic memplex. We are all trainee gods, said to be formed in the image of God but in fact growing up to a state where we can deploy the memes to hold our own successors in check for long enough to enjoy the resulting social stability.

The social order established under the Abrahamic God is a patriarchy, neatly symbolized by the transmission of the holy ghost from father to son in the Christian trinity. Women cannot become gods in this sense, but can only bear gods or become in other ways supplementary to the gods. Mormon theology makes this ambition to godhood most explicit. The Mormon social hierarchy goes from saints to disciples to apostles to prophets and revelators, and the original visions of Joseph Smith include the idea that men are trainee gods. In most variants of the Abrahamic tradition, this point tends to get lost, but it surfaces in another form as the intimacy of our relations with God. Close your eyes, say the words, and He is there, and so on.

Communion with God is a psychological phenomenon. It is communing with oneself at one remove, as if the self were a multilayered structure, stacked high into the future, and the self here and now could call on all the layers and make complicated transactions back and forth, contracting debts to the future to pay for the power to overcome present difficulties or depositing large sums

to God's glory in the hope of reward in the after life. All this suggests a model of the self that would be unintelligible without the religion memes, and invites elaboration into a psychic economics of salvation and self help.

Carl: Joseph Smith found some secret tablets in the woods that only he could read with his magic stone. After he translated these tablets, they disappeared and no one ever saw them. Oh, how convenient. His translation is the Book of Mormon. This story is every bit as credible as any of the other Jesus stories we get from Christianity. And all of the other Jesus stories are every bit as incredible as this version.

A: Forget the fairy-tale aspect of all this. Mormonism is a religious throwback generated by the harsh conditions of frontier life two hundred years ago. It returns to the humanized god figure typical of the Old Testament, where Yahweh interacted with people almost like a stooge in a Hollywood comedy. It also shows the hook that catches believers somewhere in the subconscious, that they have a special deal with God, and may even be identical to God at some level.

Carl: Sam Harris points out, correctly so, that Christian men who allow their women to vote and speak about political matters, are defying the commandments of God. And God is also Jesus, right? And the holy spirit if I'm not mistaken. They are all one, aren't they? All that stuff in the old testament was breathed out by God. Well, Jesus is God, is he not? Am I confused? Sam does not judge the morality of religious people. He judges the morality of the teachings in their holy books.

A: It seems a good interpretation to me that Jesus is the son of Yahweh in the sense that he saw himself in this role and spoke consistently from this position. For pious Jews, this was a blasphemous self-understanding. For pious Christians, it was a metaphysical singularity in the universe. For people like us, it represents a big step forward in the evolution of modern psychology, where the last and biggest god (who had formerly topped all those pagan gods) fell down to earth and people interiorized their own salvation, albeit still for many centuries in highly mystified form.

Carl: I have the utmost respect for the love and compassion message of Jesus. So do we all. It is the arrogant assertion that he was the son of the creator of the universe that has caused all of the trouble. You can't force a message of peace and love.

A: The message of love and compassion is good. This is the cash value of religion in the Abrahamic mold. This has made it worth schlepping all the metaphysical garbage along all these centuries. Now we may perhaps, as a result of the development of modern science, have grown up enough as a species to be able to discard the garbage but not the message.

Carl: Many times as a young boy, and more times as a teenager I went truly and honestly looking for God and Jesus. I got nothing. I became an atheist. Some Christians tried to tell me that the love that I feel in my heart for my

fellow man, that is Jesus talking to me. No. I get more shivers when I hear the lyrics to John Lennon's *Imagine* than when I read the Bible. Should I assume that John Lennon is Jesus?

A: Lennon was a good prophet, no doubt about it, thanks to a little help from Yoko. On a personal note, they inspired me back in the early eighties to spend a year in Japan, where I learned the value of the Zen tradition as an alternative way to enlightenment. But Lennon was not Jesus. Jesus was much more solipsistic, to the extent of being an "aspie" (autistic-spectrum personality).

Carl: No one here, including Sam, has ever criticized the Bible as a work of literature. We don't criticize people who think that the Bible is allegorical literature because we would be criticizing ourselves. That is what we believe it is. If you do as well, you should not be offended by anything that Sam Harris has to say.

A: Harold Bloom is good at criticizing religious texts as literature. He compares the "woman" who wrote the Book of J (that is, large parts of the Torah) to Shakespeare, and compares Yahweh to a Woody Allen figure. For me, this is the best way to debunk the metaphysical ambitions of Biblical fundamentalists.

Carl: You believers need me to understand God if you don't want me talking about what a delusional thing it is to believe without evidence. We will continue to criticize religion as we see it from our perspective. You will never shut us up by accusing us of ignorance. Explain successfully or be misunderstood.

A: Yes, the onus is on believers to make themselves understood. But the onus is on us to understand why anyone would believe such stuff and exercise the appropriate level of pity. If a person can only get by (and not commit suicide or any of a variety of shocking crimes) with the help of belief in a big sky daddy, then we should be ready to provide the appropriate psychological counseling until such time as the social order more effectively prevents the appearance of such pathologies in our midst.

Carl: Although the Jewish Bible is the mother ship, Judaism is a sliver in the pie chart of world religions compared to ominous chunks of pie that are Christianity and Islam. Newer Jewish writings would be of little consequence to the modern troubles that Sam and most of us are concerned with. I would certainly be interested to read them, though.

A: The Kabbalah has some interest. The central Kabbalistic work, the Zohar, which is purportedly a translation of an ancient text, was apparently written by Moses de Leon in thirteenth century Spain, according to Gershom Scholem, whose scholarship in this area is authoritative, and is therefore about as uninteresting, for me at least, as Joseph Smith's writings. But the tradition contains more. Harold Bloom is good on all this. Don't be too

dismayed by Madonna's interest in the Kabbalah via the New York populist Yehuda Berg.

On a philosophically more elevated level, do read Martin Buber's *I and Thou*. This is a mystical gem, written in German in the early twentieth century and revised several times. In its crystalline clarity it reminds me of Ludwig Wittgenstein's *Tractatus Logico-Philosophicus*.

Carl: On original sin, have you read *Ishmael* by Daniel Quinn?

A: *Ishmael* I read a few years ago, for the simple reason that it won the Turner Tomorrow Award (unlike my entry ☺). I read it as a scattershot jeremiad against speciesism, a rant against each and every incursion of modernity into a world that in fact was never in harmony.

I see history as the turbulent flow of huge contradictions, slowly rising and falling like waves on the rising sea of time. We surf the waves and have our fun, then drown and either settle in the peaceful ooze of asymptotic thermal equilibrium or get ripped to shreds by the shark of some shocking new contradiction. We swim with logic, hoping to gulp out our speech acts within the bubbles of artificially manicured consistent language games.

Alternatively, to change the metaphor, the contradictions are like fault lines in the ongoing crystalization of reality behind the advancing shockwave in time created by the light-speed quangling of the omnium. We get frozen into the quangement and our time closes off, either smoothly in a loop or in a jagged hell of shearing cosmic forces. A universe that was once hot and perfectly symmetric goes cold in time, with ever more of its symmetries broken.

Quangling and the omnium are from Roger Penrose in his blockbuster *The Road to Reality*. Quangling is what quantum particles do when they get entangled in nonlocal correlations of the sort epitomized by Bell's theorem, which may very well be an extremely pervasive process. The omnium is a neutral word for the universe or the multiverse, now that those words seem too specific. The omnium is everything physical, whatever the truth about the quangled stuff in it.

Let me surge on a while with this mystic rant. Quantum Gravity and its paradoxes, the M theory unification of string theory, quantum Information and those weird qubits, and quantum Reduction with its puzzling jump from superposition to an Eigenstate – all this is for me the “quagmire” (☺). Our only hope with the quagmire is to keep the faith in Mathematics, Informatics and Physics – “miph” – until we reach the promised land of a consistent view of physical reality.

Carl: I think the open information era created by the Internet will turn the fastest growing demographic into a snowball on a steep hill. That is my hope. If we have any hope, the World Wide Web is going to be the key component in any solution.

Robbie: I believe that Islam is an even greater threat to humanity than Nazism was, seeing that the stated aim is to take over the planet for Allah by any and every means whatsoever. Envisage a theocratic state of a fundamentalist persuasion armed with nuclear weapons. Because it is theocratic, it picks quarrels with neighbors of different religions.

For over 50 years, America and the Soviet Union refrained from using their nuclear weapons in earnest because they both realized that even winning a nuclear war would be a catastrophic disaster. But a theocratic government might believe in a much better world to come and feel no such constraint. A world without God would be a world without some of our most persistent and dangerous conflicts, conflicts that could evolve to destroy us all.

A: Both Carl and Robbie find my complete agreement on these sentiments. Like Sam, I see that the reflex of according respect to religion has suddenly become dysfunctional in this age of globally militant Islam. We need to see a military threat here, since letting nuclear weapons fall into the hands of potentially suicidal fanatics is an invitation to horrors that only a military response could prevent or mitigate. This has nothing to do with belief or disbelief in the religion of the fanatics, or even understanding or evaluating it, but is simply a question of survival in face of a physical danger. Janet Reno massacred the Waco cultists not because their cult was any less Bible-based than other cults but because they were fanatics with dangerous weapons.

Like Robbie, I think that a world without God conceived in such apocalyptic terms would be a world without some nasty conflicts and therefore, other things being equal, a better world. Like Carl, I see the best hope for prevailing in face of this threat to be to hold the information high ground by using the World Wide Web more effectively than the fanatics can use it. We need to appeal to the reasonable faculties of billions of people sufficiently quickly and thoroughly to leave no significant number of brains open to infection by the viral memes of fanatical and apocalyptic belief systems.

The war we face is a war primarily of ideas and lifestyles. The Internet and online living, homes and cars with all the latest features and functions, robot factories and the global money market – all these are weapons we can deploy to help win hearts and minds worldwide. When the last fanatics are driven to desert caves and jungles we can hunt them down like wild beasts, independently of any religious or other beliefs they may have. The world we end up with will be purged of mad religion as thoroughly and routinely as modern houses are purged of poisonous insects.

The nascent science of psychology will play a role here. As we learn more about how brain wiring in healthy people puts concepts in order and leaves no room for phobias, manias, obsessions or gods, we shall find increasingly efficient ways of onlining good knowledge into brains and equipping them with robust antivirus programs to fend off any mad memes that may pop up. Some people will doubtless regret the passing of the magnificent monomaniacs of figures like Jesus or Muhammad, just as some people regret

the passing of the dinosaurs, but most of our descendants will only need to see the ancient Spielberg classic *Jurassic Park* or the latest iVid treatment of World War Three to be heartily glad to have left all that behind.

Our task in this story is to resist the wrath of the rabid religionists by playing our keyboard violins here as the god-infested Titanic sinks beneath us.

Zara: Do we have souls? Is it possible to have an ethereal consciousness without a physical body, without our brains? All our spiritual experiences seem to be mental. But mental is the physical workings of the brain, right? If so, what is this “soul” thing?

Robbie: You could look on the brain as a radio receiver decoding the electromagnetic waves arriving from a far-off place. When the brain dies or ceases to exist, the electromagnetic waves continue as before.

Zara: That sounds like we need a mothership, like puppets on (electromagnetic) strings?

A: Neuroscience and the science of consciousness are proceeding apace, and already the position Dan Dennett espoused in his big book *Consciousness Explained* (way back in 1991) is looking dated. Briefly, his view is that the soul is the metaphysical shadow of the self, which is a thing our brain spins from words to create a narrative center to our personal history. The view is not impregnable: John Searle, a philosopher of equal standing in the world of consciousness studies, described Dennett’s argument in his review of the book as “consciousness explained away.”

For me, one thing stands out in the new view of the soul. The brain and the neocortical neuronet are just the carrier. What they carry is an amazingly complex and subtle symphony of electromagnetic vibrations. These have frequencies in the decahertz range (deep radio) and can be recorded from outside the skull only in grossly aggregated form in EEG and MEG traces. Still, computer modeling enables us to work out quite a lot of the details. Synchronous neural firing creates strong notes in the symphony, and jostling for dominance between neural groups causes themes to rise and fall in the resulting music.

The music of the hemispheres may be the best analog in contemporary physics to the soul. This incredibly delicate and complicated melody seems to consist entirely of electromagnetic waves, which in turn are photons, which in a higher part of the spectrum are light. In this sense, it may not stretch a metaphor too far to say we are beings of light. Our souls, it seems, are shimmering photonic clouds that find their homes in the stuff of our brains.

So it seems that comparing the brain to a radio receiver may be quite fruitful. When the photons in the brain create symphonic melodies, it may well be that they resonate with waves that come from afar. For consider the wavelengths of decahertz photons – megameters, as big as Planet Earth. This is also the Heisenberg uncertainty or quantum fuzziness of the waves. On this view, all

the thoughts of all the people on Earth get mixed up as deep radio electro-smog. Of course, our heads serve as rather effective Faraday cages to insulate our thoughts from each other, but there may be leakage at some level.

What can we deduce from all these rather ambitious ideas? Well, first that our bodies are really like puppets on electromagnetic strings. The output from the ball of music, sent along motor nerves, steers the body. The music may well amplify subtle signals from remote sources, for example an alien mothership in a stealth orbit at a Lagrangean point beyond easy detection. But this is getting silly. Carl Sagan once defined science as paranoid thinking applied to nature, but this level of paranoia verges on the pathological. If we balance the probabilities, from way beyond the Earth we are almost certainly little more than interesting carbon chemistry conjured up by sunlight.

But what about souls? Do they survive the death of the body? Well, the music does. The radio photons that leak from our skulls radiate out into interstellar space and dissolve in the thermal background. More yet, photon are eternal in the sense that time stops for them. Einstein redefined time in such a way that the time registered by a photon between emission and absorption is zero. If the radio photons from my skull meet an alien transponder a billion light-years away, and this transponder reconstitutes the music of my soul, there I am again, waiting not even a second between skull and transponder.

But don't hold your breath. Rather, be grateful that your time in this vale of tears, this mortal coil, is bounded, so that in death your deeds becomes immutable, which is another way of saying the jig you danced to the music of your soul becomes immortal.

Let me quote from one of my own earlier essays:

To be more specific about this enlightened community of symbionts, imagine that they live in intelligent pods that are connected into a body I shall tendentiously call the Global Online Dominion, which executes governance functions for the entire integrated and online global economic machine. Whenever the symbionts emerge from their pods, they do so in robotic exoskeletons that they plug into via nanotube implants to allow direct neural control. ... They see their own DNA coding rather as we see Windows, as mere functional code that is subject to overnight automatic update from a genome bank in the Global Online Dominion. For practical purposes these posthumans are inseparable from their pods and their suits. ... Their posthuman cores will serve as mere gateways to the online collective consciousness veiling what for them is the mystic union of their souls. In fact they may see themselves as angelic beings who each day become temporarily incarnate as robotic cyborgs to maintain their physical world.

From "Will robots see humans as dinosaurs?" (2006)

Mental: Since we seem to have free will, it would seem to follow that there must be some kind of alternative to being with God.

A: What is being with God? This may be the time to recall my two-heads deconstruction of God.

Each of us lives in a fuzzy state that may be represented roughly as our having two heads, a small one for everyday life and a big one for God. To the extent that we have any clue about God or can say anything meaningful about God, we must relate to an appropriate concept of God. Given the weird attributes of God, the only way to do this is to become God, from inside as it were, by inflating ourselves up to our big heads. This is hard work, and lots of thoughts about free will and so on bubble up to cloud the view, but once you do it, you can throw off the Abrahamic fetish.

By the way, pop guru Deepak Chopra says this clearly in his book *How to Know God*. Much of the book is trash, in my humble opinion, but this key insight is a treasure from the Hindu tradition.

Robbie: We will never cease our search for knowledge but we can never be in possession of all knowledge. It has to be a never-ending search.

A: The magic key to all knowledge is *supervenience*, whose Latin root means something like coming out on top. In the philosophical sense, one can say that biology supervenes on physics or that consciousness supervenes on brain processes.

Finding knowledge is not just learning one damned thing after another, or science would be no better than stamp collecting, but finding the patterns or the laws. Once you have a good law, the facts just fall into place, and keep on falling into place. If it made sense to say that God supervenes on everything, then all science would peak in God and God's law. We would enjoy peace unto all eternity.

Soja: I'm not interested in theology, and what is there to understand about atheism except that an atheist doesn't believe in God, for whatever reason?

A: I would invite you to reflect on my comments on God and supervenience. If the concept of God can be made logically and psychologically clean, we have a winner. If not, all is vanity. Therefore people do theology as a bet against long odds but for a big prize.

Soja: Believing is just the beginning of an exciting lifelong journey for believers who take their faith life seriously. No, believers are not bored with God, any more than scientists are bored with science.

A: If God is a hugely distorted image of the self mirrored in the universe, your approach makes good sense. To see the stars you need good telescopes, and polishing the mirror of the self is worthwhile.

God and Others

'God' or 'Allah'?

The first target article in the *On Faith* forum other than those by Sam Harris that attracted my attention was an essay by Daniel C. Dennett posted on January 30, 2007. Here are some extracts:

What can we do to change the tradition of politicians either brandishing their devoutness or defensively paying lip service to religion? It disfigures our public discussions, and I think that few people are fooled by it any more.

Perhaps we could ask politicians who insist on using the word "God" in their rhetoric to alternate between "God" and "Allah" (rather like "he or she" in non-sexist language) so as not to offend Muslims among us. (After all, are not "God" and "Allah" names for the same Being?)

What I want to hear from a candidate is a solemn and credible vow that he or she will put the good of the relevant constituency (city, state, nation) ahead of the good of that person's religious affiliation, if any, when executing the duties of office.

The suggestion did not inspire me, or apparently many others, but one of the comments, at least, was interesting. Here is an extract:

Pan: God is the sum total of all the gods. There is a mathematical process that leads us to God. The little gods control individual things like rain and volcanoes. There's a god imbedded in everything. God is the universal way of saying "all the gods" and giving equal time for all gods.

The notion that science and religion have an intersection comes by way of "the sum of the gods" theory. Scientists insist that all must be mathematically correct, exact and without exception. You name it and a god does it.

That has roots in the ancient theory that dead things don't move under their own power, which is a formal way of distinguishing between alive and dead. Living things have a living god while dead things have a dead god. Thus, angels have shields because they are gods, and gods can be killed.

The religious argument of eternal life has its roots here as well. Dead gods come back to life in a new existence. This is the origin of our spirit. Our bodies are temples of the holy ghost. When we die, our god dies. We stay dead but our god goes on to the afterlife.

A: This is wonderful stuff. In an earlier post, I used axiomatic set theory to "prove" that the concept of God as the sum total of all the gods (assuming any god can be represented as a non-universal set) is self-contradictory and therefore inadmissible. A gods theory could be built like set theory, and gods would be little essences of arbitrary objects. The hubris of the Abrahamic

faiths is then the desire to go for broke with One Big God. And the disaster waiting to happen was predicted in pure mathematics a hundred years ago.

The physics of a gods theory is a little trickier. In a “sum over histories” approach to quantum theory, we see the emergence of parallel histories, possible worlds and alternative futures between which we somehow decide. If each future has its own god as an ultimate attractor, our task is to choose the right god to chase after. Similarly, anything that changes in time does so along a world line that materializes a succession of future states held out to it by its own little god. Beyond the lifetime of any finite object there is its own little god, and the object comes to rest when it meets its god. Similarly, each of us comes to rest when we meet our god, the god that attracted us along the path of momentary states that make up our world line. Again the Abrahamic supergod overdoes it by requiring us all to come to rest in a single state. Perhaps if we all died in the same nuclear blast our gods would merge!

I think I have just invented a new genre of fiction, not science fiction but gods fiction.

Absolute Truth

The next target article in the *On Faith* forum that prompted a response from me was “Absolute truth manifests itself in diverse ways” by His Excellency Seyed Mohammad Khatami, a former president of Iran and the son of an Ayatollah, posted on November 15, 2006. Here again are a few sentences:

All divine religions have called humanity to the One, Sacred, and Absolute Truth. Should we aim to strip religion of the Absolute and the Sacred, all its content shall be thereby nullified.

Nevertheless, it remains up to humans to discern and grasp the Truth. ... Any proprietary claim to the full possession of the absolute truth and that which is truly absolute remains as groundless as the categorical rejection of truth in principle. ...

While truth is in essence absolute and unique, it has infinitely diversely differing manifestations. It is a calamity to mistake any partial manifestation divulged and discovered on a singular basis for the whole truth.

A: Mr Khatami, while I have great respect for the deep truth of your position and agree with much of your exegesis of it, I think the Western philosophical and scientific tradition leaves parts in need of revision. The Abrahamic religions are now insufficient in themselves to rescue us from the world we have allowed to grow up around us.

To start with the points of agreement, we each need a psychic fixed point, an absolute foundation on which we can find tranquility. To find this through the father figure of the Abrahamic God is psychologically natural, and gives

rise to a ritualized form of the respect for our ancestors that we humans find immediately comforting.

However, the modern science of the mind and the brain and the modern philosophy of language and history together suggest that the quest for foundations and tranquility can reasonably be pursued through a wide range of spiritual and lifestyle practices, and cannot reasonably be pursued in opposition to the revealed facts of biology and neuroscience on the one hand and linguistic and historical research on the other.

The revealed facts are these. First, we are creatures with no supernatural access to truth and no practical way to transcend our rooted position in nature. Second, our sacred texts and their authors are impossible to interpret clearly enough to enable us regard them as reliable guides to wisdom or truth, and certainly not as the only guides. Third, we have obviously made such great progress on matters of science and history that we now have a duty to rethink and renew our entire approach to the question of spiritual foundations. I am convinced that this renewal has already left most the specific doctrines of the Abrahamic faiths behind.

Either we can fight against this renewal and destroy much of what we have achieved over the centuries or we can rejoice at the opportunity to unite behind a purer and clearer vision of truth and goodness. I am sure that the renewal will enable those of us who survive to look back with gratitude both for the good work of our ancestors and for the fact that we have moved on and left their simple views behind.

Love Is a Force

The next target article in the *On Faith* forum to which I responded was “Love is a force that pulls hearts together” by U.S. democratic politician William S. Cohen and his wife Janet Langhart Cohen, posted on February 14, 2007. Here a few words:

Valentine’s Day is a moment we mark on the calendar with a declaration of love, that indefinable but unmistakable magnetic force that pulls our hearts together and makes them one. ... We love, and therefore, we are. We are one, and there is something Divine in this.

A: William, I remember you well from CNN. I always admired your decisions and your manner of defending them, and now I am delighted that you have found fulfillment not in logic but in love with Janet.

I studied logic until it made my head spin, and balanced the world’s ideas in perilous combinations until I ran out of reasons to keep juggling them. Now I find love for my fellow humans, spread wide in my case and more ideal than physical, gives life the joy that makes it worth living.

William and Janet, your testimony is radiant with love and happiness. Long may you flourish.

Believing In Things Unseen

The next target article in the *On Faith* forum that triggered me to read on was “Believing in things unseen is not delusion” by Jon Meacham, posted on February 2, 2007. A few words:

I am ... a child of the Episcopal Church ... Ah, for the days when our theological crises were about running out of olives and ice ... It is our fate and our good fortune, I believe, that you and I live in the shadow of that Cross, moving through the twilight, wandering the wilderness of this world, protected by the garden of the church, in the sure and certain hope that all will one day be well, on earth as it is heaven.

The target itself left me with little to say, but there were a few gems to be unearthed among the comments.

Soja: According to Francis Collins, 40 percent of scientists believe in God. So why does religion have to go?

A: Not all scientists see the depth of their own confusion. Not all scientists see the issue as clearly as I do. Most people in the world still think that tolerance of any and all religious nonsense is the proper way to smooth our path to a better future. Sam Harris has been brave enough to say this is no longer true.

Soja: I didn't get the impression on Sam Harris' thread that any believer was persuaded that they were being stupid to believe in God. What did emerge was that the debate was going in circles with no end in sight.

A: Believers are often deeply committed to their beliefs. But that you saw the debate as going in circles tells me more about you than about the debate. Drills go round in circles, but they also go deeper and deeper.

I read some of your long posts with interest. But your readiness to mix and match religious ideas dismays me. Mahatma Gandhi got away with it because he cut through to the heart of them all, to truth and love, as deep as the best of Jesus. Getting to the truth about difficult questions requires hard thinking.

Soja: I assume that the scientists who believe in God do so because they have not learnt to think for themselves. And are you quite sure “most people in the world still think that tolerance of any and all religious nonsense is the proper way to smooth our path to a better future”? If you could explain “hard thinking” and how to acquire it, and how to use it in thinking through difficult questions, I'd be grateful.

A: Some scientists who believe in God betray confusion in their thoughts quite unwittingly. They say things that seem good to them but make little sense when viewed more critically. Most scientists are specialists, and are soon out of their depth beyond their specialty. As for tolerance, I do believe that most people think a tolerant approach is the “proper” way to go, even if they or their extremist friends tend to prefer a more robust approach. For

example, I think the proper way to deal with murderers or rapists is to imprison them and try to reform them, but I must confess I tend to prefer the approach of shooting or castrating them. Most humans harbor such conflicting or even confused views. It is part of the human condition.

Mixing and matching ideas from different sources can work well, but it requires great care to create a harmonious result. Hard thinking is an approach I learned many years ago as a student in Oxford and as a teacher in London. It prizes focus and sharp edges. At the neuronal level, it amplifies specific output spikes and inhibits their near neighbors. At the linguistic level, it rewards clear formulations and exact definitions. At the rhetorical level, it celebrates sharp criticism and deprecates lazy acceptance of half-truths or emollient vacuities.

To acquire hard thinking, one needs to study a discipline like mathematics or physics, where there is well founded agreement on right and wrong answers to many questions. In this way, one learns the ability to contribute usefully to philosophical debates. Plato's academy reportedly had an inscription over the entrance to the effect that no-one ignorant of mathematics should enter. Nowadays many scientists suffer "physics envy" for essentially this reason. The problem-solving approach of mathematics and physics is held up as an example for the other sciences. The approach can be helpful in tackling just about any difficult question.

Rip: Who cares if George W. Bush prayed before he made his decisions? Whatever, they were bad.

A: To a psychologist, praying is a kind of meditation or reflection, and any decision arrived at thereafter is likely, *ceteris paribus*, to be better than one made on impulse. Agreed, Bush's prayers seem not to have helped, but I doubt if they did harm. As I see it, the psychology of Bush 43's Iraq adventure has much more to do with erasing what he imagined to be the blot on the family escutcheon caused by Bush 41's 1991 decision to pull out of Iraq before toppling the Butcher of Baghdad.

Meditation and reflection are big amorphous concepts, assuming we don't mean disciplined Buddhist meditation or fond reflection on times past. Similarly, prayer is an activity that may be instantiated in a wide variety of physical processes. In the case of a U.S. president from a patrician family, we can guess fairly well what sort of considerations would tend to be prominent in the resulting thought processes.

In any case, however, people act for reasons that they themselves can introspect only very imperfectly. They rationalize and confabulate more than one would naively credit when asked why they do what they do. People with serious brain injuries or afflictions tell themselves the most absurd stories to cover their apparent disinclination to recognize their true deficits. The relevance or efficacy of prayer is the least of our problems in explaining why people act as they do.

Soja: Hinduism in its essence as a religion has a universal philosophy and that is its greatest strength. In my opinion it can swallow any religion and still remain true to itself.

A: A swamp can swallow any person unwise to walk into it, but this is hardly a strength. My understanding of Hinduism may be superficial, but I see it as hopelessly rooted in ancient tradition, such as a caste system with dalits at the bottom and people with pale skin at the top, a creation myth based on a prehistoric queen giving birth to a tide of maggots that became humans, the practice of suttee and a preference for boys over girls, and a veneration of cows and other animals that seems quite excessive. All this means it is unable to offer any help in preparing us for living in a world where the Abrahamic religions are becoming obstacles to progress and where robots will soon make many millions of people functionally obsolete in the global economy.

Soja: Isn't science predominantly a left brain activity, and study of religions, the arts and anything involving abstract thinking, predominantly right brain activity? Are we perhaps running into trouble in the discussion of religion because left brain thinkers insist that religion should be explained in left brain scientific terms? Science doesn't try to explain or measure music or any other form of art by its standard. So surely, shouldn't it be self explanatory that science may not be the perfect tool to measure and quantify religion? A religious person who doesn't treat the Bible like a science or history textbook should have no problem reconciling science and religion.

A: Science is certainly not just a left brain activity. Anyone with only half a brain would be at a serious disadvantage in a scientific career. Intuition and the other prized traits of the right cerebral hemisphere are essential to do science at anything more than a merely technical level. The best scientists are also visionaries and holistic thinkers. Equally, most artists who lost the functional capabilities traditionally associated with the left cerebral hemisphere would quickly cease to be good artists. For example, imagine a writer who lost all use of the patches of left-brain neocortex known as Broca's and Wernicke's areas.

But the deeper point I want to make is independent of this. Science is the perfect tool to measure and quantify not only music and other arts but also religion, because science just is the business of measuring and quantifying natural phenomena in all their variety. Scientists already get very involved with music via the science of acoustics and with visual art via computer graphics. Conversely, a religion without the exact methods characteristic of science is just a fuzzy comforter, a sort of psychic teddy bear, that should just back off in any showdown with science.

Rip: Suppose that a company developed a drug that, if administered in adolescence, would protect people who smoked from acquiring smoking-related lung cancer. The drug could be given without interfering in any way with exhortations to these young people that they should not smoke, from any parent or group. Would there be groups coming out with statements that this

drug was not necessary because “proper” decision-making on the youngsters’ part would be enough? Not likely. So, what is the difference here? I submit that it is the role of sex, and the religious attitudes towards it.

A: I think this is right. If we abstract from the emotive issue of casual sex, the issue can be compared with laws mandating the fitting of safety features in cars, which arguably encourage dangerous driving by reducing its risks. In both cases, as I see it, an important issue is net cost to the taxpayer. Medical and other bills for treating cancer patients or road accident victims tend to be paid by all of us in our insurance premiums, and we have a right to mandate any preventive steps that improve the statistics, reduce net costs, and leave human freedom and dignity intact.

Faith in the Public Square

The next target article in the *On Faith* forum that drew my attention was “Faith in the public square” by Jon Meacham, posted on February 18, 2007. Again, a few words:

On this Presidents’ Day, it is worth pausing for a just a moment to consider the history of religious references and the presidency ...

George Washington promised that the government would “give to bigotry no sanction, to persecution no assistance,” a promise that I think is as fundamental to America as the promises of the Declaration of Independence. ...

As Robert Ingersoll, the great 19th century agnostic, once said, it is a poor religion that requires a musket to enforce belief.

Yet, as [Benjamin] Franklin remarked, religion is an intrinsic human impulse ... John Adams took the point into the political realm: “Religion has and always will govern mankind,” he wrote in 1818. ...

Are presidential evocations of God religious or political, sincere or cynical? ...

On the whole, though, when [Abraham] Lincoln issued the Emancipation Proclamation because he had struck a bargain with his “Maker” ... or when [Theodore Roosevelt] said the true gospel lay in one’s works, not just one’s words, or when [Franklin Roosevelt] prayed for victory over the forces of tyranny, or when [Lyndon Johnson] summoned divine blessing for civil rights legislation, they were deploying religious imagery in noble causes. ...

When you hear a president invoke God, then, always listen carefully to the context. Be alarmed if the president is saying that a particular political path is, in his view, ordained by God; be at peace if the president is saying that he is praying for God’s blessing and guidance in a complex

world. The former is hubristic and dangerous; the latter humble and wise.

...

We are right to be reverent about our nation – and we are obligated to be respectful of the rights of others to do as they please, within the spirit of the democracy whose leaders we celebrate today.

A: Mr Meacham, your roll call of the presidents makes the argument for you: for all practical purposes, the United States of America is a Christian nation. Religious passion in a substantially Christian form is the driving power behind the messianic zeal of leading Americans to fight the good fight for American virtues and values.

European nations have been there and done that. As you well know, the British Empire did it on a global scale. Spanish, French, Belgian, and Dutch colonialists boldly went and helped out too. And German nationalists fought atheistic Communism in the name of the Christian West.

Now, in the climactic years of the global Pax Americana, before China and its satellites take over control of our economic destiny, it is worth pausing to reflect on the magnitude and ambition of the Christian project. The civilization that grew in the peaceful parts of Christendom has spawned the science and technology to unite the human species in a single network of planetwide economic and social relations. Within our deepening online civilization, the religion of the cross will doubtless have an honored place for many years to come.

But right now we face an Islamic backlash. Zealots for the other missionary monotheism are out to grab what they can before they go under, in a desperate bid to oppose the new global online dominion. The next few U.S. presidents should perhaps address the danger that a secular heritage grown strong in the shade of Christian philosophy will be fatally weakened in the struggle to defeat Koranic fundamentalism.

The priceless pearl in the Christian oyster is not the personality cult of Jesus of Nazareth or the metaphysical nonsense of the Holy Trinity but the orchestration of the efforts of hundreds of millions of people over many centuries to build a scientific tradition that transcends all previous religious strivings in its power and promise. And now America, the land of the free, is also the land where Einstein is the new Moses and Sam Harris is the new John the Baptist.

Eroticism and Celibacy in Hinduism

The next target article in the *On Faith* forum that caught my eye was “Eroticism and celibacy in Hinduism” by Sally Quinn, posted on February 20, 2007. A few extracts:

“There has always been tension in Hinduism between sexuality and celibacy,” said Sudhir Kakar, a noted Indian psychoanalyst ...

“The idea in Hinduism is the transformation of sexuality into spirituality, that we can sublimate our sexual energy and use celibacy as a transformative power, into the creative fire.” ...

Even then, however, there was still tension between sexuality and celibacy, Kakar said. “Should one be celibate or should one celebrate sexuality? Though sexuality was celebrated, it was believed that one part of life has to be subordinated to spiritual life,” he noted. ...

The psychoanalyst said that Mahatma Gandhi was well-known for his views that sex was only for procreation. He had four children but was always troubled by his own sexuality. ...

Is he religious, I asked? “No I am an agnostic,” he replied. “But I have faith in these ideas. I would adhere to the notion that sexual fire is creative, not something to be easily trifled with.”

Kakar said he believes that saints and mystics are capable of transcendence, the experience of being completely outside of yourself that most of us do not achieve.

A: Ms Quinn, you say:

- 1) Mahatma Gandhi held the view that sex was only for procreation and was troubled by his own sexuality.
- 2) Sudhir Kakar would adhere to the notion that sexual fire is creative, not something to be easily trifled with.
- 3) Kakar believes that saints and mystics are capable of transcendence, which most of us do not achieve.

Since I have shared the Gandhian view (1) for almost a quarter of a century, following persuasion by St Augustine that the way of celibacy was the path to psychic cleanliness (3), which made me give up my previous sexual activism (2) with a succession of beautiful mistresses, I feel called to respond to your text.

Any evolutionary biologist would readily agree that sex was only “for” procreation in a quite evident sense. The more or less permanent state of sexual appetite that we seem doomed to experience is a side-effect that is certainly troubling if one’s goal is to rise above it, and is enjoyable only in the sense that one can artfully enjoy the slaking of any appetite. Transcendent joy through sex is a rare and splendid state, unreachable in my humble opinion via sexual athletics, indeed as unbiddable as the mystic transport of any exalted state of mind.

Gandhi also believed that a person who could contain his (speaking for males here) sexual appetite was as rare and as valuable as a diamond in a mass of rock. He thought we should all aspire to diamondhood in order to enjoy its sublimity and potential for mystic bliss, knowing full well that only a tiny

minority would achieve that state. Given the clouding of inner vision that can accompany addiction to “recreational” sex, I find his view convincing.

In short, I think the Hindus are onto something here. Their nuanced views can help the weaker among us grow out of psychosexual depravity in an age of instant porn far more smoothly and certainly than if we put our trust in the often harsh repression of traditional Christian or Islamic moral codes.

Mo: There is nothing nuanced about the pornography that is spread out over the sites of heritage. The *Kama Sutra* is an ancient porn magazine and our psychosexual disorder (PSD) started back then.

A: Actually, it started way before then with stone age carvings of “fertility goddesses” (the ancestors of Britney Spears). I agree with you that the Indian carvings are essentially porn. But I think they are nice porn, like *Playboy* and other mags that depict happy, healthy, beautiful women, who may indeed one day be shown in respectable galleries as instances of twentieth century art. For me, PSD is the sort of thing that grows up when such popular art is held in contempt, and depicts much uglier subjects. My beautiful may be your ugly and so on, but I contend that in principle there are more or less universal (Platonic) standards of truth, goodness, and beauty.

God and I

A Manifesto

We live together, God and I. Two persons, one spirit, a dialectical trinity.

I am a person, implemented as a strange loop in the symphonic excitations that animate the neurons in my cerebral cortex. Such a loop is formally explicable as a Gödel loop or a G-loop, which we experience as a hierarchy of levels that can loop back on themselves to map an apparently higher level surprisingly back onto an originally lower level. Douglas Hofstadter has developed this idea brilliantly in his new book (2007).

If we take this self-centered G-loop and add suitable gloop, we can deepen the mystery so far that we imagine the soul to be something quite ineffable, and even beyond natural explanation. Indeed, celebrating this self-created mystery and anchoring it in mystic and baffling paradox is one of the traditional roles of religion.

But I am rebel enough to say we should banish the gloop, diminish the strangeness, give God a nonparadoxical role in the dialectical triad, and rebuild the psychosocial order on a more rational basis as follows.

Each of us is an embodied soul for whom other humans are generally separate and less accessible. I have an inner life that no other human can share fully, and so does each of us. There is no reason to suppose that this inability is a metaphysical obstacle to soul-sharing. My thoughts reflect electrical activity in my brain, and yours do so too, in your brain. If we could rig a high-bandwidth cable between our brains, I have no doubt that we could share each other's inner lives quite well. However, progress in the neurosciences has not yet brought us that far.

God is my other. God shares my inner life, by definition. God holds a mirror to my soul and lets me see it. I define myself with the help of the mirror. I can regard God as my imaginary friend, who hears my inner dialogs and prompts me with feelings, hunches, insights, and revelations. God is a person in the sense that nothing impersonal could share and sense my inner dialog. That person is not me because the loop is different. There are lots of loops in my brain, including a big one for me and small ones for all the people I know well, and a really big one for God.

God and I are buddies in spirit. One spirit animates us. The spirit is the substrate for personality but is not itself personal. The spirit is the universal medium in which we all move and have our being. Words and concepts for the phenomenal faces of spirit are numerous and mostly imperfect. Brahman, the godhead, reality, consciousness, nature, the absolute, and similar words all seek to denote it, but they all raise more questions than they answer. Spirit is loop space, either as a Platonic universal or as a physical medium that is

transparent to us, or both, in an ineffable combination that begs just such an unanswered question.

God is one in the following sense. My other is what makes me one. In principle, at any moment my mind could fall apart into a mad anarchy of miniminds, or a pandemonium of cognitive demons, to recall Dan Dennett's image. The fact that I hold together finds a natural explanation in the physics of the brain, as the electrical swirl of my soul organizes itself into a storm of transcranial proportions, but the introspected analog of that strange swirl is an image of my soul reflected in the mirror held up before me. We all sense our souls in this sense, some with more clarity or vivacity, some with less, but always somehow. This is what makes us alive to our own personhood. But we also interact and understand each other. Somehow, we imagine, a single other, representing a part or aspect of the natural order that is beyond our present science, can be buddy to us all.

This seems to replace a mystery with a greater mystery. The puzzle of our introspected unity, as glimpsed in our mirrored soul, is compounded to a superhuman other who shares with all of us. Thus our psychic isolation is replaced by an implicit union veiled by what we naturally describe as the grace of God. We each experience a limit to our introspective power and to the reflexiveness of our stack of self-images. In Hofstadter's classic image, it is like seeing ourselves reflected to infinity between two parallel mirrors. God sets the mirrors slightly askew, which blocks the deeper view. Thus we each see ourselves as separate from others and need to appeal to God to find the deeper union we know is there. We know the union is there because we share a single world. Or rather, we posit a single world and have faith that our souls find union therein. The world is one, we say, and we share it, and our faith in that world is equivalent to faith in God.

God appears to me as a person reflecting my own personality. And to you, and to everyone else who shares this concept. Behind all this is our faith in the existence of a unified natural world that supports and sustains this level of introspective selfhood and felt personality. Within or beyond that natural order is an integrative power, revealed in the natural dynamics of spirit, which is perhaps reducible via recursive mirroring to loop space, and is perhaps analogous to the geometric God of Spinoza or Einstein. This integrative power brings our respective personalities into some level of productive interaction with each other and with nature. Scientifically, this is all way out of bounds. Even philosophically, it goes beyond all bounds. In logic, it reduces to a space of all forms that ultimately loops into itself, and creates paradox, and thus defeats logic.

The existence of people with selves and souls, who are able to achieve productive dialog and make sense of their world, seems to need a deeper explanation. We all know the standard story that human animals evolved in a physical world by means of a dynamic driven by replicating molecules, as in the famous trope due to Richard Dawkins, but this tells only half the real

story. The unity and interiority of people goes untouched in the evolutionary saga. The sensed transcendence of natural structures and dynamics, the sensed inner life, and the radical openness of the future and the prospects for psychic transformation or union, all go unaddressed in the molecular story. Describing the gap in the story by invoking a spiritual buddy to reflect my inner concerns and giving that buddy the power to do the same for you is hardly empirical science, yet it can be proposed and defended as a psychosocial axiom on various grounds.

A self without God is unbounded above and hence unstable. It recognizes no limit to the depth of the recursive stack of its self-images and hence is vulnerable to the runaway iteration of imagery to infinity. God puts a stop to this by reminding us of the imperfect mirror, like a patient friend whose quiet reaction to our runaway monolog speaks volumes. We have an other even when we are at our most private. This is good for us, since it damps and moderates our inner feedback loops by capping the stack of self-images and giving us an instant label for what still lies beyond. Instead of looping to infinity, I can sink back and let the other do the work.

A society without God is similarly vulnerable, this time to individuals who act selfishly, for personal reasons that bear no good relation to the interests of others. The corollary of the buddy axiom, in the version positing one buddy for all of us, is that my buddy and your buddy compare notes, so to speak, and see the contradictions. Building a stable architecture for a human person presupposes that there be some such objective comparability for all of our inner lives in their entirety. A brain scientist would say that of course this is given, since thoughts have physical correlates in a physical universe. The point is that independently of any specific scientific story about how the brain works, we need such an axiom, as an immediate brake on the runaway madness of personal visions of transcendence. The axiom asserts that by definition we all share the same God, the same infinity brake, the same loop space, whatever story we tell to fill in the details.

On this view, God is the immediate, ever present, phenomenal manifestation of our psychosocial interconnectedness in a unified medium of fathomless depth and infinitely variable appearance. The phenomenology of God is hard to decode but need be no less real for that. All the imagery around us, all the features and structures of our outer and inner worlds, are faces of the other, now happy, now sad, now peaceful, now shocking, now boring, now awesome. Interpreting all that as feedback from our imaginary friend is a crude but effective way to begin to deal with it. Our imaginary friend has many faces, far more than any of us can imagine, but, hey, why not?

Behind all this fundamentalist theology is a hard claim about reality. Subject and object are equal and opposite. If I am a person, there must be an objective reflection of that fact. The constellations of objects that surround me must allow interpretation as faces of something other than me. Moving around among all those faces, we can see that every object reflects a self-

image of some sort, maybe simple, maybe strange, maybe beautiful, maybe ugly, that issues forth under the appropriate interaction and enhances or enriches or adorns or poisons our own subjectivity as we hold our own mirror up to them. In such interactions we see the connection of all things, and can extrapolate to the veiled union of our own souls, which is an axiomatic truth equivalent to the unity of our shared world.

There are dense volumes of philosophy that explore detailed aspects of this vision, but the outlines, as here, are simple and compelling enough to come over independently of the details. The concepts of you, me, and God come together in a dialectical program that executes alongside the scientific program of exploring nature, spirit, whatever. The packages are complementary and are worth less if separated. I venture to hope that even such iconoclasts as Richard Dawkins, Daniel Dennett, and Sam Harris could be persuaded to contemplate this conceptually minimalist enrichment of rationalism.

To restate the case, I am advocating that we reuse an old word in a new way, for three broad reasons. First, in a loose, wacky, intuitive way it fits in with how at least some people some of the time uncritically use the G-word. Second, it extends the rather subtle psychology of I-me-my and you-us with a logical complement that enables us to build a fuller theory of personhood. Third, it expresses the axiomatic faith that we all live in a single reality at some level, despite the obvious fact that reality presents us with a huge variety of different and changing faces. That faith is fundamental to all science.

Once we see the complementary coupling of me and my other, and of our personal selves and our shared subjectivity, and see the universal medium, which for want of a better word we may call spirit, in which the drama of persons plays out, we can perhaps begin to regulate our social intercourse in a more reasonable way than hitherto. Once we redefine the G-word in this minimalist way, and realize that most of what people say with the word is unsupported by the new semantics, we can begin to deny the inflated and bombastic claims people make with the word.

In particular, we can begin to cast off the gloopy excesses of traditional religions. God is not gendered and does not favor any particular ethnic or other group or species, God is beyond good and evil as we customarily see those ideas, and God does not promise relief from suffering or a rewarding or punishing life after death. God is not the inflated father figure of Abrahamic myth, which is a mere projection into crude metaphysics of a patriarchal social order, and does not require worship or sacrifice or a repressive social code. And God is not the creator of the universe, but at most its reflector or apperceptor. The universe just is, and is either self-created or uncreated, if the concept of creation is a meaningful concept at this level. If anything, the universe is a manifestation of spirit, which in turn is the eternal medium

within which we and God have our being. The purest concept of God is mystic, and the best human way to find it owes more to love than to logic.

In short, there is an idea we seem to need to complement the psychology of personhood and provide a stable foundation for a psychosocial order that includes systematic science, and that idea can be denoted by the G-word. We can either muddle on in a tangled and gloopy world where that word is increasingly kicked around as a political football or we can become more fundamentalist about it and lay down a new law to clean up the world.

The Empty Wager

The next Sam Harris target article in the *On Faith* forum was “The empty wager,” posted in April 2007. From the target article:

The coverage of my recent debate in the pages of *Newsweek* began and ended with Jon Meacham and Rick Warren each making respectful reference to Pascal’s wager. ...

While Pascal deserves his reputation as a brilliant mathematician, his wager was never more than a cute (and false) analogy. ...

But the greatest problem with the wager – and it is a problem that infects religious thinking generally – is its suggestion that a rational person can knowingly will himself to believe a proposition for which he has no evidence. ...

Beliefs are not like clothing: comfort, utility, and attractiveness cannot be one’s conscious criteria for acquiring them.

Robbie: I’ve said a prayer for you, Andy. Get well soon!

A: My *God and I* manifesto is far from satisfactory and the quality of the argument might politely be described as sucking. But somewhere in it is a glimmer that betrays the inexorable pull (the suck) of the religious tendency, or perhaps one should say the tickle, the itch of the divine, or even the anthropological sand, as it were, that causes the pearl (God, the marble in the Hofstadter sense – read his new book!) to grow in the true believer. I need to feel it, to fondle it, and test its properties. Only then can I give it the treatment it so richly merits. Trust me, my brain is still hard-hatted. I just want to contradict Sam, to escape the flatness of his position, which reminds me of Victorian utilitarianism (a philosophy that Marx I think rightly described as “shallow syncretism”).

Robbie: What’s all this about you being a strange loop in the sense of Douglas Hofstadter – who he?

A: Douglas Hofstadter is the greatly renowned author of *Gödel Escher Bach: An Eternal Golden Braid* – a celebration in richly elaborated puns and psychic gimmicks of all kinds of the astonishing work in mathemagical logic of Kurt Gödel (the young man who in 1931 torpedoed the mighty ramified

theory of types developed in the years 1910 to 1913 in the three fat volumes of *Principia Mathematica* by Alfred North Whitehead and Bertrand Russell, a.k.a. Sir Bertie or Lord Russell) and the divinely recursive and hence amazingly analogous loopings in the music of J.S. Bach and the engravings of M.C. Escher. *GEB* appeared in 1979 and now Douggie has struck again, this time with an endearingly readable work entitled *I Am a Strange Loop* in which among very many other things the parable of the imaginary but very tangible marble in a box serves to illustrate the elusive metaphysics of “I” – and hence, for me, of course, the no less elusive goose chase for God. My take, in a nutshell, is to project the central idea from a similarly idiosyncratic classic published in 1976, namely *The Origin of Consciousness in the Breakdown of the Bicameral Mind* by Julian Jaynes, and weave from the intriguing complementarity of their twisted strands an Idea Whose Time Has Come, namely that God and I jointly inhabit my cerebral hemispheres and coexist in divine dialog, eternally singing dialectical hosannas to the polymorphous phenomenology of our multifaceted reality.

Robbie: You’ve got it real bad, poor soul!

A: The God of the Abrahamic tradition is about as real as Santa Claus. But people believe, and this anthropological phenomenon cries out for explanation. Just as each human spins an “I” from the thoughts that swirl in the brain, so many humans spin gods from the mysteries and pious hopes that surround their psychic swirls.

Is this some kind of psychic necessity? Do people who rail against gods have other pieties that play the same role in their psychic economy?

I think they do. I think labeling such loci of sacredness in the *Gedankenwelt* with words like “divine” and “gods” clarifies things. Even the iconoclasts hold their holies holy. Let’s call them as we see them.

My innovation is to discern the existence of a hotline to God (One for all) in each cranium and invite us all to respect G’s role in the natural order and primacy over the human self. Thus we move toward planetary consciousness and put all our little me’s in their place.

My recommendation is to downsize the old gods and invest in the new One.

Jean: I enjoyed your attempt to create a new and improved concept of god. But how likely is it that the religionists will forgo the god-monster(s) found in their holy books?

My own psychic economy runs smoothly on a non-pious notion of quantum interconnectedness, like Heraclitus’ river, ever flowing and changing. If the religionists cannot be cured of their theism, that river could disappear.

A: The Prophet Sam is (or would be) well advised to check out some quantum philosophy and see *What the Bleep?!* Something to be treasured there certainly is (or quiz? – by analogy with bits and qubits). As for the

Koran, does anyone else see the analogy to that more recent work of, er, inspired prophecy, Nietzsche's *Also sprach Zarathustra*?

Bud: Sam doesn't believe in God but believes nonetheless in an intangible psychological something called Buddha Nature – the true inner transcendental self for which there is no empirical evidence.

A: Sam is (or would be) mistaken to think this is just Buddha. The transcendental ego was the central star of Kant's *Kritik der reinen Vernunft* (1781) and became an object of discussion in the whole tradition through Hegel and the idealists, Husserl and the phenomenologists, and Heidegger and the existentialists, not to mention Schopenhauer the orientalist (with his cosmic *Wille* that spawned Nietzsche's will to power) or Freud the monotheist (and his disciplinarian superego – such a *reductio ad absurdum*). Buddha deserves honorable mention for his ultimate self-help psychology, but Buddhism is godless, and quite rightly so.

The Problem with Atheism 1

The next Sam Harris target article in the *On Faith* forum that caught my attention was the edited transcript of a talk he gave at the Atheist Alliance conference in Washington D.C. on September 28, 2007. Here are a few extracts:

Given the absence of evidence for God, and the stupidity and suffering that still thrives under the mantle of religion, declaring oneself an “atheist” would seem the only appropriate response. And it is the stance that many of us have proudly and publicly adopted. Tonight, I'd like to try to make the case, that our use of this label is a mistake – and a mistake of some consequence.

My concern with the use of the term “atheism” is both philosophical and strategic. ...

We should not call ourselves “atheists.” We should not call ourselves anything. I remain convinced that religious faith is one of the most perverse misuses of intelligence we have ever devised. So we will, inevitably, continue to criticize religious thinking. But we should not define ourselves and name ourselves in opposition to such thinking.

Christians often complain that atheists, and the secular world generally, balance every criticism of Muslim extremism with a mention of Christian extremism. The usual approach is to say that they have their jihadists, and we have people who kill abortion doctors. Our Christian neighbors, even the craziest of them, are right to be outraged by this pretense of even-handedness, because the truth is that Islam is quite a bit scarier and more culpable for needless human misery, than Christianity has been for a very, very long time. And the world must wake up to this fact. Muslims themselves must wake up to this fact. ...

Another problem with calling ourselves “atheists” is that every religious person thinks he has a knockdown argument against atheism. We’ve all heard these arguments, and we are going to keep hearing them as long as we insist upon calling ourselves “atheists.” ...

The last problem with atheism I’d like to talk about relates to the some of the experiences that lie at the core of many religious traditions, though perhaps not all, and which are testified to, with greater or lesser clarity in the world’s “spiritual” and “mystical” literature. I think I should take a little time to discuss this. ...

We will have won this war of ideas against religion when atheism is scarcely intelligible as a concept. We will simply find ourselves in a world in which people cease to praise one another for pretending to know things they do not know. This is certainly a future worth fighting for. It may be the only future compatible with our long-term survival as a species.

Ali: Claiming that atheists could derive some kind of benefit from meditation goes against evolution and all other atheist principles. The reality of atheism is that it is a material philosophy and is about seeking happiness and then rinse, repeat. Also, what is the difference between meditation as a temporary source of happiness and other sources of happiness?

A: Atheism is not a materialist philosophy and meditation does not go against evolution. Philosophy embraces a huge range of positions, most of which do not recognize gods in any traditional sense. Evolution is a process that favors any strategy for improving reproductive success, including meditation for peace of mind. Eternal bliss can come from finding truth, as soon as one learns not to confuse eternity with a very long time.

Sam: To me it seems that the critiques of atheism from faithful people come from a perspective that cannot understand a lack of faith. If one’s entire worldview is structured around faith, perhaps it becomes difficult to view the world through the eyes of someone else who is not faithful to some entity or ideal. Religious people search for the mysterious faith that atheists must have in place of religion. There is none.

A: The error here is subtle but important. We all have faith. We have faith that our next breath won’t poison us, that the floor will bear our weight, that the computer will run logically, and so on. Atheists differ from religious folk not in lacking faith but in directing their faith more reasonably. In the rationalist limit, faith in the self-correcting processes of scientific enquiry can effectively replace religion.

Ali: I did a search for a clear faith. That is what attracted me to Islam. One God, universal message, and no conflict with science.

A: Accepting the absolute authority of one messenger and one book is unscientific.

Ali: Atheists should at least be having international conferences about the next evolutionary phase. I mean there has to be a consensus so that we can pass our million-year plan to our descendants, right?

A: Scientists have conferences about future developments all the time. And visionaries are constantly starting institutes for future-oriented research and so on. But a million-year plan? Step by step, young man.

Carl: I do not make the claim that there is a “reason” for our existence. Only that I don’t discount it. Something that will be a scientific revelation about the nature of our existence that will blow our minds and change our perception of everything. Our only concern and criticism should be of religion, not all spiritual transcendent thought. Let’s stop making people feel like idiots for wondering.

A: Wondering about future revelations is a fine thing if it stays in touch with the facts. And transcendence does not have to mean losing touch with the facts. But any “reason” for our existence that says we are playing our part in a big ecosystem, for example, is question-begging. Why not buck the system and kill the spotted owls?

Om: Meditative practices are efficient ways to alter the inner climate of the mind-busy human being. Just because they may have a connection with a religion doesn’t deter me from using them.

A: This makes what could be psychedelic into an act of mental hygiene, which is harmless enough. But I think Sam sees the possibility of finding deeper truth that way, something more like revelation.

Nils: Our brains personify anything that has the slightest hint of a person. Next thing you know it’s God. It is not hard to see how our ancestors came to personify nature. It is completely justified to sing praise to this enormously amazing thing called life that we’re all participating in.

A: This is surely central to any good anthropology of religion. It can be explained in evolutionary terms quite readily and makes the existence of religion among humans unsurprising. As for singing the praises of life, even the dourest atheists had better vote for that.

Pacman: It seems we’re all computers and our religious beliefs are programmed into us throughout our childhoods. What we end up believing has nothing to do with truth, and everything to do with the program.

A: This cannot be quite true, or we would have no worthwhile science. What we believe is modulated by our own experience, experiments, speculation and so on, and this activity refines our inherited beliefs in the general direction of better reflecting the truth. Or at least one hopes so.

Geo: People who defend Islam have to defend the Quran, and I feel people who defend the Quran are like people would defend *Mein Kampf*.

A: The big difference is that *Mein Kampf* is turgid and ugly, whereas the Quran has a shining eloquence that sometimes achieves beauty. Okay, psychotic thinking can be beautifully written, but this cannot redeem ignoble contents or messages. Nietzsche's book on Zarathustra is beautifully written but scurrilous in its tendency.

Carl: The biggest question for me is not why I exist, or why we exist, but why do I wonder about it? To me it seems possible that we have a higher purpose, and like the bee's higher purpose, it is a much higher purpose. Perhaps that purpose is to become aware of something, for the sake of the survival of the universe or for all life in the universe. That is one example for a reason or purpose for our existence that does not involve God. As far as intelligent design goes, the universe could be a science experiment.

A: Heidegger changed his big question in a similar way, from *Sein* (being) to *Dasein* (human being), which deflated his philosophical quest from something scientific to the personal philosophy of existentialism. Asking why you wonder is at best a psychological question with an evolutionary answer. As for a higher purpose, this is a hostage to future contingencies. Did dinosaurs die for me, or is my car just conveniently burning their remains? But we all know the universe is an experiment and the answer is 42.

Let me now outline my own view as briefly as possible.

The awareness of God as a mysterious personal entity behind the veil of worldly appearances, like the man behind the shower curtain in *Psycho*, has natural roots that anthropologists can explain. But the continuing power of this image, and its resistance to all empirical dismissal, suggests something deeper. In particular, we need to explain the power of the Abrahamic God (let me call him AG).

AG is the god of our fathers, the archetypal father figure, looming over all past and future generations of man. Practically, then, AG represents our genetic inheritance plus a cultural tradition of veneration for that inheritance. By worshiping AG, people pay homage to their gene pool and the cultural traditions of their societies. In effect, they are worshiping themselves and each other across the generations. By thus bonding themselves deliberately and emotionally into this tradition, they are transcending their personal selves and developing affective bonds to the generations, which is to say to the species. In their worship, they are learning to respond to the call of their genes, above and beyond that of their individual selves.

This is an illuminating fact for the Dawkins view of genes. The AG religions are perhaps the purest expression in human cultural tradition of gene-driven behavior. Only religion, people say, drives humans to behave inhumanly, such that the only possible benefit is for the dominion of the AG tradition itself. People infected with AG memes are easily driven to act for the species rather than their personal well-being, so long as here "species" means the ongoing river of past and future fathers symbolized by AG. The Christian

universalization of AG to embrace all of humanity and all the heavenly hosts (unborn generations) and its exfoliation of AG as the trinity of father, son and “holy spirit” (the seed of genes) makes the picture even clearer.

If this view is correct, many of the subsidiary traditions associated with belief in AG should make more sense in the light of the genetic imperative that Dawkins says drives our behavior. Celibate priests do little for their personal combinations of genes, of course, but by more efficiently propagating the AG memes they expedite the propagation of all the individual genes they carry. Killing heretics may seem counterproductive, since even heretics are infected with AG memes, but as in other fields the best is the enemy of the good. Think of lions killing cubs sired by other lions when they take over a pride.

One could go on, the but general drift must be clear. AG religion is such a pure expression of Dawkinsian biology that the Christian God could almost be called Gene. For this reason I find it ironic that Dawkins so passionately lambasts the religionists. Perhaps he should ease off and welcome their exemplifying his theories so perfectly. If Gene is so well served in Christian society, maybe he should even join in!

Regarding the scarlet A word, the followers of the prophet Sam Harris could call themselves Samites or Shari’ans.

Robbie: I’d be most thankful if you’d quote or show me where in the Quran there is “a shining eloquence that sometimes achieves beauty.” I have read the best English translation but never found anything that comes anywhere near that description.

A: Years ago, some Iraqis passionately praised the literary beauty of the Quran to me. Of course, I cannot read Arabic, but I am prepared to take their word for it. Many Arabs say the best Arabic writing is by the prophet (pbuh) and Rumi, in that order. The beauty of Rumi really does survive translation.

Robbie: Islam is far and away the most harmful and dangerous of the First Division monotheistic religions. Judging literature in translation is like looking at paintings in a smoke-filled room without your contact lenses. Even the best translation is a lie. But going by the English translations, the Koran trails way back as a poor third in the league table of holy writings. The Bible in Greek and the Vulgate is tenth-rate as literature. But in English in the Authorized Version it is one of the supreme glories of world literature.

A: This tends to illustrate that literary quality is best judged by native speakers of the language and then interpreted with benign scepticism by others. We don’t need to take sides on such questions. And since the Bible is essentially Jewish tribal history, let Jews take the lead in judging its cultural relevance. As for Islam, the danger is obvious. But subtler dangers (like those of Zionism or Crusaderism) can be just as bad.

Carl: In my view, the best that we can hope for in terms of de-conversion (or conversion to reason) is to convince the soft believers to transform their

belief in a biblical God, into a personal spirituality that sees God as some sort of abstract personification of nature. If anyone thinks that we are going to take people from biblical God belief straight to the cold hard reality that natural selection is only reason for our existence and the only explanation for all of our thoughts without some kind of middle-ground stepping stone, they are kidding themselves.

A: You make this sound like a political movement, as if atheists were anti-monarchists plotting to topple King God and offering the King's head on coins and banknotes as a compromise. And your talk of the "cold hard reality" sounds like what Bolsheviks delivered to Russians after toppling the Czar. Most humans like their reality warm and fuzzy, and prefer to check cold and hard at the door.

Dude: When Sam talks about meditation I suspect that he is talking about going beyond the natural, just like when he talked about reincarnation being true. You can claim that you are not talking about the supernatural, and just that which science has not found yet, but that is the same claim of all religions.

A: I doubt that Sam would endorse any conventional pieties about reincarnation. As for natural and supernatural, I recall a 1974 bestseller called *Supernature* by Lyall Watson that enthused about how nature can be so amazing as to seem supernatural. All things natural or supernatural form a spectrum from things we know to things we don't know, things we know we don't know, and so on in a Rumsfeldian recursion. Religionists who project wishful thinking into those rum fields need be no worse than dreamy stargazers.

Dude: Spirituality is simply a veiled idea of higher purpose and meaning in life without the word god in it. Free will is an idea or a concept, it is not a force or a substance or an essence. There is no such thing as free will in the natural (causal) world, and there cannot be unless you go supernatural.

A: Ideas of higher purpose and meaning in life can be what makes life seem worth living, so the iconoclasts who would tear down the Abrahamic God had better have a post-regime-change plan ready, or we shall be judged as harshly as we now judge Bush 43. As for free will, I have a soft spot for the view that in the ongoing debate on the foundations of quantum mechanics, where for example David Deutsch has recently provided a respectable probability interpretation of the branching-universes scenario, we shall eventually find room for something like the spooky idea of free will as a top-down ability to tweak our physical incarnations and choose where we want to go, maybe as in Steven Spielberg's charming *Back to the Future* fantasies.

Carl: I have never had an experience that I would describe as spiritual or transcendent. These are words that I use to describe imaginations about possible answers to questions for which science has no answer yet. Any

imaginings that I have that conflict with science are because of a lack of knowledge of that particular science at the time of the imagining.

A: Experiences that seem transcendent, however we finally place them in the Rumsfeldian recursion, are what makes life seem worth living. If I feel good, telling me about my dopamine and serotonin levels is really beside the point. In the cycles of lived experience, I judge my feelings from within, where I am free to deploy vague ideas of transcendence and spiritual significance without having to cash them instantly in the coin of cold hard reality.

Carl: Man, what a dick this God guy is, that he demands such subservience and praise. I wouldn't believe in him even if he did exist. Egomaniac tyrant. No wonder fewer and fewer people want to hang out with him every day.

A: You dig this God guy as well as anyone, so try to be constructive. But without a holy father figure, how can anyone in all seriousness take on the responsibility of fatherhood? Where's the role model? The Hollywood stud of the week? We're talking about the meltdown of an organized civilization here. We're toppling our own Saddam without a plan.

Hum: How certain are you that Christianity is myth, rather than the revelation of God?

A: Christianity is a myth even if Jesus is the son of God and will return in glory in yet another *Superman* remake. Like Superman, Jesus can run and run, or rather walk on water in our dreams.

Carl: To have faith in mankind and in man's ability to live outside of God is not impossible. It's happening as we speak.

A: People can bow out of the mating game and lose their desire to emulate the archetypal father, but if we all do it the species becomes extinct. Or rather the greatest glory of our species, namely the civilization founded upon the AG memplex, becomes extinct, perhaps to be replaced by bands of feral man-apes just waiting to be hunted down by robot weaponry. But I think we can be sure that the AG meme will be refurbished in some new form that can still worm its way into most men's brain code and turn them into zombies for its further propagation.

Robbie: The Bible is action-packed and chock-full of potential blockbuster material but padded out with too much poetry, jeremiads that make no sense, passages that are downright mawkish and boring, and tedious lists of who begat whom or which tribe smote which. Surely I'm not the only one who finds it to be so?

A: I agree, even though I haven't read it and don't intend to. Why should I care what all those Jews did? I would rather use the time to master more bookfuls of serious science and use the new stuff to build out our civilization. I vote for benignly neglecting that old Biblical meme-set so that it can sink slowly into a future prehistory.

Meditation

Soja: An American priest once told me a long time ago that meditation enhances everything.

A: Meditation and its benefits are exactly what civilized people need now to help themselves lift clear of the gladiatorial contest between the Islamists and the Zionists and Crusaders for exclusive rights to the Abrahamic brand name.

Carl: Sam Harris made the point that there are atheists who give atheism a bad name by painting people who meditate and people who worship Yahweh with the same brush.

A: The confusion is certainly a crass one. Meditation promotes clarity and peace of mind, which are both preconditions for rational frontal-lobe thinking, whereas the memetic assembly formerly known as Yahweh promotes zealous propagation of seed, with all its attendant bloodshed and strife, in brute genuflection to the patriarchal gene kit.

Sam: Given the degree to which religion still inspires human conflict, and impedes genuine inquiry, I believe that merely being a self-described “Buddhist” is to be complicit in the world’s violence and ignorance to an unacceptable degree. Once we develop a scientific account of the contemplative path, it will utterly transcend its religious associations. Once such a conceptual revolution has taken place, speaking of “Buddhist” meditation will be synonymous with a failure to assimilate the changes that have occurred in our understanding of the human mind.

A: To be pedantic, Buddhism is not really a religion and Gautama Buddha was an atheist, but let that pass. Just as Christians often ignore the radical challenge that Jesus of Nazareth posed to all religious orthodoxy, Buddhists often forget the eightfold way and pray in temples. As you say, better to make a new start. If meditation can create more harmonious music in the electrical traffic that lights up the neocortex, it pays its way independently of any historical doctrine. I see a link here with mathematics and physics. Starting in mythical prehistory with Pythagoras and his disciples, hard methods analogous to mathematical proof have advanced like a wave of crystallization through physics, chemistry, biology, genetics, and now brain science. Soon we shall understand mystical states of mind as well as we understand thermodynamic states of gases.

Carl: It may be true that scientific interest in something does not equate to belief in it, but for someone who is certain that these things are impossible, and that it is therefore, utter stupidity and a waste of human time to study them, it helps to insinuate that the people studying them are acting irrationally due to supernatural beliefs.

A: It is certainly not stupidity and a waste of time to try to understand scientifically how people think and dream. The value of doing so is independent of the referential contents of their thoughts and dreams.

A Theist Meme

Now that I've got that lot off my chest, I propose to sketch a new theist meme for your consideration. I hope that it can help us rescue the baby of genocentricity (in the Dawkinsian sense) from the bathwater of iron-age hogwash.

Contemporary secular culture tends to regard individual humans as ends in themselves (this is Kantian ethics) and sex as an appetite to be enjoyed alongside the emotional fulfilment of parenthood. Replication and its attendant activities, such as purposeful striving toward a future conceived as good enough for our kids to live in, are seen as forming a social matrix that needs no transcendent justification. The process continues without a foundation beyond modern science together with a psychology of felt desires and impulses.

The psychology of contemporary culture has not yet been crystalized in hard science. The brain sciences have a way to go yet, and may need a decade or two before they can defog our view of everyday states of mind. Meanwhile, we face a hard challenge from the religionists, or rather the zombie slaves of the AG gene stream, who wish to push on with replication (on the West Bank of the Jordan, in Gaza slums and European inner-city ghettos, in U.S. suburban congregations and Salt Lake City, indeed wherever AG is celebrated) irrespective of any new results from the brain sciences, as if to create facts on the ground.

As the birth rate sinks in secular cultures and as religionists push hard to make up the slack, the onward movement of science and technology accelerates exponentially. It looks like a race. Do we become docile individuals in a Kantianized social order built over an infrastructure of robots and high technology? Or do we await bloody chaos at the hands of enraged religionists fighting to secure space for themselves and their offspring?

The contrast is of course rhetorical. We shall steer a middle course. Those who control the robots (the botlords, say) will use them to keep order among the struggling religionists. Meanwhile, the botlords will need a more compelling drama to animate their own lives than the idea that they will somehow become immortalized in their own bots, say as blobs (binary large objects) in databanks ready for download into the latest robocars.

This is where the new theist meme comes in. People celebrate their own gene lines as ongoing traditions with characteristic lifestyles and mindsets. They readily instrumentalize any technology they can find a use for. So they will preserve the traditional rollover of human generations by martyring their oldsters. A mindset analogous to ecstatic union with God will be generated in a high-tech facility for administration to any and all humans who have reached their use-by date or who fail to meet the requisite quality standard. With AG as the prototype, who could resist going down in glory?

Atheists and others who think differently and fail to toe the party line on the new incarnation of AG will risk martyrdom outside the facility, where they will have to make up their own consuming myth. All this will be done for a very good reason, namely to make space for the heavenly hosts, the unborn generations who clamor for their brief share of earthly paradise before meeting their maker in the facility. So the angels will start by presiding over our individual extinctions, then take over the robocars directly, as photonic spirits, without the pain of birth and death, to realize a new species of angelbots.

Then, and only then, will the planet be free of the last residue of the AG brand.

Humbug

Hum: Anyone can assert that they feel confident in their position. I find this is the case with most atheists. It is more assertion than proof.

A: The confidence is based on a sound foundation, rather like the confidence of biologists that an evolutionary story gets the salient facts about life on Earth about right. The evidence is spread wide and thin, so it can be hard for a religionist to see at first, but once you see it, it's as clear as day, overwhelmingly and obviously correct.

Hum: Atheists are trying to reinvent, mold or deny their label. I find this strange, almost like they are trying to hide behind the lack of evidence they have rested their case on, for when you ask them what evidence they have that God does not exist, they say that you cannot prove a negative and therefore refuse to do so.

A: Atheists are doing so for the good reasons that Sam explained. We are united only in having outgrown our civilization's previous thralldom to a fetish, the Abrahamic God, that needs a very radical overhaul if anyone is to take it seriously in a world of big science and global awareness.

Hum: You cannot refute another position without first giving evidence to the contrary. To have evidence is a belief. Surely that is what they rest their conclusion on.

A: We don't need to play that game. The evidence has been in for decades, if not centuries. In this case, to have evidence is not a belief. It is a factual state of affairs on which we rest our conclusion.

Hum: Without the working of the Holy Spirit in your life, the Bible confirms that the preaching of the cross is foolishness to you.

A: Sorry, but the whole word game of "holy spirit" and so on is lacking the sort of semantic foundation that would make it worth playing seriously. No Christian philosopher in two millenia has given a clear account of what the holy spirit is supposed to be. In my arrogant opinion, I do better with my talk of genes.

Hum: Judeo-Christianity is the only worldview that can actually make sense of this world. Both you and Carl keep borrowing capital from it, but just don't realize it.

A: It makes some limited sense as a closed circle of ideas, like Marxist economics or Freudian psychology, yet fails to engage sufficiently deeply with the wider range of facts we now need to confront.

Hum: Your evidence that Jesus or Christianity is a myth goes against a backdrop of tremendous historical evidence.

A: The evidence has been chewed over often enough. It is a myth in a value-neutral sense, even if some of its key metaphors suggestively hint at deeper layers of truth, as with the gene story. Jesus was a great and wise man, no doubt, but Christian glosses on his life and work are just over the top.

Carl: You seem to have at least one argument in common with the Christians of America. That removing the God meme without a suitable replacement will result in the collapse of society as we know it. Morals will collapse. The robots will take over.

A: They need not collapse but they will certainly change. Given all we know about the evolution of morality, we can hope to escape the worst, but consider the contrast between morals in classical Greece and Rome and morals today. Our morals now may not be much better, but they are certainly different. As for robots, they will do whatever we make them do, and then more.

Carl: You ask me to give up on my attempt to escape the God meme.

A: Not at all. I ask you to give up on your attempt to roll it back generally. Each of us can trim our soul any way we like, up to the limits imposed by the quantum nature of reality, but certain facts, such as the grip of AG, are too deeply rooted to rip out completely.

Carl: Is it your contention that atheism or anti-religion is not a political movement?

A: The AG suite of religions has become inextricably tangled in politics, which is our main reason for wanting to dump it and take up a new relationship with our genes. But the quest to define that new relationship – which in traditional terms is the relationship between God and man – runs deeper than politics. Sam sees this, hence the meditation.

Carl: It sounds like you're agreeing that we wouldn't know enough not to kill and steal, or how to be a father, if it weren't for the Bible. How exactly are our morals going to change when people come to the realization that the god story is a lie?

A: Primatological and anthropological studies show clearly that our ethics run deeper than the AG story from Moses or so onward. The AG story sought to domesticate its chosen people, whom we can now regard as up to two or

three billion religionists in an unholy trinity of faiths, with rules, laws and commandments. In effect, this meant handling ethics by means of linguistic formulations, and any progress we can observe in ethics is due to our hard-won ability to discuss ever more emotive issues ever more precisely, and hence learn to regulate more and more of our behavior. Something similar will go on even as the AG myth sinks into history, but some things will change. The different ethical systems in the three branches of the AG tree give just a hint of the multi-culti blooming to follow.

Carl: And what are you saying about atheists? That we are completely unaware that the only reason we behave the way we do is because we are copying god morals even though we don't believe in him?

A: About atheists I am saying that we are no less governed by our genetic inheritance than other mortals. If the Abrahamic religions adapted (unconsciously, via the acts of myth-ridden believers) to those genetic imperatives, they can be expected to track real genetic drives quite closely by now. It is my assertion that in some respects they do, and that therefore atheists will do well to study just how they do as closely as possible to pick up clues about how to settle on ethical constraints that we can live by. For example, we may find that some of the constraints on sexuality imposed by the Roman Catholic church embody levels of wisdom that one might fail to see at first sight. Or we may not. All this is speculative until we finally topple our Saddam.

Carl: Religion is not a provider of human morality. It is a hijacker of common human morals that evolved naturally.

A: Religious myths and rules and so on reflect human behavior at its most fascinating, because most difficult to understand as simple consequences of our status as intelligent replicants in a physical universe. Religions modulate our morality in different ways, as the AG trinity shows even before we move on to Hindu and other belief systems. But like basic ape morality, religious morals survived historically because they brought survival benefits to the moralists. Rules that tended to promote human flourishing tended to prevail over rules that failed to help anyone. Of course there are bizarre exceptions, just like there are bizarre organisms in the more basic evolutionary tree of life on Earth.

Carl: In fact, Christianity is the source of immorality. Christianity allows people to do evil things and let Jesus take the rap. That's some morality. I'll tell you how our morals will change when religion is relegated to the fringe cult heap. They will improve.

A: Christianity is a big family of faiths and cults, some of which have featured ugly stuff, agreed. But letting people do what they want and then repent to Jesus when things go wrong is hardly a source of immorality. Rather, it is a source of freedom and redemption. People do what they do, and a rule system has to accept that fact before it can offer any chance of turning sinners around. The alternative would have been rigid rules and

summary execution of sinners, which reminds me of some kinds of Islam. Anyway, we can now do better. We are casting off the old duds fashioned from Abrahamic threads and trying on new gear. We will make mistakes. But when the dust settles, the survivors will doubtless agree that things are better, somehow. That too is human nature. Even when the angelbots herd us into human zoos.

Hum: Evolutionary science is not a solid foundation. Evolutionary science is a constantly changing field of knowledge. That is evident in so many of its speculations. They keep changing the date of the Big Bang, utilitarianism is abandoned by many for punctuated equilibrium, and many of their transitional links have been shown for what they are, a fraud.

A: Evolutionary science is as solid as anything in science. That science can accommodate change is a strength, for it leads to increasingly refined approximations of truth. The Big Bang picture has several billion dollars of organized astronomy behind it. To have refined our estimate of the age of the universe to 13.7 billion years is an achievement that I would need to deliver an hour of mathematical lecturing to explain fully – go read the textbooks. Utilitarianism is a philosophy, not a concept in biology. Gould’s idea of punctuated equilibrium is only a suggested refinement of Darwin’s picture. As for the transitions, again I would need an hour to tell the story – read the books. No fraud there.

Hum: How can you explain natural selection coming about from chaotic, chance beginnings? Order requires intelligence. Throw a grenade into a building and the resulting explosion does not produce order. You, as an atheist, have no explanation for origins, meaning, purpose, truth, ethics, intelligence, life from non-life, the abstract from the material.

A: Read Stuart Kauffman’s big book *The Origins of Order*, but beware – he is a genius! Seriously, these are hard questions and we scientists are fighting with them. We are doing so honestly, admitting their difficulty and hoping to achieve solid results. This is incomparably better than just waving to your god for help.

Hum: All evidence requires an interpretation. Facts do not speak for themselves. What you have done is interpret them according to your worldview that starts with core foundational principles. How does “good” come from material matter? How does your conclusion of good originate from non-intelligent matter?

A: A fact is a fact by virtue of the feature that, in essence, it speaks for itself. It requires no wordy exegesis. When scientists reach what they can regard as facts, they smile. On the origins of “good” you could try a serious course in philosophy. Again this is a long story, but the basic challenge of the philosophers is that you can’t just derive an “ought” from an “is” – you have to do a lot of work. Start with Plato – he’s good!

Hum: The Holy Spirit is the third Person of the triune Godhead. As such He is the one true God and has all the attributes of God, being co-equal and co-eternal with the Father and Son.

A: This only compounds the mystery. Why a third stooge? Who needs him in the story? No, this is nonsense. That the holy spirit is a woman makes more sense – at least it suggests a nuclear family. Perhaps more to the point is a spoonful of seed, to get us from father to son, as it were, and suggest more exactly the genetic story I want to tell. Or a ghost – a *Geist* in the Hegelian sense – the *Weltgeist*!

Hum: It is pretty hard not to show a closed circle of ideas. As an atheist you have a naturalistic explanation of how things came to be. You use science to prove science. So what is open about that?

A: The question is whether the resulting circle is vicious or virtuous. Carl will recall the theorem I “proved” earlier on this issue. I shall not repeat it now.

Hum: The Biblical God is not a God of confusion. There is a correct way of interpreting His word of truth, as there is for all truth, for truth is very narrow.

A: Logic is a mixture of tautology and linguistic convention. Add an ontology and you get math. Its application in physics leads to the decoherence of quantum superpositions into an emergent classical reality, a consistent history. Go read.

Carl: Teaching people that they only have to answer to Jesus and not to their fellow human beings is immoral. Believing that you have only a fictitious sky god to answer to and not to your fellow human beings is immoral.

A: This interiorization of Christian doctrine is a reaction to an established fact about people, that they act more reliably in accordance with their inner voice than with the expressed wishes of their neighbors. So, to survive, the doctrine of Jesus had to invade the inner voice. If you can convince people that the inner voice of their superego (to exapt a Freudian term) is Jesus, speaking for God, you have a chance to win their souls. Once that dirty work is done, rationalists like us can see a beautiful mental mechanism at work. And exapt it anew.

Carl: You kind of believe in God? Or that, as Dan Dennett puts it, you have a “belief in belief”? In other words, not only is there nothing wrong with believing in lies about the order of the universe, it is actually a necessary virtue for some or all people to have?

A: I have a belief in belief. As someone said about mathematics, the question is not about the existence of (eternal Platonic) mathematical objects but about the reliability of mathematical objectivity. Belief can move mountains. If the mechanics of belief can be applied to more reasonable doctrines, the result can be better than letting anarchy reign. The trick is to get people to believe

in approximately veridical myths about the nature of the universe, given that the cold, hard truth is evidently too hard for the average Joe to take. All education does this by simplifying the messy truth about reality into a nice just-so story.

Carl: I do not have a zeal for godlessness. I have a zeal for the truth. I have a zeal against lies. Godlessness is something that simply is. Even those who believe in god, are godless, because he doesn't exist.

A: Of course you do, by your lights. I see it as my job in these exchanges to turn up the intensity of those lights a little, in the hope that a few still-gloomy corners may be revealed. Who or what is the disputed god here? If it is a passionately felt symbol for the reality of genetic influence on our lives, it may have a reality that survives the bright light and deserves celebration as a mental image of the Dawkinsian truth. All those prophets and saints were certainly worked up about something.

Hum: Evolutionary science is a science that works on events that took place in the distant past.

A: Making inferences about the past from evidence in the present is what every good detective is trained to do. It's what you do when reading the Bible, only you manage to get it all wrong because you have an insufficient grounding in scientific hermeneutics.

Hum: As for your statement that utilitarianism is a philosophy, it is what Darwin used to catapult his theory into the public limelight. It is an idea that is not highly prized today as an explanation, yet it started the ball rolling and it was used to justify the claims of evolution until very recent times.

A: Utilitarianism was the best British philosophy available when Darwin was writing, so naturally he used it. His scientific conclusions turn out to be valid independently of that rhetorical framework. Turned out to be so valid, in fact, that modern medical research depends on them.

Hum: Stuart Kauffman is just another subjective opinion trying to get you to believe that his subjective opinion is the opinion to believe.

A: You are spitting into the wind. Your subjective opinions, defended by direct appeal to your god, fail to cut it with me because your god citations are all from that discredited anthology, the Bible.

Hum: You and I can look at the same evidence and come to different conclusions, as has been shown in the past, and present, with evolutionary evidence, or for that matter, any evidence.

A: Sure, but I can explain why I'm right and you're wrong in a way that does not depend on the said anthology. Unfortunately for you, there's no short-cut explanation – go read the textbooks.

Hum: You come up with some wild premises to dismiss my answer that have no grounding in God's word. It is just one big smoke screen you throw up to dismiss something you are suppressing as true.

A: To use an old metaphor, God speaks to me and says I'm right here. This is a dangerous metaphor because people might think I've lost my marbles, but it's a good short answer.

Hum: As for getting the Bible all wrong, you would have to show me how I am using eisegesis instead of exegesis in the passages that I quote.

A: Working through all your quotations would be dire torture for me, and quite unnecessary. Your exegesis is apparently quite correct as a superficial and "mystified" (in the Marxist sense) reading of the texts. Your eisegesis is apparent in your fundamentalist literalism, however, in the unexamined assumption that your apodeictic dogmatism is the correct reading in a deeper sense. Because it excludes as either irrelevant or erroneous any more nuanced narrative for the divine thrust in ancient Jewish literature, it exemplifies the sin of idolatry, where the idol in question is the Bible itself. By all reasonable modern standards, the Bible more closely resembles a miscellany of mad rants than a logic textbook.

Hum: Utilitarianism was what they based the age of the fossils on, and the same system is still used today, even though it has been discredited.

A: No, it wasn't, unless you mean its use to dismiss the absurd suggestion that God in all his glory buried a few fossils to trick us. Today we use radioactive decay rates, molecular mutation rates, sedimentary accretion rates and so on, all of which confirm the same general timeline. Agreed, there weren't people on Earth a billion years ago to see the slime where it all began, but even if there were, who would believe them? Do I believe the creation myths of the ancient Israelites? No.

Hum: It is pretty hard to discredit something when your system of belief, naturalism, has no answers for the hard questions.

A: Who said my system of belief was naturalism? I have apparently rather unnatural answers for a lot of hard questions, but they are mostly rather hard answers, not likely to be understood by such narrowly read people as your good self, if you will excuse my hasty judgment as to the apparent quality of your education.

Hum: You cannot explain why you are right. It is based on subjective human thinking. Why are you the one who is right and says who? I appeal to the source of all truth, God, as He has revealed Himself to mankind in the Bible, and as such the Bible is objective, ultimate and absolute in that it is the Word of God. What is the highest standard you can appeal to? Answer: Subjective human thinking.

A: No, you are jumping to conclusions. My explanation of why I am right, in short, is that I utter God's truth. On my interpretation, my thinking, at its best

and when I reflect carefully and logically enough, tunnels through the layers of the personal self to the bedrock truths that command the assent of all right-thinking people and hence deserve the honorific modifier “God’s” as if in mute acknowledgment that such truth passeth all understanding.

Hum: So you just confirm what the Bible has been saying all along.

A: No again. The Bible is a lot of mad rants, as I said. God in all his wisdom has found much better ways to communicate with the more perceptive seekers after truth among his chosen people. Again, for the hard of understanding, “God” is a portmanteau term for those mysterious depths of reality toward which mere human introspection loses itself in awe and wonder, and which manifest themselves in our persistent tendency to seek to glorify the human race and work toward its continuation even as we humiliate and sacrifice our personal selves at the altar of the great “I Am” and “His” covenant with his chosen people (the human race, minus a number of lost souls, to follow the inspired lead of Jesus of Nazareth) as manifested in the gloriously narcissistic vision of God incarnate that shines across the generations of man. One should recall that “man” embraces woman in this timeworn trope.

Carl: I see nothing beautiful about the inner voice mechanism. And “exapt” is not in the dictionary so I have no clue what you mean by this.

A: Beauty is in the eye of the beholder. A scientist may regard such exquisite mechanisms, sculpted by the hidden hand of natural selection, as miracles of serendipity. As for exaptation, the term was coined by the late Stephen Jack Gould, who used it to describe the way evolution transforms an organismic feature originally shaped for one “purpose” to serve another, quite different purpose.

Carl: We have a mystery, and the average Joe can indeed “take” a mystery if they can be rescued from the brainwashing that denies the mystery in favor of an invented truth.

A: Let me clarify this. Deliberate misinformation is contemptible. Creative simplification that preserves the spirit of the truth can be authorial genius. When people talk of purpose or free choice or whatever else you may choose from the handy toolbox of folk psychology, you are gliding over mysteries still unfathomed. My sad experience, as one who likes to wallow in unsolved problems and revel in mystery, is that most people really don’t want to be bothered by all those things. They may nod in wry assent that some things are stranger than we may imagine, but does one really want to be tripped up by such esoteric pedantry at every turn?

Carl: People should be in a perpetual state of seeking the truth, all the while admitting that there are some truths we simply do not have. We should accept these as mysteries to ponder and work on.

A: Should they? I am quite sure that most people are confidently launched on a lifestyle in which radical questing for truth would be a major distraction, if not a symptom of utter cluelessness or mental decline. I consider my own such questing as a lack of ease, or a dissonant queasiness, if not an outright disease of the spirit.

Carl: I have always tried to tell believers that what they think is God, is in fact, exactly what you are referring to as opposed to the magic man in the sky. That is what I meant when I said that the best that we can hope for is to convert the soft believers into sort of abstract deists who see God as nature and that inner voice.

A: Goodness gracious! Consider how close your position is to diplomatic acceptance of gentle brainwashing.

Three Ideas

Carl: This thread should be a forum to discuss the following ideas:

- 1) Is the word atheism more trouble than it is worth?
- 2) Is it productive or counterproductive for atheists to attempt to organize and speak as one voice under that banner?
- 3) Should this group consider part of its mission to hold a position against the interest in, and experimentation with, things like non-religious non-supernatural meditation?

A: Re 1, Sam said: “A recent poll showed that about a third of young British Muslims want to live under sharia law and believe that apostates should be killed for leaving the faith. ... Sixty-eight percent of British Muslims feel that their neighbors who insult Islam should be arrested and prosecuted ... These people don’t have a clue about what constitutes a civil society. ... Atheism is too blunt an instrument to use at moments like this.”

British facts hit home for me, but others may work for other people. What remains is the political threat posed by militant Islamists. Defining oneself against theism, the rather widely held state of mind that involves believing there is a shadowy but powerful supermind behind the veil of appearances, seems utterly irrelevant to the threat. Agreed, the ultimate credibility of Islamism and similar madness depends on the credibility of an extreme and irrational form of that state of mind, but let us keep some focus. If people fighting Hitlerism had decided to tackle thuggish mindsets generally and called themselves athuggists, we’d all be living in a bleaker world now.

It seems to me that atheism is the wrong word. Since militant Islamism is a death cult, people who are not prepared to tolerate it are lifers. Not pro-lifers, as if abortion were the target, just lifers, who value being human and want to make the most of their life sentence, reasonably, without resort to fantasies about a post-mortem paradise.

Re 2, Sam said: “What is the argument against reason? ... The desire to know what is actually going on in world is very difficult to argue with. In so far as we represent that desire, we become difficult to argue with. And this desire is not reducible to an interest group. It’s not a club or an affiliation, and I think trying to make it one diminishes its power.”

Reasonable people who value their lives and do not want to lose them needlessly at the hands of mad cultists need to organize somehow to repulse the threat. But a gentlefolks club is not the way. We are fighting people infected with memes mad enough to turn them into bombs, and the only proper response is to disable them before they can explode among us. We must learn to do so without remorse.

To be clear, this is a ugly prospect. It is not like a gay rights parade campaigning for an alternative lifestyle. But beating Hitlerism was not a public relations campaign for disadvantaged minorities either. It was a bloody slog. Let us not blabber on about gods and myths here. We should be talking about life and death.

Re 3, Sam said: “Leaving aside all the metaphysics and mythology and mumbo jumbo, what contemplatives and mystics over the millenia claim to have discovered is that there is an alternative to merely living at the mercy of the next neurotic thought that comes careening into consciousness. ... I am by no means denying the importance of thinking.”

Living at the mercy of the next thought is part of being human. Whether it is neurotic is another matter, and one perhaps well medicated with deep meditation. Any fighter who really wants to win will try to stay calm. This much can be learned from a number of classic movies about cowboys, samurai, soldiers and others. Learning to stay calm whatever the provocation is a skill for which deep meditation is evidently a relevant training.

Transpersonal psychology and transhuman philosophy are ways to go beyond the world of ordinary thoughts. But do they deliver within the realm of rational concerns? Is there not the danger that they can serve like drugs that merely blot out any problems that prompted retreat in their direction? If neurosis is the symptom, it may be that a specific material configuration of the immediate human world is the cause. For example, it may be that the constant background threat of violent death at the hands of mad cultists is the driver. The practical answer is to lead an organized crusade to rid the world of the cultists, not to goof off into a dream state.

Meditation Again

Dude: I was using the term “monkey brain” or “monkey mind” satirically.

A: The term “monkey mind” is sometimes used among brain researchers and meditationists to refer to mental states based on activity in evolutionarily prehuman parts of the brain. Like many evolutionary constructs, the brain is something of a palimpsest, with some core features common to distant

ancestors, including a “reptile brain” that seems to govern basic states of feeling, a cerebellum that regulates body processes and balance and so on, which is comparable to that in other mammals, and a hypertrophied neocortex on top, our crowning glory, with frontal lobes that boost our mental life right out of the monkey league.

People act on the basis of various brain processes. When they are calm and reasonable, thoughts embodied in circulating paths of electrical current cycle through the thalamus to widely spread regions of the neocortex where finely differentiated states of mind are available to modulate behavior. When we are under stress and acting emotionally, however, these big loops of thought get short-circuited through the amygdala, which enables fast and stereotyped reactions that were selected in our primate past for their survival value. When we act in this way, stereotypically and emotionally, we are locked in the loops of our monkey mind.

Whatever else it may be in addition, meditation has the great merit that it can get us back out of short-circuit mode and into neocortical awareness, where calm and clarity have a chance to prevail.

Lin: Can you define what you mean by a dream state?

A: I am guilty of sloppy phrasing here. A meditation state is of course not a dream state but a fully alert state of heightened awareness. My defense is that it may look like a dream state to an outsider, and many inexperienced meditators do indeed drift off into dream states and even fall asleep. Without pausing for research, I am unable to give a rigorous definition of dream states, but they do involve unbidden imagery, weakening of logical coherence, and a propensity to block out the sort of veridical sensory input that defines our waking states.

The relevance of such states to an envisaged crusade against the cultists should be clear enough. They can hinder effective action. Shamefully, British colonialists in the Victorian era encouraged heroin addiction in China and India to pacify the natives and thus prevent any effective rebellion against British rule. Here and now, analogously, I fear that we in the West can all too easily pacify ourselves, with pampered lifestyles and multiculturalism, prescription drugs and meditative retreats, to such an extent that we lose our zeal to prevail against the fundamentalists.

Hum: The Bible is to be taken plainly where there is reason to do so. Of course there are other considerations in good hermeneutics, but God has spoken to us in language that can be understood.

A: No, the Bible is “to be taken” any way we choose, although of course the interesting readings are those based on some understanding of the authors’ apparent intentions. The speakers in the Bible are ancient Jews, for the most part, whose cultural background and presuppositions were so remote from our own as to beggar any naïve attempt to identify their tribal god with the genocentric god who illuminates my soul.

Hum: The “reasonable modern standards” you talk about are the liberal revisionists of the past two hundred years who have poisoned the well of thinking in most secular intellectual scholarship.

A: Indeed, they have saved Bible studies from the intellectual death of fundamentalist absurdity. With your logic, you have effectively centralized all the problems and paradoxes of your worldview into a concept of God that is rationally indefensible. In your worldview, God is a singularity that transcends all human comprehension. Atheists leave their problems out in the open where we can deal with them methodically, step by step.

Hum: Catastrophic events create fossils and a world wide flood explains why there are so many. Fossils need rapid, pressure-creating forces for fossilization to happen.

A: No reputable scientist disputes that fossils are the remains of ancient creatures that became preserved as a result of natural forces. No scientist with any intellectual competence disputes that the fossil record, taken together with everything else we know about geology and genetics and so on, offers a striking confirmation of an essentially Darwinian story.

Hum: Dating methods are subject to various assumptions, such as that the rate of radioactive decay remains constant, the starting conditions are known, and the systems were isolated.

A: Are you going to dispute nuclear physics now? The constancy of radioactive decay rates is underscored by everything we know about quantum mechanics, post-inflationary cosmology, stellar nucleosynthesis, reactor engineering, bomb development and more. Get thee to a physics library!

Hum: Your foundation of belief lies either in the natural or supernatural. Which is it? Are you not an atheist?

A: Not either/or. The concept of nature and its opposite find common ground in reality, which finds common ground with potentiality in the quantum omnium, on which read Roger Penrose and others. I am an atheist in a sense analogous to that in which the philosopher Hegel was, on whom read the 2007 Templeton prizewinner Charles Taylor.

Critiquing Sam

Soja: If Sam Harris is unable to appreciate the positive role played by religions, he should at least give a more detailed explanation for it.

A: I fear the task may be too much for Sam, who has other issues to deal with. In fact, I see this as a task to which I could contribute. I see a landscape where geocentricity shines like a guiding light over much of our inner lives. This explains much in religion from a Darwinian and Dawkinsian perspective, and makes religion much more defensible to those who wish to see human life regulated in visible accord with reason.

Soja: As a Christian, I happen to believe in virgin birth, by faith.

A. One hopes that Christians will soon see that the virgin birth canard derives largely from poor translation and has nothing whatever to do with the moral status of Jesus or with the merits of Christianity as a foundation for a good life. Cannot you as a scientist see that?

Soja: The image of God in Buddhism is expressed in negative terms – *Shunyata*, The Void, The Emptiness, and so on. The inability to describe God with images has been expressed by mystics of all religions.

A: Such terms for God are fine, and I recall them also from the Kabbalah tradition. However, consistency requires that we follow through here. The image of God as a heavenly father is already too specific, and only betrays the geocentric explanation that I am now juggling in my mind like a new toy. The image of God as a trinity of personages borders on the absurd, whereas the image of the One, merciful and compassionate yet eager to punish the infidel, is a horror. So the Abrahamic religions all commit the philosophical sin of attempting to reify, or excessively concretize, the ineffable. The Mosaic inference “I am, therefore He exists” is invalid.

Soja: Atheism has no answers to the deeper aspirations and inclinations of human beings. It is not the breakthrough that civilization has been waiting for.

A: I agree.

Soja: What good does it do to rob people of religion, since human life encompasses much more than what reason and science alone can offer, and serious believers do not set aside reason or science in the practice of their religion?

A: Atheists will not rob people of religion, any more than grinchers will steal Christmas. The human desire to celebrate the eternal mysteries, to come together in holy joy to acknowledge the fact of their incarnation as children of God, is inextinguishable.

Soja: The problem today is not that religions are bad. The real problem is that the real religion the vast majority of the world practices today is narcissistic hedonistic materialism. For most believers, religious affiliation is no more than cultural identity, and for some no more than social activity.

A: Yes, narcissism has descended from the shining image of Jesus shared by multiple believers to mirror images and photos of ordinary people who have the temerity to be unashamed of themselves. Hedonism has mutated from a pagan predilection for sensual pleasures to the birthright of every constitutionally correct American citizen. And materialism has been promoted from a philosophical counterpart of idealism to a default philosophy for every disillusioned scientist. And religion, once so proud, has become a social service for people who need prepackaged identities and social lives. Like the owl of Minerva, the “problem today” flies at dusk.

G.W.F. Hegel: When philosophy paints its shades of gray on gray, a form of life has grown old.

Soja: I note that you have not read the Bible. So where is your crusade against the God of the Abrahamic faiths coming from?

A: I have read many parts of it, more than enough to know that no reasonable person would get any joy out of reading it from end to end, like a novel. Parts of the New Testament I find inspiring, most of the Old Testament I find merely quaint. I haven't read Newton's *Principia* either, but that didn't stop me teaching Newtonian mechanics to hundreds of students.

Soja: The hard challenge from religionists of the Abrahamic faiths would include me. Since I am not unfamiliar with the gods of the non-Abrahamic faiths, it might take a little more than parroting Deepak Chopra's words about the fetish of the Abrahamic God.

A: Thanks for the reminder that other gods still need to be addressed. By the way, I didn't need Chopra's help to see the need to put AG in a box. But do you think the others raise new problems of principle?

Mohandas K. Gandhi: Truth and love will always prevail.

Carl: In all of Sam's time spent on meditative retreats, he seems to have found enough time to contribute more than his fair share to the cause of spreading argument about religious fundamentalism.

A: I see it the other way around. A young man writes a naïve but passionate book about the evils of religion and is met with such a big response that he can hardly bear it. Fawning sycophants, death threats, security guards, the works. What would you do? I'd head straight for a meditative retreat to get some peace and quiet. His talk of abjuring the label and going under the radar suggests just such a response.

Carl: He has contributed one of the most important new ideas to the movement. That of the focus on the moderates as the enablers.

A: This is a dangerous idea, like Bush 43's idea to attack not only terrorists but also the regimes that shelter them. Your talk of the movement rings warning bells for me. It recalls the foundation of recent Arabic fame. You're talking about a frontal assault on the sentimental source of the meaning of life for billions of people. I say leave the moderates out of this.

Carl: You are making it sound as though you took Sam's speech to be a suggestion that atheists should go softer on religion, and instead, try meditating the problem away. He did not suggest any such thing.

A: I suggested that the meditation has a fine instrumental rationale as a means to get calm for the fight, like unforgiven pale rider Clint Eastwood, most of the Seven Samurai, and that black guy with the 40 mm grenade launcher in *Apocalypse Now*.

Carl: I was at a party the other night. One guy was reading the Hitchens book. Someone else said that she had read Sam Harris' book and she thought that he was too over the top and abrasive and insulting.

A: The Hitchens books is good. Better written and more anecdotal than Harris, juicier and better written than Dawkins, shorter and better written than Dennett. I was ready to be disappointed or even embarrassed, having grown in the same Oxford milieu as he did, but I was pleasantly surprised. It's hardly science or philosophy, of course, but well done anyway.

Carl: Are you suggesting that Sam's interest in meditation is not at all scientific curiosity but rather an escape from his new found fame?

A: I would say it's both. He would surely say it was scientific curiosity, but it is convenient that it meets the other need too. No shame on him, of course, quite the contrary.

Carl: Moderates are blind to their culpability. They need to be jolted awake and made to take responsibility for supporting beliefs that they simply haven't thought too deeply about.

A: Jolted awake is one thing, told that what they believe is contemptible ripe bullshit that puts them at the mental level of believers in the tooth fairy is another. I see no merit in insulting differently abled people.

Carl: Are you saying that there is not a movement, or there should not be one? Is it the word movement that bothers you?

A: Well, yes, it sounds subversive. Was there a movement to destroy Hitlerism? No, there was an outraged majority, a general, almost universal sense that it was time to stand up and be counted.

Fundamentals

Hum: You are practicing eisegesis, not exegesis.

A: You are too, probably. We all do, in most of our efforts, because reading authorial intentions is always conjectural. I am doing my best with the Bible not only to understand what the authors apparently intended but also how we, here and now, can reflect from above on their crude views. I think I succeed not only in exegesis at the level of high ideas but also in meta-exegesis at the level of reflection thereon.

Hum: The God revealed in the Bible is immutable, He does not change.

A: This makes God analogous to a mathematical concept, like the set of all sets or the category of all categories. I shall refrain here from my homily on the famous antinomies of set theory and of pure reason. Let me merely point out that any value there may be in this concept of God has been rescued by Spinoza and Einstein. God thus conceived is unhelpful for personal salvation, of course.

Hum: Consider yourself taught, rebuked, and corrected.

A: Thank you. I have indeed been taught something more about the logic of fundamentalism. The rebuke is for me like a blessing from the true God who tells me to keep fighting the fundamentalists until they admit that the Bible is just another history book, albeit one with an ambitious claim. The canon that reveals the true God for me is a long list of science books, prominently featuring works by Darwin and Dawkins.

Hum: God transcends human understanding because He is all knowing.

A: I have a mathematical metaphor for this statement that I fear you are not equipped to appreciate. It renders the claim vacuous. You can build a viable approximation to the concept by relaxing the word “all” but then you find yourself with a less than universal God that would serve at best for life on planet Earth. This concept, I submit, is sufficient to fashion a conceptual box for the Abrahamic God.

Hum: The Bible is a revelation from God to mankind throughout the course of history.

A: It may seem that way to you and your peers, and it may have seemed that way to the bishops who signed off on it all those centuries ago, but to me it has a more limited significance. Standing on the shoulders of giants, I see a wider landscape in which this book is one among many that together define our civilization. But we can agree that it is a core document to help us understand the course of Western history for the last two thousand years, together with the works of Plato, Aristotle, and Euclid.

Carl: Why does organizing as a group bother you?

A: Because this must be mainstream, or it dies for Sam’s reasons.

Carl: People who believe in the tooth fairy are called *children*.

A: Quite. Adults at that level are mentally challenged. As you say, people tried health warnings for smoking but suggesting it was uncool did the trick. Here, we could be insulting but suggesting it’s unholy may work better.

Carl: It sounds to me that you are in almost complete agreement with Sam’s points.

A: Yup.

Hum: I think the presuppositional approach to apologetics is rock solid. All worldviews are a web of ideas held together by core foundational beliefs, and the test of these beliefs is how well they answer what is out there (metaphysics), how they know what they know (epistemology), and what difference it makes (axiology).

A: My acquaintance with presuppositionalist apologetics has been dismaying. But the worldview approach here is so close to my own logical philosophy that I feel compelled to make a statement. In my technical book

Mindworlds, I describe worldviews as consistent sets of statements modeled in momentary states of a world. These sets of statements can sometimes be organized as theorems derived from core statements, or axioms, and worldviews can sometimes be stacked into sequences such that the set of true statements grows monotonically. This creates a consistent history, just as described in foundational quantum mechanics, satisfied in a classical world. In this picture, a classical world emerges through a random temporal process from a quantum omnium.

Hum: How can logic come forth from a random, blind, chance process? Where is the evidence that evolution is taking place today or has ever taken place in the past? Time is your supposed magical ingredient.

A: In my view, reality evolves in time through a discrete quantum process of symmetry breaking. Qubits that superpose 0 and 1 evolve into classical bits with values 0 or 1 as the quantum clock ticks. From this evolution of vast numbers of qubits a classical world emerges, in which consistency holds sway, in which 0 and 1 can be used as truth values in a Boolean algebra, as in any computer. In the opinion of quantum guru David Deutsch, this evolution happens in all possible ways to form a branching universe, in which each individual branch has a consistent history and represents one of the possible states at a given time of the huge quantum omnium. How and why we end up in just the branch we do is a mystery, and looks random in the physical theory. An apologist for God might say He leads us along the right branch.

Hum: Let's try a test. "Salvation is found in no one else, for there is no other name under heaven given to men by which we must be saved." (Acts 4:12) Let's hear your explanation.

A: For various reasons, the ancient Jews were a people who were constantly looking for a messiah to lead them out of their latest patch of trouble. Jesus, by the grace of the genocentric god, fit himself into this role and led his followers to understand he was the chosen one. As I explained in a previous Sam thread, this required Jesus to be a sort of transcendental solipsist, for whom his own ego was unique and universal. As he thus saw things, only by invoking his own magic powers could other men be brought into the transcendental company. Think of the sky god in heaven whipping up a tornado, where the twistor that reached down to earth was Jesus, now glorified as the incarnation of the said sky god, and think of men wishing to be raptured up to that heaven. Jesus says, in effect, hold it guys, only through me.

Hum: It is extremely helpful in salvation or any other matters to believe in a God who does not change in His attributes and character. To know that God does not change is to know that He does not lie.

A: The fact that something may or may not be helpful does not make it true. That confusion was prominent in the American pragmatist philosophy of a hundred or so years ago, and was also dangerously close for the British

utilitarians of whom we spoke previously. An eternal god, outside time, can help us get our thoughts in order, just as an eternal set of counting numbers (the Platonic universals 1, 2, 3, ...) can help us count, but such a god cannot also be a personage in time who listens to my thoughts and rewards my humility, or at least not unless you are prepared to play fast and loose with logic, and that I know you would not wish to do.

Hum: You certainly are confusing me in exactly what you do believe. Maybe you can get the hay out of the loft so us common folks can feed on it. If you cannot explain what you believe in terms that are understandable, in effect you have said nothing. What is the “god” you believe in?

A: Well, I confuse myself too, often. The basic insight that gets a concept of god going for me is the idea that subject and object are equal and opposite. Wherever there is an object there is a corresponding, complementary, coequal subject. But in our everyday ontologies we recognize this complementarity only very spottily. Most of the objects we recognize are limited and ordinary, with stable properties, whereas most of the subjects in our everyday worlds are associated with living organisms and are polymorphous, quick to change, hard to classify, and rather mysterious. Technically, my view is a kind of panpsychism, which needs a lot of careful argumentation to carry through properly.

The key subject word is “I” as in the Mosaic auditory phenomenon “I am that I am.” Moses inferred from the phenomenon that the A-God had spoken to him. A modern observer might more prosaically conclude that the “I” of Moses had spoken to itself but somehow spooked itself. For example, the brain hemisphere responsible for speech had spoken to the other one, which got spooked. But whatever, we each do something analogous. My own polymorphous subject reflects the universe for a brief moment and then retreats to the here and now. My everyday self then says I touched God for a moment there, wow! With speeds high enough to dizzy us (but slow by light-speed standards) our souls zip up and down the scale like this and reflect everything we interact with. All those reflections, like shadows, are stored as thoughts. We then spin up big thoughts from little ones, and so on up to god concepts.

Hum: When I refer to the word “all” I mean every possible scrap of knowledge that is possible in understanding anything. Since you are the scientist, I will leave the mathematical understanding up to you.

A: Your definition cannot be made precise. The analogy in a toy universe of sets makes this clear. Consider the set of every possible sets that is possible in “setting” anything – member of itself or not? Yes – no – does not compute – error. Bertrand Russell discovered this paradox over a hundred years ago. Using analogous reasoning, Kurt Gödel proved that no formal system (defined as bla bla) can prove “all” truths of arithmetic. Your god is bound by logic too. God has a hard time understanding himself. If God can be less hubristic, all is well. Hence my geocentric god, which is small and humble

enough to survive, yet big enough to shoulder the “chosen race” burden of the A-God.

Hum: Logically, the Bible cannot be both a revelation from God and not a revelation from God. We are both stating contradictory things. The question is who is right?

A: Here a brief excursus on denotational semantics, with special reference to Saul Kripke, is relevant. Kripke says names are rigid designators, by which he means they refer to the things they point to independently of the properties of those things. But in extreme cases this mechanism breaks down. If there is no such thing, you cannot conjure it into existence just by naming it. In traditional philosophy, things had accidental and essential properties. Names succeed in referring independently of accidental properties, but even a name that has been maximally purified of descriptive crud cannot do without all essential properties.

So, the Bible claims to be a revelation from God. Excuse me, “God”? Yes, the eternal, omniscient, omnipotent spirit in the sky who just happens to be male. Oh, yes, that god. Is he a quantum or classical god? Does he understand himself or not? Is he one or three, circumcised or not (if so, by whom), gay or straight (so where’s the woman)? And so on. *Reductio ad absurdum*, I hope you will admit. The conclusion is that the Bible does not succeed in referring to the entity to which it supremely purports to refer, at least if the mentioned properties are regarded as essential, for the simple reason that no such entity can exist in accordance with the logic we understand. Therefore it cannot be a revelation of that entity.

However, the Bible is an authentic revelation in another sense. It is a convincing story of a genocentric “chosen race” god that has been blown up in the telling to hubristic excess. The biblical god is a magnified father figure. The cosmology surrounding the figure in the story is just god getting above himself. Created the universe? From eternity to eternity? This sort of hyperbole is familiar in the sycophancy surrounding some human rulers. I seem to recall that the late North Korean dictator Kim Il Sung boasted a similar resumé.

Hum: He has revealed it to us: “In the beginning God created” (Genesis 1:1).

A: Cosmology is a highly technical science with many deep ideas. My favorite creation myth is that the universe we know (the big bang bubble centered on us) started as a quantum fluctuation from a state of perfect symmetry. Moment by moment, the symmetry fell and the information content of the universe rose, so that now, 13.7 billion years later, it contains something like 10 to the power 123 bits. This extended classical state is a quangled subset of the omnium. I despair of explaining all this briefly in easy words. ☹

Another approach is to recognize explicitly the complementarity of subject and object from the word go. Hegel did this in his dialectical logic. In the

beginning was Being, and Being was Nothing, and Nothing was. Nothing was in the beginning with Being. All things came into being, and so on. Hegel had the idea that things came forth into temporal existence from the unstable primal complementarity of being and nothing (or 0 and 1, say). After a long and wordy journey one gets to art, religion and philosophy, which form the crowning triad of his dialectical taxonomy. All this came crashing to earth when Karl Marx inverted it. The moral of my tale is that there are many ways to make a universe, and the Genesis story is not the best.

Carl: Give me more on “suggesting it’s unholy.” Tell me more about your “God”.

A: Many people have remarked that a genocentric god is potentially racist. A tradition of celebrating a gene line, such as the Jewish line in the Old Testament, can hardly fail to be divisive and draw flak from the neighbors. Jesus did his best to clean up the story by universalizing it but got crucified for his effort. Now, of course, we can celebrate the human genome independently of its regional variants, and this gives us a warm and living tradition of worship that suffices to endorse, encourage, and comfort the birth, marriage, and death of billions of people. The unholiness comes with the racism, and with discrimination against unbelievers. Any religion that fails to embrace all humans or seeks to impose unreasonable requirements on them is unholy.

My generalization of the concept of god is to accept the full polymorphism of the subject (see above). If each of us hosts an “I” as the local incarnation of god, with similar incarnations all around in other people, the multiple reflections of “I” in the big wide world make a really polymorphic god that dances on the outer edge of any logic we can devise. The union of all these incarnations is God, the big one, who reflects the consistency of the classical universe we inhabit. All around us is quantum chaos, and only the grace of God keeps us clear of it. We walk along a narrow branch in the quantum multiverse, with God as our guide. But all this flies too high, too close to nonsense, and down here on planet Earth where creatures live and die we really need an earthier god. Here is where the god called Gene makes his/her home.

Gene is a local deity, a human god, not worth praising too highly. But we are humans, with human values that reflect our commitment to doing all we can to help our relatives in this (hugely) extended family to progress toward a brighter future. We celebrate our solidarity in upholding these values in many ways, but we do so most visibly in religious services of all kinds (perhaps even including surfing and partying). We want to do so and we need to do so, or life soon loses its zing. I say let people praise their gods, just hold them to the clearest possible semantics when they try to defend them!

God

An old concept of gods was that everything that changes in time has a god, namely the ideal or target thing toward which it changes. For most things, the

god is too trivial for words, but for people it glorifies their aim or purpose in life and helps them confront the pain and finality of failure and death. The great monotheisms consolidate such little gods into one big one, which creates the familiar problems.

I say we should redomesticate and defetishize the concept of gods by refusing to condemn little gods. Little gods may be debased or pathetic or ignoble or even evil, but they pose no metaphysical threat to reality. Recognition of gods is a way to endorse the mystery or inexplicability of the things attached to those gods. If the god of a speeding bullet is the body into which it will embed itself, the mystery is the standard one that the future is never certain and the process by which it unfolds is scientifically inexhaustible. The god of a group of Islamists presents (in the medical sense) as a sort of paradise in which exploding body parts find celestial virgins. Again, no metaphysical threat, just rabid nonsense and the standard residual scientific inexhaustibility.

Given such a defused concept of gods, the Abrahamic god is a biggie, no doubt, and historically unique, but still no more than a fantastically conceived goal for a stream of people. Since that stream of people has now reached global proportions, we can begin to talk of a species goal. Perhaps here we have located an attractor (in the sense defined in nonlinear dynamics) for the biological species *Homo sapiens*. Perhaps we have even zoomed in on the process of speciation in action. Perhaps all animals have gods that drive them to reproduce away from their neighbor species toward a unique goal.

Be that as it may, it is clear that the universal goal, the end of time in the cosmic sense, is beyond human compass. All I have read about humans colonizing galaxies and so on is very unconvincing. Why should bags of carbon-based macromolecules with subteranode neuronets and odd features like toenails colonize the universe? No, leave that to the angelbots. As Clint Eastwood said, a good man knows his limits. We are wonderfully adapted to thrive in the terrestrial ecosystem and well enough challenged with the task of keeping it inhabitable long enough to create (by some combination of sex and technology) our successor life-forms. For this purpose, the god Speciator (a.k.a. Gene) may be enough.

Holy

Traditionally, something holy is somehow sacred and deserving of respect or even veneration. To be sacred is to be somehow inseparable from the relevant god. In this sense, people are sacred when their right to life and liberty and a natural death in the bosom of their personal god is respected and protected. A god is holy, then, when its status as a locus of infinite value and ineffability and so on deserves to be upheld. As to how that can be the case, I see no reason not to rest content with a naturalistic bootstrap explanation of the sort we know from numerous scientific stories. We know gods by their fruits, and a god with better fruits is more sacred. In the Darwinian jungle of all possible

gods, the A-god seems to have won among humans, but the holiness of that god is not a given. Absolute power is absolutely corrupting.

Anyone who lives by noble ideals that command respect from all right-thinking people, for reasons that may have entirely natural explanations, may be regarded as holy. Even cows in India, who peacefully chew cud and make dung for burning, may be holy. Why not? Certainly, no more restrictive semantics for the word “holy” can survive the anthropic critique of semantics that Ludwig Wittgenstein developed once he outgrew his days as a logical messiah.

Returning to the present, anyone who zealously promotes high ideals that lead to human betterment has as good a right to the concept of holiness for their goal as the traditional religious figures. Something is holy when it deserves respect that verges on awe and wonder, and people who concern themselves intensively with such things deserve to be called holy by association. In this sense, Einstein is a more convincing holy man than contemporary religious figures. Even Al Gore is holier than most priests.

Lin: Reading your words is like reading *War and Peace* in Hebrew.

A: Sorry about that. One forgets how far into the labyrinth of the soul one can be forced to retreat in the course of seeking to explain this mortal coil.

Dude: I think I can see why you have a soft spot for free will, Buddhism, and Sam Harris. If you strip away all the science-based conjecture in your theories, you get down to the same foundation as Christianity, Islam, Buddhism, and Hinduism, the belief that in “you” there is an immutable, immortal something that is special and unique in all of creation, that is the “I”. In my view, there is not one iota of evidence in religion or science of the “I”. It is simply the wishful thinking of mortal beings.

A: This is the key point. The seminal statement for modern Western philosophy is *cogito ergo sum*. As a conscious being awakening to a phenomenal universe, this is the first act, to realize one’s own existence. From a first-person perspective, all the rest is up for grabs. The whole of science and common sense emerges only after one has gathered one’s wits and recalled an identity. Holding that first moment and living in it is as close to eternal life we can ever come. It is not wishful thinking. It is before all wishing.

For an analogy, think of your computer booting up. For a few seconds you get a black screen with lots of geeky technobabble on it. If you go in there, you can totally change what the machine does. Another way to glimpse the eternal soul is to let your thoughts get bigger and bigger, as if eternity were a very long time. What happens is that finally you fall right back to square one, which is just as real as your biggest thoughts were. In the computer analogy, this is like trying to get outside your computer by going up through a network file structure. You go up and up to ever higher directories until suddenly you come right back to the desktop.

I am convinced by Douglas Hofstadter's claim that the self is a strange loop. One way to imagine the loop is as a timeline closed into a circle, recalling Nietzsche's concept of eternal recurrence. We exist not only as particular beings in time but also as universal beings in eternity. This is not a dual existence but the complementarity of one and the same reality, seen either from inside or outside the circle. Sorry, this is hard to grasp.

Dude: I do have a soft spot for your robot forms of the future. It is highly unlikely that human beings in our current forms will be able to do much in this universe.

A: We can prepare successor beings that are one step better. This is a transposition to a species scale of what any ordinary parents hope for.

Time and Mysticism

Hum: Sorry, I don't buy into the idea of Jesus being a solipsist. To the contrary, Jesus denied selfish ambitions and vain conceit and put others above Himself, coming to die on behalf of His people, the elect. His body was as real as yours or mine.

A: Jesus saw God as a perfect reflection of reality and himself as united with God. If $G = R$ and $J = G$, then $J = R$. As such, J could afford to put others above himself and die for his people. His body was as real as R , just like the bodies of all of us who subsist in R .

Hum: Since God created time when He created the universe, He transcends time and is independent of it. He placed it in effect by giving us the measure for it. That is how we get our seven day week.

A: This is Augustine, who was a great philosopher. Most modern physicists have accepted that time as we understand it started with the Big Bang and is measured by post-BB physical processes. We accept the seven day week as a polite nod to tradition, just like we name Wodensday and Thursday after the Nordic gods Woden and Thor.

Hum: God is an infinite Being who is the source of infinite knowledge and wisdom. That is the difference between your make-believe god and the only true and living God who has revealed Himself in the pages of Scripture. Your make-believe god is too small to be worshiped and appreciated as the source of all truth, as you recognize further in your post.

A: The source of infinite knowledge and wisdom is ineffable, beyond knowledge and wisdom, beyond words like "He" and "I" or human customs like Sunday services. I have no make-believe god, just a theory about how the ancient Jews concretized the ineffable into a "chosen race" totem. That god, though sincerely adored, was a make-believe god from my perspective, unworthy of worship, as you say.

Hum: What you are doing is making the God of the Bible the kind of god that you would choose to understand a god to be, not who He is.

A: Not me, the ancient Jews. In effect, they were carried away by wishful thinking. The evidence is clear enough to make a compelling case, in my opinion. Naturally, the onus is now on me to persuade the wider world that my interpretation cuts ice.

Hum: I'm neither a mathematician nor a scientist, but I'm not stupid either. You have not explained anything to me, for if you can't make it understandable you may as well say nothing.

A: No, indeed, you're not stupid. But your reading is excessively narrow, evidently. Get your head out of the Bible and study some modern science. There are healthy modern texts aplenty that can begin to clear those cobwebs and give you a new lease of life.

Hum: What kind of logic equates the eternal Being with nothing? Do you equate your existence with nothingness? How can an eternal Being be nothing? Since He always existed He is, and that is what He was conveying to Moses at the Burning Bush. "I Am that I Am" is God who transcends time and is always present.

A: Well, dialectical logic is controversial. Lenin said "dialectics is the doctrine of the unity of opposites" and most logicians regard it as absurd. As for Moses, try to imagine what happened. He stands there alone under the desert sun and has an experience that a modern psychologist would regard as an audiovisual hallucination. What he made of them is history. We are wiser now. Philosophers have accepted the fact that "I am" is somehow always present since at least Descartes.

As for transcending time, see Immanuel Kant's immortal *Critique of Pure Reason*. In short, the phenomenal ego is bound by the phenomenal categories and the forms of what he called sensuous intuition, one of which is time, but the transcendental ego is not bound by such categories and forms. Some later philosophers, in particular Hegel, objected that the distinction between phenomenal and transcendental egos is obscure, so why not just ditch all the transcendentalia. Next came Karl Marx.

Hum: Logic applies to reality, but there has to be some undeniable first principles. And the granddaddy and designer of them all is God Himself. He sets first principles in motion.

A: A sound working principle in science is that if something purports to explain everything, in fact it explains nothing. It adds no value, is redundant, is vacuous.

Hum: Certainty only comes with an infinite and certain mind revealing it to you. That is the foundation of all truth. Without the foundation what truth could ever hold up?

A: The infinite and certain mind is your own, as it appears from the inside. Outside that, all is ineffable, beyond words, and no foundation for anything but awe and wonder.

Hum: What do you support your foundation on, science? How often has it been proved false? Truth has always been there, whether you find/discover it or not.

A: The scientific method is our most reliable instrument for discovering truths about reality. Consider the Standard Model in physics, if it is not too hard a rock for you.

Hum: Atheism is an attempt to undermine the foundation. You don't have all the answers, but your bent is to put yourself in the position of God and determine what is good and right.

A: I am undermining the foundation of presuppositionalism because the presupposition is false or vacuous. I build on the rocks of science and philosophy.

Hum: Truth is narrow. $2 + 2 = 4$ is narrow for $2 + 2$ cannot equal anything else but 4 and still be true with reality.

A: In arithmetic modulo 4, $2 + 2 = 0$. In arithmetic modulo 5, $2 + 2 = 1$, and so on. Study more math before you try to tell me about truth.

Hum: Regardless of the names we call the days, the seven day week is the principle that God put into effect and it is the standard that the world runs on.

A: And the division by 60 for hours and minutes comes from ancient Babylon, so shall we all hail Nebuchadnezzar?

Hum: Christianity is the only worldview that harmonizes with reality.

A: Let me quote a few words from the introduction of a book by an old Oxford colleague of mine, the mystic Andrew Harvey, titled *Teachings of the Christian Mystics*, which I just happened to be reading today:

There is nothing more important ... than an authentic and unsparing recovery of the full range, power, and glory of the Christian mystical tradition. ... What is needed is the flaming-out, on a global scale, of an unstoppable force of Divine-human love ... At the core of Christ's enterprise is an experience of this fire and the revolutionary passion of charity that blazes from it. ... The real Second Coming will be the birthing of Christ-consciousness in millions of beings who turn, in the Father-Mother, towards the fire of love and take the supreme risk of incarnating divine love-in-action on Earth. (pp. xxi-xxxvi)

Andrew always had a rather florid way with words, but something resonates with me there. Christ consciousness reflects a take on reality that I can begin to appreciate. Indeed I modestly hope to approximate it myself sometimes. Naturally, this has very little to do with the dry dogmas propagated in the name of Christ by Biblical literalists who fetishize the letter but lose the living truth.

Hum: You cannot even explain where immaterial concepts come from in a world that supposedly has its origin in matter. How can intelligence come from non-thinking matter? Where are you preconditions for intelligibility?

A: This challenge directed at the interlocutor to explain, in simple words for a lay ear, some of the deepest questions of philosophy is a rhetorical tactic of no merit. If anything, it merely betrays the neurotic uncertainty of the challenger, as if life without pat answers to such questions were unbearable. Any short and simple answers to such questions are likely to be wrong. The authors of the Bible were struggling to find answers too, like most honest people in the centuries since their time, but their appeal to God was in effect an empty appeal to authority, hence not a satisfying answer for someone with an inquiring mind.

Hum: I've been reading a little of your book *Mindworlds*. My opinion of what I have read so far of his book is you do not have the answers.

A: My book *Mindworlds* is an attempt to convince professional philosophers and others that my approach to consciousness can stimulate scientific progress. It was no part of my intention when crafting its parts to try to enlighten seekers after spiritual comfort. I prefer to leave that sort of thing to Andrew and his mystic friends.

Hum: Baggage is a given for any one of us. That is why we need an objective perspective.

A: Let me try to cut down the baggage. The Cambridge mathematician G.H. Hardy once said that all mathematicians are isomorphic, by which he meant not only that they think alike but that their Platonic souls were equivalent up to isomorphism.

Similarly, we might say that all those who incarnate Christ consciousness (CC) are the same person, deep down, modulo some kind of equivalence. Their everyday personalities are like glove puppets on a multi-pronged godhead. So when I am in my CC persona, everything I say is objective truth, which may not be the case when I am just AR the glove puppet. However, if I invoke CC like that, the burden is on me to prove that it was my CC persona talking, not AR.

The same burden is on the Biblical fundamentalist. Quoting the Bible is no way to prove a statement, any more than quoting Alan Guth is a way to prove that the inflationary scenario is or is not a neat account of some features of the primordial universe. You don't get down to rock-solid truth that easily!

Doggerel

O, faith, ripe ordure, leave us not!
Sweet smell of dreams sublime!
Pray tell us how our limbs will rot
And fill our brains with slime!

The Bible doth our sins condemn,
Our loathsomeness revile.
But reason, yeah, with shining pen
Fights back, in rampant style!

The minions of the Bible God
Will rant and rail and keen,
But reason wields the inky rod
Prevailing o'er the scene!

Oh, sublime martyrs to the truth!
Yeah, Darwin and our Dick
Stride strong and logically forth
And make those minions sick!

Answer this question shall we not,
What meaning to this life?
But we shall pay for't, coin in slot,
And make an end of strife.

Science doth the answers hold!
Yet nothing is for sure.
We struggle on thru dark and cold,
And one day find the cure.

Evolution is a steadfast rock
Against a sea of fools,
For when we fight the Bible block,
Our quiver brims with tools.

Tho there seems no end in view,
Our purpose will prevail.
Yeah, best and finest will anew
Earth's banquet board regale.

On Lethe's door will come the knock,
Bright light will pierce the veil.
All doctrine will that shining mock.
Oblivion will prevail.

Oh, God, Thou rock in times of old!
Where art Thou now, when faith turns cold?
We presupposed Thine existence,
And now it seems we must repent!

So sorry, God, for presupposing
That Thou art because we go sing.
This was logic in a twiddle.
Now we see it's all a diddle!

The bards are right, we are alone,
Until the scientists us clone,
Unless the aliens drop in on us
And give our worship a new bonus!

For then we can all hail E.T.,
Bow down before the V.I.P.,
And grovel in humiliation
Till Grim Reaper calls end station.

Lo, Darwin is the prophet bright!
He leads us from the awful night
Of prostration to a dead Messiah
Who cast himself the Jews' pariah.

And Sam, dear Sam, the ardent boy
Who leads us on to godless joy!
With Dick and Dan and Chris and all,
So sorry, God, we're on a roll!

My thoughts evolve, they show the way
My demons fight, Dan Dennett say.
And so it is amongst the mammals.
We fight, and die, and strength prevails.

Yet all seems patterned and well framed.
My thoughts make sense, by laws untamed.
I feel I'm free to pick and choose,
Just like the cells in primal ooze.

Yes, free and shaped by cause unknown,
Both me and beasts, down to the bone.
This is no predetermined matter,
But growth unbound by a creator.

We make ourselves, opinionate.
The world takes shape and seals our fate.
Yes, both at once our fortune reaps,
A quantum dance with tiny leaps.

A mathematical disclosure
Is complementary closure.
We are, we aren't, we're both, we're neither.
This dialectic is a jiver.

Yet so it is, no God, no sentry.
Just us and stuff and geometry.
That's all it takes for right and wrong
To grow well formed within our throng.

There's more, too much for mortal verse,
 But just enough for prose or worse.
 I shall not tempt you with a look.
 I'll leave that for a longer book.

But let us pause to think on Christ,
 So glorious he, but crucified.
 His thoughts were fervent and quite good.
 But scarce reflected in his brood.

We need a rebirth of those feelings
 To save us from collapsing ceilings.
 But what we get is Bible verses
 All that crud and so much worses!

Let's be sincere and honor science.
 It helps us feed our hungry clients.
 It may not answer all our quibbles
 But it sure keeps down crazy peoples!

Back to Work

Dude: Chaos theory and the butterfly effect are dependent on determinism. I suppose you say that your "soul" theory is dependent on the initial conditions at the Big Bang. But those conditions simply deterministically define the future state of the system.

A: Chaos theory and the butterfly effect depend on lawlike amplification of tiny fluctuations that need not themselves be uniquely derivable from laws. They may, for example, be random quantum fluctuations. All natural change below a certain granularity we call the Planck scale may be random and all levels above that can emerge via statistics from the random events, rather as the apparently deterministic gas laws emerge from random thermal fluctuations in statistical thermodynamics. As for a "soul" defined in some future generalization of information theory to be an essentially mathematical entity, its description would escape deterministic prediction by analogy with the way Gregory Chaitin's computationally defined Omega number escapes derivation in arithmetic for reasons rooted in Gödel's incompleteness theorem for arithmetic.

Dude: I say why should I live and die and never consider taking a position on such things (based on the best possible information available). Unlike god, determinism is real, it's all around us. The question is, is free will a "thing" and if so, how does it work in a determined universe?

A: We are all entitled to take up such a position, after due reflection, and indeed a life without such positioning seems like the unexamined life that Socrates considered not worth living. But the apparent reality of determinism is just that, an appearance, albeit a very persuasive one. My issue here, echoing Stephen Wolfram, is that predictability is the important missing

ingredient in the story. Determinism without predictability is as uninteresting as the kind of traditional religious fatalism that says, in effect, if God has already decided for me why should I bother? And no scientist doubts that in many of the most interesting situations, our ability to predict outcomes is so limited as to be useless. Wolfram opines that many natural systems instantiate computational universality and hence are unpredictable in principle. Whether right or wrong in fact, this remains an issue of principle.

Dude: To not have a stand pro or con is a statement in and of itself, but more than that it would seem to make your philosophies mere musings, wasted words, as they are dependent on the answers to such questions.

A: My refusal to take a stand on such a simplistically formulated question is principled, and precisely an escape from the musings of those who would accept the terms of the debate with insufficient reflection on whether those terms are as cogent as they might seem at first blush. The question of whether I believe in free will or not is analogous to the question of whether I believe in God or not, in the sense that until what the interrogator means by free will or God is acceptably explained, the question is too vague to admit a clear answer. This is the sort of “pseudo” question that the late Wittgenstein warned us against by recommending philosophy as therapy. For me, both questions stumble at that first hurdle. All the philosophical debates on the reality or otherwise of free will fall in one way or another into more or less subtle confusion as to what exactly free will is supposed to be.

Dude: Random quantum fluctuations are not what is meant by soul in any practical context. While they could be deemed free, they bear no relation to free will.

A: Consider what randomness amounts to here. Although individual qubits evolve randomly into bits, vast numbers of them exhibit correlations by virtue of their mutual entanglement. What this amounts to is that an initially foggy landscape can come gradually into focus not as a mess of pixels but as looming objects and structures, complete with the sorts of disposition to interact that we regard as displaying conformity with natural law.

We can even describe this process in vaguely religious words. As witnesses to the unfolding revelation of quantum-to-classical creation, so to speak, we see a world of structured possibilities and opportunities that can seem to lead us on to ever more comprehensive realization of our own selves as agents embedded in a natural landscape. As we become aware of the lawlike interconnection of things in our environments, we learn to understand the possibilities for coherent action that these laws imply as the conditions of our own freedom, or as the living nexus for the enactment of our own free choices. This is no illusion, as I see it, but a deeper understanding of what constitutes freedom of the will.

Consider an example. We discover the laws of thermodynamics and risk depression at the prospect of all our lives ending in the ignominious “heat

death” of rising entropy. Yet by learning to harness those laws, we build engines that power cars and aircraft, which collectively raise our practical freedom to new levels. Freedom here is empowerment, where we find new tools to leverage the expression of our own inner promptings.

Dude: One may call it a cop-out to claim that the question of whether I believe in free will or not is analogous to the question of whether I believe in God or not, in the sense that until what the interrogator means by free will or God is acceptably explained, the question is too vague to admit a clear answer.

A: Again, this is a natural reaction that deserves a better answer. In a sense that may begin to be intelligible in all my words, I do feel inclined to stand on the side of some kind of free will and some kind of God. The important issue to clarify first is the nature of the self. As I understand the issue, a self is equal and opposite to its world, in the sense that we mirror everything that takes shape within the domain of our own conscious awareness. We live in a world that changes constantly, as new shapes emerge from the shining fog of the future and take their place in our presence before slipping or settling into the past. As life goes on, our selves grow and mature.

We reflect our perceived environments. When I gaze into a starry sky, my soul expands to cosmic dimensions. I become more godlike. Moments later, I can be back in the here and now, swatting a mosquito, with my soul reduced to the size of the battle zone around an itch. In contemplative mood, we can reflect on the envelope self that bounds all our best moments, and see it as an inkling of the greatness of God. Here God is an extrapolation of that great-souled feeling, but of course the extrapolation dissolves into incoherence, just as a child’s counting to infinity dissolves into “billion, trillion, zillion, googol, googol-googol ...”

As my words here show (to me at least), both free will and God are best approached indirectly. Attempts to pin down such ideas in hard, cold logic tend to fail. But if you are prepared to face the limits of logic, another indirect approach gets us closer, as follows.

We start the logical quest at the simple, blank immediacy of sheer being. We are, I am, in such a simple sense that this fogs into unbeing unless we, I, step forward and realize ourselves more specifically. We step from the alpha state of pure being into a determinate self that can become arbitrarily specific and detailed. But somewhere, as in the expanding cosmic self above, we find our selves fogging out again into infinity, and our self evaporates into the vastness of God. This is the omega stage of self-realization.

As Jesus reminded us, I am the alpha and omega. Each of us nurses an “I” that evolves from eternity to eternity. We grow from the initial, pre-logical, alpha state to the final, post-logical, omega state, and everything in between is (more or less) logical. There is a logical circle here that Douglas Hofstadter thematized in his 2007 book.

The Fiducial Self

What time is it? We agree on a clock and a calendar, and a set of means to use them to determine the year, month, day, hour and so on. Various conventions were established by a series of suitably distinguished bodies, and now we agree that we are living in 2007 CE and the time is whatever it is at this moment, and so on. The calendar commemorates an essentially arbitrary event, the nominal birth year of Jesus of Nazareth, for the historical reason that the Christian Church found it important to define a basis for its ecclesiastical calendar.

Awareness of the passage of time is the core experience of a conscious subject. Awareness of time begins a couple of years after birth and evidently ends at death or in some cases a while before. Awareness more or less lapses during sleep and periods of unconsciousness, and dilates or intensifies in various familiar ways, for example when bored or excited or as a result of the ageing process. All this makes subjective experience of the passage of time unreliable and encourages us to take public clock and calendar time as criterial.

Very similar arguments apply to the general question of how we judge and establish the truth of what we say. Truth criteria for our statements are more reliable the more solidly they are rooted in objective tests and public standards agreed by suitably distinguished experts. For this enterprise, we have a huge and rigorously defined industry staffed by recognized scientists and certified technologists. The foundation for this industry is a corpus of elementary truths such as the theorems of arithmetic and statements about weights and measures.

Until recently, among the basic truths that serve as foundations for the rest would have been statements about the divinity of our fathers (God). The existence of God was regarded as criterially absolute, as solid a rock on which to build the edifice of truth as the timeline stemming from Jesus. Now we see that God is an evolutionary legacy from our biological roots and reflects a premodern psychology. The self, iterated to a notional infinity in a space of recursive reflections, is the mirror of God. But a self seems a weak basis for absolute truth.

Given this new insight into our evolutionary roots, we can define truth by reference to the perspective of a fiducial self, where this self offers a definitive or criterial image of truth, just as the standard kilogram is defined as having a mass of one kilogram. We can define this self as reflecting not the entire physical universe, as if this were a well defined totality, but nothing, and the reflection of nothing, and so on to infinity. This is the universe of pure sets, from which truth definitions have indeed been constructed. Mathematics guards this truth.

Dude: I get the gist of what your saying but “random quantum fluctuations” does not a god, soul or free will make. Can you draw a simple line for me

from randomness to a purposeful god, a soul that can be willfully good or evil and objective free will.

A: Indeed they do not, nor should they. What random quantum fluctuations do is make a sufficiently convincing simulacrum of such things as to serve all practical purposes. In the case of free will, they give us the wiggle room to author our fate subject to all applicable laws and regulations, and in the case of the gods, they give us scope to project our evolutionary drive, the genetic drive to survive, beyond the individual, beyond the family and the tribe, up to life, the universe, and everything.

We all know that pure randomness is no freedom at all. What it is, in my take on the matter, is the sand in the works, the salt in the soup, the yeast in the bread. Consider evolution by natural selection. Organisms must reproduce after their kind, so to speak, or inheritability is lost and you have no ratchet effect. But without the odd random mutation to shake up the old order, you'd find species settling into ruts and there'd be no dynamic at all. It's all in the mixture.

The same idea works for quantum irregularities occasionally getting amplified up to the classical level. Most of them just mess up the clockwork and generate entropy, but some are seeds for something new in creation. As to which, that depends on a whole lot of collateral information about the entanglements of the irregularities, the presence or otherwise of strains in the previous clockwork, and so on. We experience the result, according to my, ahem, theory, as glimpsed (rather than understood) intimations of free will and divine presence.

Dude: From your views I would say you are more or less a naturalistic pantheist, do you see yourself as such?

A: Well, that's a fine label! Everything is part of nature, by definition, and whatever theos remains after the usual atheist objections have been accommodated is either pancosmic in the Einstein sense, and hence useless for grounding human sin and salvation, or a mere species fetish, like the Abrahamic God, which has done a fine job of driving people mad over sin and salvation but is useless for explaining the cosmic order. Whether this preference for Einstein over Abraham makes me a pantheist I leave for you to judge.

Dude: Finally, like most people you seem to believe that human beings are special, not unique among animals, or even life in the universe, but somehow transcending the material universe. In my view, this completely unfounded wishful thinking, but believing that we are greater than we can be known to be does make for good drama for the theist and fantasy for the philosopher.

A: Well, I wouldn't say that. Human beings are first and foremost animals, with so much in common with rats and the like for it to be almost embarrassing. Yet all of natural creation (to steal a phrase) has transcendence built in, as it were, in the form of the remarkable ability to grow out of its previous

incarnations and present surprising new facets for our amazement and delight (or horror). Things change and new stuff unfolds. Humans are like neurons in a global brain (Howard Bloom), and that brain is thinking new thoughts.

All that we now understand about the physical universe, the world of biology, and the great amorphous domain of culture can be transformed almost beyond recognition with amazing speed. Think of how quantum physics upended physics, or how the DNA story transformed biology, both of which are classic examples of paradigm shifts in the sense of Thomas Kuhn. And think how the epidemic of Islamist monomania is transforming the world of ideas, in the sense of making atheism seem a lot saner. None of this is wishful thinking.

Dude: Did God create everything? Not in the Bible. One only needs to read Genesis 1:1–1:10 to see that there was a preexisting water universe of chaos that god created the heaven and earth within. The cosmogony written in Genesis (and elsewhere) is clearly taken from the older Enuma elish and mixed with other myths of the time. As is the “firmament” which science has long since proven to be false, which is backed up by the Father religion (Jews) as well as its bastard child Christianity.

A: You’re preaching to the converted here. As I said, the AG is useless for explaining the cosmic order. If a universe cannot create itself, say by symmetry breaking from a Planck-sized Calabi–Yau manifold in brane space, then how much less sense can it make to have AG creating Himself (what sort of sex act would that be?). As for the Son religion being a bastard child of the Father religion, the legality of the relevant marriage bond is naturally debatable. You may find sympathy for your complaint among the followers of big M, the one whose name may not be used for a teddy bear!

The position of the presuppositional apologists is that the Bible is in fact what its authors said it is and what they and countless followers sincerely believed and believe it to be.

They can all be wrong. The proofs can all be insufficient. The words can fail to make sufficient sense, the visions fail to be sufficiently numinous. It can all be a house of cards, all dust in the wind.

Science and modern life have changed the game. Like a big, prosperous, modern city growing up around a little old tumbledown church house, the world has moved on. Christians need to wake up.

We, the godless ones for whom divinity is the glow in a Hubble photo, the smile on a baby’s face, the inner peace that transcends logic, repudiate the dank and dusty idols of our ancestors.

We shall make a fresh start. We shall honor our history and venerate the Bible as a stepping stone to now, but we shall no longer let ourselves be held in thrall by its doctrines of sin and redemption.

A New Trinity

A common objection to atheism is that some mysteries of life elicit our awe and wonder. These mysteries seem to deserve respect on a level that finds natural expression in worship, as in the traditional marriage vow where the man promises to worship his wife with his body. Faced with the basic facts of life and death, most people find the bleak common-sense assertions of atheism lacking in the emotional resonance that can sustain their spirit through hard times. The common response is to insist on some kind of divine presence in human lives.

In recent centuries, religionists have had ample opportunity to shoehorn intuitions about such a divine presence into a monotheistic doctrine of one god, usually conceived as a supernatural father figure. However, as a growing number of atheists are insisting with increasing urgency, their efforts continue to leave a host of philosophical issues unresolved.

At least three fundamental issues illustrate the inadequacy of traditional monotheism:

A godlike being who creates or sustains the physical universe as we now understand it in terms of gravitating mass, radiation and the flow of time could hardly be expected to take any special interest in the social and sexual arrangements of one species of mammal on one small planet in an average galaxy.

A godlike being who is responsible for life on Earth and somehow regulates the evolutionary succession of species and the orderly phenotypic expression of genetic information during embryogenesis would be most unlikely to make any sense of my prayerful wishes for good luck and happiness.

A godlike being who appears in my own personal awareness and shadows my thoughts or bestows inner peace or revelation upon me in something like human language would not be the sort of thing that could exert any influence on the basic physics of the universe or the molecular facts governing life as we know it.

One way to break the logjam is to recognize three distinct forms in which a divine presence can be recognized. These forms can be given a focus that should enable them to find a role in an atheistically oriented lifestyle that stays clear of religionist superstitions.

At risk of trivializing the proposed new trinity, I hereby introduce the forms with handy acronyms:

Bopp – the being of physical phenomena – is the cosmic divinity that gives form to the mystery of why there is something rather than nothing. There is a universe of physical phenomena, manifested as a spacetime manifold filled with matter and energy that evolves over time in an amazingly lawlike way. The applicability of mathematical methods to help us understand all this is

nothing short of miraculous, and deserves at least token recognition in any worldview, however atheist. Naturally, Bopp is not a person.

Goof – the god of our fathers – is the divine aspect of life as understood in evolutionary biology. Conceived as the ongoing expression of increasingly intricate and indirect chemical processes with the effect of replicating generations of organisms that tend to become increasingly adapted to their physical environments, life as we know it involves mechanisms and serendipities that evoke admiration and astonishment in any careful observer. Since the proximate expression of this process involves generations of fathers and mothers, and since the ideology of monotheism hits hardest here by seeking to regulate births, marriages, and deaths, I call this divinity Goof, without wishing to take a stand on monotheism.

Soia – the self of introspective awareness – is the divine aspect of the infinite depths of the soul as they reveal themselves in prayer, contemplation, and meditation. This divinity is the subject matter of psychology, and can be researched productively in neuroscience, using brain scans and the like. Arguably, the selflike aspect of Soia is a psychological projection, an aspect of the self-alienated self or a shadow self. Perhaps we are all schizoid, with a big self and a little self. The little self is our normal self, the analog “I” of our everyday intercourse, while the big self is Soia.

The three forms are so interrelated as to be three aspects of one and the same big mystery. What is, is somehow eternal yet located in time, is made manifest through a living self yet goes beyond that self. The self is not only a singular abyss of thought and inner vision but also an inseparable part of a living community, and the thoughts and visions first achieve clarity in concepts refined over generations. It may be that the universe can only realize itself through a focal self embedded in a sustaining ecosystem, and the self can only achieve fulfillment in some kind of union with the cosmos. We can dissect and analyze the mutual dependencies here for as long as we like, but the final fact of circularity remains.

With this triumvirate as foundation, I believe a lot of confusion in the monotheist tradition can be cleared away. In particular, the absurd confrontation between evolutionary science and awareness of divinity can be overcome once and for all. The monotheistic traditions are quite simply adaptive responses to the biological challenge of securing the benefits of altruistic behavior in a world that favors selfishness. They are expressions of the geocentricity of human life and proof that humans are not pure individualists. Needless to say, I have a lot of work ahead of me to cash out this vision.

World War 2

Lin: Hitler, Stalin, and others clung to dogma to espouse their heinous views, which was founded on unreasoning and irrational beliefs about the world. This has little to do with science and evolutionary facts. Their policies were bad beliefs and dogma at its worst.

A: Among my many inglorious accomplishments as a resident for twenty years in Germany, I have made an extended study of German history, philosophy, and militarism. Hegel, Nietzsche, and others influenced me strongly as a student and my girlfriend for many years was a militant Marxist (who has since become a relatively respectable British politician). Between my student and German life, I spent a while as a government servant in the British Ministry of Defence helping to fight Soviet Communism. So all these themes mean a lot to me.

The history of Western philosophy reached a level in the nineteenth century that finally exceeded its origins. Building on the immortal works of Immanuel Kant, Hegel rethought all previous history and philosophy in a dialectical system of breathtaking scope and originality. The synthesis he achieved was so impressive that it spawned three developments that dominated the next century of German and world history. It gave a platform for liberal theologians to deconstruct the Biblical legacy, it gave Karl Marx a platform on which to build the philosophy of Communism, and it gave the less methodical philosopher Nietzsche no better way to be original than to invent the nihilistic doctrine of Zarathustra, prophet of the arrogant and predatory superman.

Contrary to some current opinion, Marxist Communism was not entirely irrational, but it was a closed and limited set of ideas, logically analogous in this respect to the standard set of doctrines in orthodox Christianity. For this reason, true believers in the ideas tended to get trapped in them and interpret everything through them. This made Soviet Communism, adapted from Marxism by Lenin and his followers, such as Stalin, very dangerous. Germans, whose culture had been formed by centuries of Christianity, mostly found Marxist-Leninist ideas simply horrifying. Sadly, the reaction of many was to hope that aggressive militarism was the only solution: defeat the Soviets in a Blitzkrieg and put a quick end to the horror!

None of this has anything in particular to do with the scientific theory of evolution by natural selection, except perhaps to reaffirm that its ideas still governed human interaction, or indeed with obvious irrationalism. The clash of arms between German militarism and Soviet Communism had its roots in pre-Darwinian philosophy. Many German soldiers saw themselves as defending the Christian west against the Asiatic hordes of Bolshevism. And many Soviet soldiers saw themselves as defending simple human values (albeit socialist ones) against the fighting dogs of reactionary capitalists. All of this was tragic in the deepest sense, but if any of us had been there we would have understood better.

As I see it now, the whole tragic history was an example of the power of philosophy in action. Two sets of ideas were individually compelling but mutually incompatible. The resolution came from outside, from the Anglo-American world, where the legacy of classical philosophy found expression in political institutions that were not inspired by the Hegelian synthesis and

had no stake in its divided legacy. The world we now inhabit, with rational science and democratic politics on top, is the result. The next challenge is to defeat the forces of reactionary fundamentalism, where the Abrahamic faith fuels closed and poisonous doctrines that rival Communism and Fascism in their power for evil.

Unfortunately, anyone who studies the Bible so closely that they have no time for serious study of anything else is locked in a closed cycle of ideas that soon becomes toxic. Because Jesus was such a luminous and seminal figure, the toxic effect takes longer to set in than if the ideas come from Marxism or the Koran or the Old Testament alone, but the long-term prognosis is the same. Either break out of the circle or lose contact with sweet reason.

Robbie: If it hadn't been for the murderous, mad tyrant, Uncle Joe Stalin, we'd all be speaking Deutsch and venerating our Saviour St Adolph these days! So, despite all the horror, you could say Joe was an absolute requirement to preserve our way of life and civilization.

A: It was the fact that Stalin was in power and making Soviet Russia look threatening that horrified the Germans sufficiently to move them to vote Adolf and his gang of thugs into power, on the principle that if the Soviets scare us we're jolly well going to scare 'em back. So if it hadn't been for Lenin and Stalin we may have seen a less militant Germany.

But historical counterfactuals are always moot. Niall Ferguson thinks Britain could have prevented World War 2 by refusing to declare war on Germany in 1914. That could have stopped Lenin being sent back to Russia in a sealed train from Switzerland like a plague bacillus just in time to start the 1917 revolution.

But think of all the drama we would have missed. No blood, toil, tears, and sweat! No Rommel, no Stalingrad! No Holocaust, no atom bomb! What a boring old century it could have been. Respect to the philosophers – they sure know how to put on a good show to liven up the history books.

Robbie: Do you think I'm daft as a brush? It was the outrageous and humiliating reparations demanded by the Allies following the World War 1 Armistice that led directly to World War 2.

A: The treaty of Versailles was only the proximate, surface cause. That was only enough to motivate the Blitzkrieg in France, which would not by itself have led to the involvement of Russia or the United States (as was obvious from the Ribbentrop–Molotov pact and the dickering over Lend-Lease). The fall of France and the humiliation of Dunkirk were already enough to repay Versailles. But the world-historical dynamic ran deeper.

Communism was a “spectre haunting Europe” (as Marx and Engels said in their manifesto) between the wars. You may recall the Russian civil war of 1917–1923 where Winston Churchill declared that Bolshevism must be

“strangled in its cradle” and sent in forces to do battle with Trotsky’s Red Army, you may recall the 1918–19 Hungarian Soviet Republic under Bela Kun that was brutally replaced by the fascist “white” regime of Transylvanian aristocrat Miklos Horthy, you may recall the years of militant Red agitation in Germany associated with Rosa Luxemburg and Karl Liebknecht, and so on. Central Europe was seriously spooked.

Robbie: For the average Gerry in the mid to late 1930s and even more so after the Blitzkrieg in Poland and fall of France, is it any wonder old Adolf was deified and adored? If you and I had been Gerries then, we’d have been praising him with the rest of them. In fact, there were plenty here in the UK and USA felt the same, not to mention the Vatican. So voting in Adolf and his thugs had nothing to do with Soviet Russia.

A: Poland and France were just warm-up exercises. The big challenge was always Soviet Russia. I would not have adored the Nazis for the early Blitzkriegs any more than I adored Margaret Thatcher for her successful conduct of the Falklands war. A feat of arms for a limited goal, however successful, is largely a technical matter, as Donald Rumsfeld would agree. But the ugliness of the Nazis was clear from the start and went way beyond the challenge of Versailles.

Robbie: As for the Holocaust, that is definitely a direct consequence of the criminal fraudsters who inserted that vicious stuff in the NT about “his blood be upon us and our children and children’s children” and so on!

A: The fatal error in the German *Zeitgeist* that led to World War 2 was the erroneous diagnosis of Communism as a cancer that required “surgical” removal of the Jewish community for having provided a fertile environment for the spread of subversive ideas. But you’re quite right that the Bible played a big role with its narrative of Jews as the “chosen race” that played straight to Nietzschean superman racism, and by giving Christians the idea of the blood libel to disarm some who might otherwise have protested.

Back to Fundamentals

Hum: See the video presentations by R.C. Sproul entitled *Aquinas vs. Kant* and *The Illusion of Descartes*. I think Sproul is miles above you on his philosophical knowledge, understanding, reading, and appraisal of the problems resulting from the German liberal philosophers and Enlightenment ideology. This is shown by in his ability to get to the heart of the issues and bring the ideas down to an everyday level.

A: My first philosophy tutor was one of the greatest living experts on Aquinas but I was unable to accept the theistic premise of his views. Kant put the issue into a correct perspective for me with his talk of the transcendental ego. As for Descartes, his *cogito* was a milestone that put the self-alienated selves of the Christian apologists into a more coherent epistemological perspective. As for anyone being “miles above” anyone else, there is such a

thing as dragging big ideas so far into the everyday that they lose their meaning. As Einstein said, we should make difficult ideas as simple as possible but no simpler.

Hum: To think that the theory of evolution does not influence any particular worldview and greatly mold the ideas that resulted from such thinking is to live in a world of erroneous perception. The scientific theory of evolution is one of the major contributors to what happened in Europe and is still happening to our culture today.

A: My diagnosis is that you have an unreasonable obsession with evolution. I would recommend that you read Daniel Dennett's 1995 book *Darwin's Dangerous Idea* for a more nuanced perspective. I have been inspired by Dennett's writings since 1980 and enjoyed talking with him more recently in New York and Oxford. His 2006 book *Breaking the Spell* on how we can begin to understand religion scientifically is both helpful and wise. Essentially, his view is that Darwin's idea is the best idea anyone ever had and that the logic of evolution is universal in scope.

The logic of evolution is this. Take a system that is supposed to work in a given environment. The system may be an organism that is supposed to survive and reproduce, or it may be a theory that is supposed to generate correct predictions, or it may be a machine that is supposed to maximize performance, or it may be an idea that is supposed to be enlightening. Make variants of that system and try them out in the environment. Take the best variants and make new systems based on them. Repeat this process for long enough and you can go a long way and make real progress. How can that be wrong?

Hum: To think that human reasoning alone, "I think, therefore I am," is the way to consistently arrive at godlike objective truth is definitely to make oneself a god in one's ability to reason correctly.

A: It's a good way to start. It leaves unexamined the nature of the "I" but one can come back later and clean that up. The philosophical point is that even if a sky god were responsible for creating and shaping us, we humans are in the epistemological predicament of starting from where we are and from what we are in our journey toward the truth. We cannot jump over our own shadow and we must proceed methodically, step by step, from simple beginnings.

Hum: Karl Marx and Darwin were in communication.

A: As contemporary authors in Victorian England, it is no surprise that they exchanged a few words and formed opinions about each other's work. Given the *Zeitgeist*, it is also no surprise that their ideas had certain parallels. But Darwin was no Hegelian and Marx was no biologist.

Hum: Mary Pearcey said: "For Karl Marx, the ultimate creative power was matter itself. This was a new form of philosophical materialism ... Marx proposed that the material universe is not static but dynamic, containing

within itself the power of motion, change, and development. That's what he meant by dialectical materialism. He embedded the Prime Mover within matter as the dialectical law. In short, Marx made matter into God."

A: This is an almost correct summary of Marx as far as it goes. Marx took Hegel's dialectical idealism and turned it on its head. Hegel started from the idea (the Logos, as in the Gospel of John) and followed it in an evolutionary bootstrap from the immediacy of mere being to its ultimate form as the Absolute. But Marx did not make matter into God. His analog of God was the dialectical process, which was essentially evolution. Matter was just the starting point, like mere being in Hegelian logic.

Hum: Mary Pearcey said: "As one historian puts it, 'Darwin gave Hegel the respectability of science.' That is exactly what the pragmatists aspire to do in areas beyond biology – take over Hegel's cultural evolutionism, but give it the respectability of science by rendering it completely naturalistic."

A: This is quite good. Hegel's philosophy translated very well into evolutionary terms, and the history of European philosophy over the last century or so has indeed been the further refinement of that general outlook. It has proved to be a fruitful path to follow. I should add that Anglo-American philosophy took a different turn. Following the fundamental logical work of nineteenth century mathematician Gottlob Frege, we pursued analytical philosophy. This led, via Russell, Gödel, Turing, and von Neumann, to computers. As we digitize everything, we can fall back on evolutionary philosophy to fill out the social side of the picture.

Hum: Nevertheless, the rejection of the Word of God for what He said, and His replacement of materialism is what was fueling much of European philosophy and thinking, bringing to power these atheist despots and the consequences of their ideas on the masses.

A: God said 0, 1, 10, 11, 100, 101, 110, 111, ... and breathed forth the "ice-cream cone" universe of sets (imagine a conical stack of ever bigger digits topped by a fluffy cloud of higher infinities), which materialized as the primordial Calabi–Yau manifold twisting in time, which inflated to the quark-gluon plasma, which condensed to stars and galaxies, which evolved life, which evolved us, who evolved our thoughts, which in turn loop the loop and close the circle – for now!

Hum: Truth is narrow and exclusive. It does not include every whim and fancy of the imagination.

A: The way to go is to winnow truth from all the rest by repeated cycles of testing and reformulation. Trial and error: confront problems, solve them, move on, repeat as often as necessary. That's evolution.

God and Bede Griffiths

The thread continued uninterrupted as 2007 rolled over to 2008.

Soja: Francis Collins (lead scientist in the Human Genome Project and author of *The Language of God*, 2007) was an atheist before he became a believer. He was greatly influenced by C.S. Lewis, who was by the way the tutor and friend of Father Bede Griffiths at Oxford. If you are interested, read Bede's autobiography (1979). Francis Collins' standard answer to why he is now a believer, "Because I choose to." He doesn't get involved in debates.

Here is a book review –

A New Vision of Reality
By Dom Bede Griffiths OSB
Templegate 1990, 304 pages

From *Earthlight* magazine, November 2004

[Smoothed and shortened for inclusion here – AR]

Father Bede's main contribution to a new understanding of cosmology is to recognize the spiritual, psychological, and physical aspects of all created reality, and to understand that the human person is at once spirit, soul, and body.

Father Bede was convinced that western science was slowly rediscovering the perennial philosophy, the wisdom that had prevailed throughout the world from 500 to 1500 CE. Western science is discovering what the oriental traditions had long known: that the material universe is pervaded by and finds its explanation in a transcendent reality. That was first seen in India in the fifth century BCE, "when there was a breakthrough beyond mental consciousness to the supramental with the discovery of the Ultimate Reality sustaining the whole universe." Bede discovered this perennial philosophy through the *Vedanta*.

Alduous Huxley said that Indian religion provides a clear and comprehensive summary of the perennial philosophy. He stated it in four points:

- 1) The phenomenal world of matter and individual consciousness is a manifestation of a divine ground within which all partial realities have their being.
- 2) Human beings can realize the existence of the divine ground by a direct intuition that is superior to discursive reasoning.
- 3) Human beings possess a double nature, a phenomenal ego and an eternal self, which is the inner person, the spirit, the spark of divinity.
- 4) The end and purpose of human life is to identify oneself with this eternal self and thus gain unitive knowledge of the divine ground.

Similarly, Bede taught that the Vedic philosophers understood the threefold nature of reality as at once physical, psychological, and spiritual. These three realms of reality are always interdependent and interwoven: every physical reality has a psychological aspect, and both the psychological and physical realms have an underlying spiritual reality. Bede says this understanding underlies not only the Vedas but all ancient thought. In the primitive or natural mind, there is no such thing as a merely physical object. Every material thing has a psychological aspect and a relation to the spirit that pervades both the physical world and human consciousness.

Bede said that this unitive vision of reality is “the Oriental view of the universe, which is in fact, the view of the ‘perennial philosophy’, the cosmic vision which is common to all religious tradition from the most primitive tribal religions to the great world religions, Hinduism, Buddhism, Islam, and Christianity.”

He tells us that up until the Middle Ages, in China, India, and the Islamic world as well as in Europe, a creative synthesis had been achieved. All human life was conceived as a harmonious unity in which each individual was related to nature, to his or her fellows, and to the divine.

According to Bede, this unitive vision began to be lost at the Renaissance. Beginning with Descartes’ separation of mind and matter, through Francis Bacon, Galileo and Isaac Newton, Bede shows how by the eighteenth century all aspects of a divine reality governing the universe had been gradually eliminated in favor of a mechanistic system.

This affects all aspects of science, from social theory such as Marxist dialectical materialism through Freudian psychology. Just as the existence of a divine ultimate (spiritual) reality was denied in cosmology and the natural sciences, so the existence of the soul was denied in psychology.

In *A New Vision of Reality*, Bede rejoices that “the elements of the more universal and profound vision” were being recovered in the context of scientific thought. He then describes the “new physics” of Frijof Capra, David Bohm, Rupert Sheldrake, and Ilya Prigogine, as well as the new psychology of Karl Jung, Karl Pribram, and Ken Wilbur, and especially the emergence of transpersonal psychology.

Bede always distinguished between the spirit and the soul, or between the spiritual and the psychic. The triune anthropology of spirit, soul, and body became the core of his teaching.

Soja: From Andrew Harvey’s website –

[Smoothed and shortened for inclusion here – AR]

Andrew Harvey was born in south India in 1952 where he lived until he was nine years old. He attended private school in England and entered Oxford University in 1970. At the age of 21, he became the youngest person ever to be awarded a fellowship to All Soul’s College.

In 1977 Harvey returned to India, where a series of mystical experiences initiated his spiritual journey. Over the next thirty years he plunged into different mystical traditions to learn their secrets and practices. In 1978 he met a succession of Indian saints and sages and began his long study and practice of Hinduism. In 1983, in Ladakh, he met the great Tibetan adept, Thuksey Rinpoche, and undertook with him the Mahayana Buddhist Bodhisattva vows. In 1984, he began a ten-year-long exploration of Rumi and Sufi mysticism in Paris with a group of French Sufis.

In 1992, he met Father Bede Griffiths in his ashram in south India. This meeting helped him synthesize the whole of his mystical explorations and reconcile eastern with western mysticism.

In 2005, in the historic Santuario de Guadalupe in Santa Fe New Mexico, Andrew Harvey delivered his vision of the contemporary crisis now confronting us in today's world and its potential solution in what he has termed "Sacred Activism." This occasion was made into a documentary film by the Hartley Film Foundation and is available on DVD.

Andrew Harvey has taught at Oxford University, Cornell University, Hobart and William Smith Colleges, The California Institute of Integral Studies, and the University of Creation Spirituality, as well as the at various spiritual centers throughout the United States. He was the subject of the 1993 BBC film documentary *The Making of a Modern Mystic*.

Bede's Perennial Philosophy

Adapted by AR in May 2007 from

Bede Griffiths and the Rebirth of Christian Wisdom
by Bruno Barnhart, OSB Cam

Bede writes of a perennial philosophy that has vanished from the modern West. He lamented the sapiential vacuum in the modern West, but was aware that something new and important was happening within this apparent spiritual void.

Bede's Personal Synthesis

Bede worked with four main sources or categories of material, which also mark successive stages in the development of his thought.

Romantic poetry: Bede identifies this tradition with his own experience of the divine in nature. He identified his teachers as Wordsworth, Keats, and Shelley.

Christianity: Bede's discovery of God seemed to cut across his first experience. It turned Bede around radically so that he became totally committed to his faith in Christ.

India: When Bede went to India, it was once again as if he had suddenly discovered himself. Here he pursued his studies of the vedic texts in their own milieu, and continued to uncover what he felt to be the unitive root of the universal wisdom, the primal oneness.

Western science: Bede later became fascinated by the new holistic paradigm in Western science, especially Ken Wilber's vision of the evolution of consciousness through various stages all the way to nondual consciousness. This was no longer the science of Descartes and Newton, nor was it the technology of the twentieth century West.

There is a direct historical continuity between the romantic tradition and the new paradigm in science of Fritjof Capra and others. Further, romanticism and this new scientific vision harmonize well with the holistic perspective of Hinduism. It was not difficult for Bede to integrate these three. Christianity, on the other hand, does not sit quietly with the others.

Bede's Contribution to the New Wisdom

Bede's vision can be seen as having five aspects. The old Christian wisdom tended to enclose itself within a historical architecture of archaic religion and classical thought. But the birth of the human person is something new, which cannot be held within any container. We cannot commit ourselves totally to any old tradition, even the best and the deepest of them. Bede wrestled with this problem throughout his life.

A deeper way of knowing: Bede was convinced that there is another way of knowing, deeper than ordinary thought. There is a fuller consciousness, and you recognize its music in his voice as he speaks and writes. Johann Sebastian Bach, talking about what he considers to be the finest kind of music, says the left hand plays what is written, while the right hand improvises, playing assonances and dissonances upon what is written. So much Christianity is played with only the left hand – what is written. This is true of every fundamentalism, each in its own way. But we are creatures endowed with two hands. Suppose that faith is not only belief and submission, but also a creative act that brings forth something new. The New Testament is written for two hands. It is both continuity and actuality, truth and life. The container is opened up, and God is acting through your own freedom, your own creativity, your own intelligence, rather than through a fixed external code that requires your exact conformity. Bede is very impatient with containers, because he knows that right hand very well. Bede's work is an expression of the freedom of the Spirit and an appeal to recover that freedom within Christianity.

The unitive absolute: Bede believed in the principle of non-duality and of a unitive absolute, the One. In the Indian scriptures, he discovers a perspective in which everything is one rather than multiple, in which all things are embraced within a single, ultimate reality. When Bede speaks of the perennial philosophy or the primordial wisdom or the universal wisdom, he

can include within each of these expressions several spheres of meaning. The core meaning is that unitive reality, or unitive absolute. The next, larger sphere of meaning is the three levels of body, soul (or mind) and spirit. A third, more general meaning is the integral human life expressed in the world's religious traditions prior to modern times. That absolute reality or unitive principle becomes the heart of Bede's vision. Identified with the first divine person, it becomes a key for opening Christianity to its depths. The nondual absolute becomes incarnate in Jesus Christ, and the process of its embodiment continues in those who are baptized into Christ.

The unitive self: Bede believed it is through the unitive self, or atman, that the unitive ground of all reality is experienced. The point of intersection with Christianity is baptismal initiation, where we are dealing with the self, the person, as a totality. Most of our spiritual tradition is analytical and restricts itself to the language of intellect and will, knowing and loving. But beneath and prior to knowing and loving and any other faculty or activity is the person as a whole, your own self.

The divine feminine: Bede recognized the divine dimension of the feminine. Repeatedly he identifies the Holy Spirit with the "feminine side" of God. This feminine spirit is the divine energy which is the mother of creation, which brings forth all life, which moves the process of evolution. We can also imagine the spirit in interaction with the word in a way which is reflected in the interaction of woman and man. Recall Bach's keyboard, and imagine the left hand as word and the right hand as spirit. The music comes from the interaction of these two. Together, they generate the new and living unity of the music.

Spirit, soul, and matter: Bede had a vision of the total integration of the three levels of being: spirit, soul (or mind), and matter (or body) – or God, humanity, and the universe. The human person is not only mind and body, as in the modern conception, but spirit, soul, and body. The spirit is the unitive dimension that reconciles or integrates the other two.

In summary, Bede's contribution to the rebirth of the perennial philosophy is a synthetic vision in which the One, the unitive reality, expresses itself in an articulated way through all the dimensions of being.

Ross's Integrative Philosophy

Adapted by AR in May 2007 from *Bede's Perennial Philosophy*

Ross recalls an integrative philosophy that has vanished from the modern West. He laments the ideological vacuum in the modern West, but is aware that something new and important is happening within this apparent philosophical void.

Ross's Personal Synthesis

Ross worked with four main sources or categories of material, which also mark successive stages in the development of his thought.

Romantic philosophy: Ross identifies this tradition with his own experience of the absolute in nature. He identifies his early teachers as Kant, Hegel and Tolstoy.

Analytic philosophy: Ross's initiation in logic seems to cut across his first experience. It turned Ross around radically so that he became totally committed to his faith in the absolute rationality of nature.

Germany: When Ross went to Germany, it was once again as if he had suddenly discovered himself. Here he pursued his studies of the German philosopher-scientists in their own milieu, and continued to uncover what he felt to be the unified theory of all natural phenomena, the primal oneness.

Modern science: Ross later became fascinated by the new paradigms in modern science, especially Stephen Wolfram's vision of the evolution of a new kind of science emphasizing discrete processes and computational models. This is no longer the science of Newton and Einstein, nor is its technology limited by classical continuum physics.

There is a direct historical continuity between the romantic tradition and such new paradigms in science as quantum holism and transpersonal psychology. Further, romanticism and the new scientific visions harmonize well with the evolutionary perspective of the great philosopher-scientists. It was not difficult for Ross to integrate these three. Logical absolutism, on the other hand, does not sit quietly with the others.

Ross's Contribution to the New Orthodoxy

Ross's vision can be seen as having five aspects. The old logical orthodoxy tended to enclose itself within a historical architecture of premodern philosophy and classical thought. But the birth of modern psychology is something new, which cannot be put in a box. We cannot commit ourselves totally to any old tradition, even the best and the deepest of them. Ross wrestles with this problem throughout his work.

A deeper way of knowing: Ross is convinced that there is another way of knowing, deeper than logical thought. There is a fuller consciousness, and you recognize its music in his voice as he speaks and writes. Johann Sebastian Bach, talking about what he considers to be the finest kind of music, says the left hand plays what is written, while the right hand improvises, playing assonances and dissonances upon what is written. So much logic is done with only the left hand, in effect programmed. This is true of every fundamentalism, each in its own way. But we are creatures endowed with two hands. Suppose that logic is not only rules and consistency, but also a creative act that brings forth something new. The new kind of logic is written for two hands. It is both continuity and actuality, truth and life. The logical box is opened up, and truth is realized through your own freedom,

your own creativity, your own intelligence, rather than through a fixed syntactic code that requires your exact conformity. Ross is very impatient with boxes. Ross's work is an expression of the freedom of the creative person and an appeal to recover that freedom within logic.

The unitive absolute: Ross believes in the principle of non-duality and of a unitive absolute, the One. In the philosophical classics, he discovers a perspective in which everything is one rather than multiple, in which all things are embraced within a single, ultimate reality. When Ross speaks of integrative philosophy or the classical wisdom or the universal wisdom, he can include within each of these expressions several spheres of meaning. The core meaning is that unitive reality, or unitive absolute. The next, larger sphere of meaning is the three levels of body, mind, and spirit. A third, more general meaning is the integral human life expressed in the world's philosophical traditions prior to modern times. That absolute reality or unitive principle becomes the heart of Ross's vision. Identified with the first person, it becomes a key for opening formal logic to its depths. The nondual absolute becomes incarnate in the knowing self, and the process of its embodiment continues in those whose spirit becomes incarnate in time.

The unitive self: Ross believes it is through the unitive self, or the loop of personhood, that the unitive ground of all reality is experienced. The point of intersection with logic is realization in time, where we are dealing with the self, the person, as a totality. Most of our philosophical tradition is analytic and restricts itself to the language of intellect and will, knowing and believing. But beneath and prior to knowing and believing and any other faculty or activity is the person as a whole, your own self.

Numinous intuition: Ross recognizes the numinous dimension of intuition or feeling. Repeatedly he identifies the spirit with the "intuitive side" of reality. This intuitive spirit is the divine energy which is the mother of creation, which brings forth all life, which moves the process of evolution. We can also imagine the spirit in interaction with hard logic in a way which is reflected in the interaction of woman and man. Recall Bach's keyboard, and imagine the left hand as logic and the right hand as spirit. The music comes from the interaction of these two. Together, they generate the new and living unity of the music.

Spirit, soul, and matter: Ross has a vision of the total integration of the three levels of being: spirit, mind, and matter – or the absolute, humanity, and the universe. The human person is not only mind and body, as in the modern conception, but spirit, soul, and body. The spirit is the unitive dimension that reconciles or integrates the other two.

In summary, Ross's contribution to the rebirth of integrative philosophy is a synthetic vision in which the One, the unitive reality, expresses itself in an articulated way through all the dimensions of being.

The Problem with Atheism 2

A: [January 2008] I found Bede's book *The Golden String* interesting and engaging to read, and I felt definitely quite sympathetic to the way his quest had turned out. Still, my intellect is unimpressed by any attempt to regard all that we have achieved in the last few centuries in Western civilization as somehow corrupt or retrograde in tendency. That merely betrays a lack of understanding of its inner dynamic, which is indeed in part a natural flowering of essentially Christian ideas. I appreciate that Bede's own thought has evolved since those days, and I should read more of his works before I come to a more settled evaluation of his contribution to human civilization.

Meanwhile, I was quite impressed by the pope's new book on Jesus. Ratzinger is a thoughtful and deeply scrupulous writer, and his meditations on the high points of Jesus' mission are insightful and refreshing. He does not try to dogmatize about specific facts or opinions and seeks instead always to get to the deeper truth and the more enduring significance of the New Testament legacy. Given his evident sophistication in philosophy, I am almost persuaded that respectable sense can be given to the most central Christian claims.

Carl: Good luck with Soja. She doesn't really concern herself with what is true. Pluralistic religion is oxymoronishness.

Soja: Different understanding of the same God from different perspectives is not oxymoronishness.

A: Even using the word "God" is unfortunately a green light to the madmen who think that a revelation or a book can be beyond criticism,

Almost all of our religious legacy is dangerous trash, hazardous waste, brain rot, best thrown out and replaced via scientific common sense.

The limits of science and common sense can be the first step to a kind of enlightenment that leads to deeper self-understanding.

Many people who find such enlightenment discover that it seems parallel with claims valued and celebrated in some religious traditions.

Think of yourself as an evolving god and strive to be worthy of yourself. You will learn to love life and hate the biblist and jihadist blasphemers.

Carl: Soja believes that Jesus was born of a virgin and rose from the dead. Such people have zero credibility making statements about the useful sentiments that can be extracted from our religious traditions.

As an atheist, I am capable of gaining value from the nuggets of true ancestral wisdom found in the Bible, as well as in other religions, because I am free from the superstitious delusion that counteracts any good that can come from them. Soja is not. Only an open-minded atheist can benefit from the ancestral wisdom entrapped in religious dogma.

A: I think you may be right. I have tried as well as I can to sympathize with Soja's views in the hope that they would open a window on the wider "spiritual" enterprise that Bede Griffiths had embarked upon. Yet she is a faith-bound Christian who believes, apparently on the basis of Bede's work, that this is consistent with much of the Hindu tradition. Like you, I find the whole tendency of such a journey suspect. Why should we care how far the main threads of ancient Hindu tradition can be said to parallel historic threads in Christian belief?

Bede was tutored at Oxford by C.S. Lewis, whose children's books have been criticized as pernicious Christian propaganda, for example by Philip Pullman, whose own children's books by contrast are atheist. Bede then took holy orders as a Benedictine monk and later traveled to India, where he studied Hinduism and acquired a saintly reputation. TV mystic Andrew Harvey visited him and was deeply impressed. Since Harvey is a bright man who has made deep studies of Buddhism and Sufi belief as well as mystic Christianity, I thought all this was worth further study.

Now I fear a lot of all this is nonsense. I am quite used to finding whole philosophical traditions reducing to nonsense under analytical scrutiny, and I have no qualms about thus condemning as nonsense whole strands of religious tradition, without in either case wishing to discredit the practitioners who were misled by the nonsense. I am quite happy to accept that Jesus was a supremely gifted man who did his level best to turn the messianic tradition in Jewish life to good account and accepted an early death as part of the deal, and I see this as consistent with most of what the pope said in his new book, but nothing here endorses Christian orthodoxy.

I think there are still very few people who can look with sympathy into the roots of Christian and Jewish belief and practice and remain firmly secular in their mindset, yet it is possible. I am as happy as anyone to propagandize against the excesses, such as circumcision or belief in resurrection, yet would insist that the traditions have also preserved much of value. Scientifically, I would rationalize this value in terms of a genocentric evolutionary story, but let that be my personal hobby horse for now.

Buddhism

Robbie: Buddhism might be less dangerous to humanity than the other major religions but it isn't any less daft!

Bud: Buddhism simply says that once the delusions of conceptual thinking are removed, you have pure awareness, which is not so restricted by the physical brain, or even by time and space.

A: How things are or are not is something for which one needs criteria, and the default criteria for most of us are conceptual. In this sense, for example, human feelings are states of biological bodies and experiences of ghosts are not visitations by departed souls. However, a Buddhist criterion for how

things are or are not may well be based on meditation experience that goes beyond our everyday concepts. Thus pure awareness that seems to transcend spacetime may be accepted as doing just that.

But there is a downside to that acceptance. Sorting our everyday experience in spacetime is really basic to making sense of things, and once we let that go, things start to fall apart. The result can be a sort of gaga state where it's all just psychedelic, in the old hippy sense. The fact that a state of pure awareness does not seem to relate to brain states does not suffice to make it so, however deeply felt the experience. You can't prove that sort of thing from the inside, you can only take it as a given and lose the power of persuasion.

Bud: Look at current quantum mechanics. I saw these guys on *Nova* cooling matter down to near absolute zero, and they were saying stuff like, "At this point the wave particles don't know which one they are, all are all of the others, they're all everywhere at once." Then they said there's a quantum fabric underneath everything. They say things like, "I'm just as baffled by this as anyone." I know this doesn't necessarily prove Buddhist claims, but it certainly leaves the door open.

A: Maybe I can add something here. Cooling matter to near 0 K can create a Bose-Einstein condensate where the wave-functions of the particles cease to be locally peaked but spread out and overlap, so the particles lose their individual identity and become one big fuzzy thing. Now recall that photons are quanta of electromagnetic radiation. Interestingly, photons are bosons and they lose their identity in waves at any temperature.

Here I introduce my potentially cranky contribution to consciousness theory. All the electrical activity in the brain creates photons, by definition, and the brainwaves in the decahertz range (tens of cycles per second) generate deep-radio photons, which form a fuzzy cloud around the brain with a Heisenberg uncertainly nearly as big as the planet! So if consciousness relates in any nontrivial way to the quantum properties of this cloud, we have the basis for some rather exotic psychic consequences. Needless to say, this is not yet part of hard brain science.

Bud: A fully enlightened being (a Buddha) is said to transcend spacetime in certain ways. I don't know. I'm not an expert. I do know that the basic Buddhist notion of consciousness is rooted in spacetime. But doesn't spacetime fall apart in physics, too, ultimately? If we all agree that fundamentally there's no beginning and no end to existence, then how can you ultimately pin down a point in time?

A: The Buddhists are surely right that consciousness is rooted in spacetime. Every experienced moment is here and now. Buddhists learned to dilate the experienced moment, so that here and now fuzz out into nirvana. We don't know how far out that is, but it is probably not far. Given the thermal ocean we all swim in, any delicate quantum entanglements that embody a meditative state would wash out in next to no time. Ken Wilber, a U.S.

meditator whose achievements impressed Bede Griffiths, claimed to have achieved a “unitive” state that lasted for days on end, whereas normal meditators may manage a few seconds. But who can believe such stuff?

As for spacetime falling apart, stop and think about it. Here you are, now, with clocks and rulers. You measure back and forth and soon you have a calendar, an atlas, a timeline for evolution, a star chart, a big bang to give you a zero point, and Google Earth to boot. You want to give all that up for a fuzzball nirvana?

Carl: A hypothesis proposes a possible theory. One does not need proof to have a hypothesis. Buddhist hypotheses have credibility. Buddhist conclusions have none. If you say you are interested in Buddhist meditation and philosophy, you have credibility, or intellectual honesty. If you say you are a Buddhist, you are a believer. You have forgone intellectual honesty in favor of faith.

A: We all have to take stands. It is part of the human predicament. We look at the hypotheses and then stand and let ourselves be counted with the best, by our lights. Your stand is with Sam, evidently. But is there credibility or intellectual honesty in being an atheist or a Harrist? That depends on how carefully you have junked the alternatives.

Carl: Some of us are so careful with the “junking of the alternatives” that we are often accused of backsliding into supernatural thought.

A: If you don’t read authoritative recent texts on things you repudiate, assuming those things are complex and evolving, you repudiation loses some value. In the case of Christian belief, the evolution is visible. Not all modern Christians consider it sufficient to quote Biblical chapter and verse to sustain an argument, and those who do are working at an intellectual level one may regard as beneath contempt.

Part of reading with understanding is entertaining the propositions presented sufficiently seriously to give the impression to a casual observer of having embraced the truth of those propositions. Then the full horsepower of the inner machinery goes to work and in the fullness of time delivers an authoritative verdict. I have made the effort of doing this anew for the central assertions of Jesus of Nazareth, courtesy of Pope Benedict XVI, and concluded that most modern Christians have got it all wrong.

However, I do not wish to embark upon an evangelical mission here, for the simple reason that the right view, for what it’s worth, is almost trivial. Jesus probably really did believe a lot of that nonsense about Yahweh in the Old Testament. But he played his part with such consummate genius that he rose far above the Jewish context. He said stuff that can resonate for all people everywhere. He reflected our genocentricity as deeply as anyone else in history.

The best science is not only fact-driven but visionary. Newton had a vision of absolute spacetime and celestial clockwork. Einstein had a vision of classical spacetime and physical unification. Darwin had a vision of the tree of life branching over geological time into countless species, all struggling to prevail. Dawkins sees life as driven by chemical replicators that build lumbering robots to fight and die for them. I see consciousness as the radar of the tree of life, tracing the landscape of reality at the boundary so the tree can grow new buds.

In this vision, the individual consciousness that each of us cultivates is not an island universe but a facet of a multifaceted omniverse. Ancient Hindus saw consciousness as like an ocean that we swim in, and the sheep of monotheism see their own souls as immersed in the heavenly glory. In any case, the “inner space” of consciousness transcends our personal introspective faculties.

All this is hard to describe, but I hope you will cut me some slack to drift into supernatural thought from time to time. I’m still junking the alternatives.

Hum: I want to know how you became the judge and jury on what is sufficient evidence for Christianity. You are just a human being like me who has put your faith into something; in your case evolution, in mine God. Your highest appeal is to your evolutionary indoctrination that is constantly changing as new evidence upturns the old. You appeal to a standard that is subjective. My appeal is to the Word of God.

A: We all judge as best we can, using our logical faculties on the evidence available to us. Whether I am just a human being is moot. If I am, as of course I modestly imagine myself to be, then so was Jesus, of course. And if Jesus was a mortal man, even one who was perhaps “supremely gifted” and perhaps a “consummate genius” (these are my own words, and I already regret their extravagance, since there is no real evidence that Jesus was either of those things), then the whole claim of the Bible to be the Word of God goes up in smoke.

Hum: You, as I myself, do not come to the table without bias and prejudice, just like those who claim their is no god do. The only difference between you and I is that I appeal to a standard that claims itself to be objective in that it is the very word of God. Evolutionary science is belief based on assumptions that are not proved. As I have said before, how can you prove something that only happened once and that you were not there to witness?

A: You appeal to a standard that makes a very big claim for itself. The claim is without merit. Therefore, proofs derived from it are invalid. I do not claim to prove my assertions about the big bang, the origin of species, the basis of morality, or the purpose of life. I claim that on these very complex questions we can arrive at sensible views by the methodical trial-and-error approaches characteristic of modern science.

Hum: The twentieth century is the most blood on record to date, largely fueled by lack of accountability to God’s standard and by the changing face

of ideas, where everything is judged according to the individual's own relative subjectivity or imposed by a handful of "enlightened" individuals whose vision was not as grand as was first imagined.

A: Given the approximately exponential increase in human numbers in recent times, there were more people alive in the twentieth century than in all of previous history since way back. And a lot more progress, so it is unsurprising there were more recorded bloody deaths. As for subjectivity, appeal to the Abrahamic God is the ultimate in subjectivity. The great "I am" is just a rhetorical underscore for the believer to swear "I" without fear of punishment for blasphemy. Jesus was an "enlightened" individual whose vision was not as grand as first imagined. My proof? It was not grand at all. It was just human.

Carl: I was talking about myself getting accused of backsliding into supernatural thought.

A: This paranoid epistolator thought you were talking about his own fideistic forays into popist propaganda. It seems we each talk about ourselves when talking to the other – there must be a contribution to the theory of self-reference there somewhere.

Talking of paranoia, Carl Sagan had the genial thought that science is paranoid thinking applied to nature. Some truth in that, but it works much better for religion.

Talking of science, my head is still buzzing from an afternoon struggling with the mathematics of E8 with a few physicist friends (we take time out from software to study string theory and the like). The now-famous Californian "surfer dude" Garrett Lisi discovered a few months ago that the math of the Standard Model plus gravitation was coded in the "monster group" E8 and posted a paper – "An exceptionally simple theory of everything" – that has hit the theoretical physics community like a tsunami. Lisi doesn't have an academic job, spends his summers surfing in Hawaii and his winters snowboarding in Nevada, and yet has "gobsmacked" the world's greatest physicists as neatly as Einstein did 102 years ago.

Soja: If I were you, I would write about the perennial philosophy concept you arrived at after reading Father Bede's religious version. Philosophy is what you are familiar with and expert in. As for your exploration of religious ideas, you are still a long way off. No need to create a new god. God doesn't need to be created or invented by anyone.

Bud: Measurements are things that we have manufactured. They are useful in that they allow us to communicate with each other about our world, but they do not seem, yet anyway, to reveal the ultimate mode of reality of anything. Nirvana is said to be the direct experience of reality with no concepts – no concepts getting in between your awareness and reality. I call it experiencing the truth, or crystal clear nirvana.

A: When I make a measurement it is real. Naturally, I apply abstract concepts, but I do so in reality. When I experience emptiness (and I do sometimes, even without ritualized meditation) it seems real too. Without concepts I cannot judge that reality, of course, since judgment is precisely an act involving concepts. We experience reality in any case, with or without concepts. Concepts may get in the way, in which case it can make sense to initialize, reboot, make renewed contact with emptiness or nirvana (as we do rather radically in death) and conceptualize reality afresh. But reality without concepts is rather boring, I find.

Bud: The disease is people seeing themselves and things as inherently real, as somehow permanent. Once you are operating within that delusion, then war makes sense, torture, all the rest. It's "me" against the world. But this will happen with or without religion. It will happen because others look different, or they have what you want, etc. It will happen as long as the fundamental delusion of a permanent self persists.

A: Our selves and other things are as real as it need get. There is a kind of error in seeking always for the ultimate gold standard, as if the everyday standards, however refined, are doomed to inadequacy. Maybe they are in the last analysis, but long before then we shall probably have replaced them with something slightly better. The yearning for an absolute kind of reality or truth is an error because it is insatiable. Emptiness is as worthless as a hole in the head. Dan Dennett argued quite sufficiently for the impermanence of the self in an empiricist context in his 1991 book *Consciousness Explained*.

Bud: An all-compassionate God letting His creations suffer horribly when he has the ability to save them? That doesn't seem logical even intellectually. Whereas the idea of emptiness does make sense intellectually, even scientifically. The theory of being able to experience emptiness directly is built upon intellectual understanding of emptiness.

A: Buddha said life is suffering. So letting one's creations suffer is letting them live, which is a blessing. If the true reality is emptiness, then lounging beside a pool in the sun is truly no better than being in a concentration camp. This strikes me as a *reductio ad absurdum*. An intellect that is content with emptiness has lost touch with feeling. As I see it, a good life is the expression of an embodied intellect acting and reacting in a structured world and in the process giving and getting love and other fillers of emptiness.

Bud: Buddhists aren't saying that concepts themselves are bad. But if you're constantly building an untrue reality for yourself via concepts, then what you expect to happen and what you want to happen is not generally going to happen.

A: You are talking for Buddhists just as Christians talk for Christians and so on. How about we deconstruct the subject and talk for just "we" and "us" and let the rest of us in? I don't wish to have to become a Buddhist to be able to agree with you. If I'm "constantly building an untrue reality" for myself, it's

in the sense that I'm building temporary or transient virtual realities that have only limited validity that I see through soon enough to change them. No problem, I just go with the flow.

Bud: Pain and suffering are in the eye of the beholder. Our experience of pain and suffering is itself empty. Karma comes into play here in terms of why bad things happen to good people.

A: This is hard to tell to someone who is suffering. Pain states can be identified in brain scans. I see merit in getting into the medical details and using science to make a difference at the same level of reality as the pain or suffering itself. This does not escape the karmic treadmill – but what makes you think goofing off into nirvana is different in this regard?

Bud: Emptiness is not some horrible, cold, negative, nihilistic state. It is just the absence of the false notion of a permanent self, of you, me, things. It is precisely the false belief that there is a permanent, self-sufficient entity in a person or in objects that cause of to suffer.

A: Agreed, but this is all basic philosophy. Like zero in mathematics, emptiness just a starter. By the way, the entities of mathematics seem pretty permanent. In fact a standard graphical representation of the monster group E8 would work as a Buddhist mandala.

Bud: Accepting that things are impermanent is very freeing and actually brings a lot of joy, contentment, and the ability to more truly love others. We are no longer trying to possess them, because we see that there is no permanent aspect of ourselves that is capable of possessing them, and that they are not solid, unchanging entities capable of being possessed.

A: Some things are impermanent (but not E8), yet Mormons, for example, think that love is forever, even marital love when rightly implemented. If all but emptiness is illusion, then other people are too, and so is love and all the rest. Emptiness is really nothing to crow about.

Bud: Emptiness isn't a thing. It is the state of things. Things are empty of inherent existence, of some permanent aspect. A simpler way to say it is that everything is constantly changing. Do you agree?

A: Heraclitus said everything changes. Hegel made this step 3 in his cosmic dialectic, and called it becoming. Step 1 was being, or the idea of Parmenides that everything is, and step 2 was that everything was not, was nothing. Being – nothing – becoming: the first dialectical triad on the march toward the Absolute. But as I said, most of mathematics seems pretty stable to me. Not much change there, except in our knowledge. A world of eternal Platonic forms, if you believe in that sort of thing.

Bud: And we can absolutely love others, even though things are always changing. That's how our relationships can grow and change from bad to good, or from good to bad.

A: Can we? I see a lot of illusion there. We think we love, it turns to hate, we meet someone new – a tragicomic mess of planetary proportions, a big smear of richly aromatic poop on the surface of the globe, slowly crystalizing into a monstrous machine that will bury us all. Then all change will be frozen into the buried poop. Once the present slips into the past it becomes eternalized as a layer in what people glossing Einstein call the 4D block universe.

Bud: What I'm saying is that every millisecond, the immediately previous instance of form and awareness has, in effect, died. Each new moment is a new instance or state of that form and of that awareness. It is a continuum, and so there is a relation to the previous and future moments of form and awareness, but you can't pin any of it down.

A: I agree with most of this. This phenomenon was discussed by William James about a hundred years ago and by Oliver Sacks much more recently. I reconstruct it in logic as a succession of worlds (something like virtual realities) that pass with a decahertz rhythm, somewhat like movie frames generating a stream of phenomenality. Each frame can be defined digitally, since its resolution is finite, and therefore coded as a bit vector in a unit hypercube with a discrete infinity of dimensions. Worlds without end, but all pinned down, as stable as math itself.

Hum: God, our Creator, has spoken and revealed Himself to us. To make sense of life, of origins, of truth, of logic, of morals, of the uniformity in nature, of personality, God is the only explanation. All the other explanations cannot make sense of these things.

A: This confuses three things that when disentangled reveal insights that enable us to make progress here. Soia speaks and reveals the self to us. Goof makes sense of life, origins, morals, and personality. And Bopp makes sense of truth, logic, and the uniformity in nature. These three entities are tied in a knot that invites precisely the confusion displayed above.

Soia, the self of introspective awareness, is an organizational consequence of the interaction of a hundred billion neurons connected via a hundred trillion synapses, where each neuron regularly fires rhythmic bursts of millisecond spikes to its neighbors in the human neocortex. Soia develops and deploys language and reveals facets of personality and character within folds of re-entrant circuitry that creates levels of reflexive awareness. Humans can easily make mistakes when attributing speaking voices and characterizing selves, and the human relation to Soia is generally unstable and ringed with paradox.

Goof, the god of our fathers, is a genetically anchored focus of purposive striving that results in concentric circles of selfhood and value. The outer circles define life and species identity, inner circles define family and kin, and the innermost circles define an organismic self analogous to the self of the immune system, within which self cells are genetic clones. Genes have cooperated to replicate for several billion years and have grown increasingly efficient at playing complementary roles in ever more complex organisms

over evolutionary time. The phenomenology generated by genes for striving purposefully can be seen by humans as godlike, but in any case provides a good foundation for Soia.

Bopp, the being of physical phenomena, is the mysterious source of the intelligibility of physical phenomena, where arbitrarily exotic configurations of energy in spacetime apparently admit of arbitrarily deep mathematical modeling, all constrained by layers of logic built on an ontology that supports a reasonable concept of truth. The question of how far the inner coherence of the physical universe reaches is still under investigation and may reveal new surprises, but it is already evident that physical reality as we now understand it provides an ample foundation for Goof and therefore a good foundation for Soia too.

This trinity suffices to outline an explanation for all previous theology and metaphysics and therefore to provide a definitive explanation for all practical purposes that need concern us. A huge convoluted network connects and surrounds these three entities in a collective mindworld that we have no way to escape and no need to dismiss. At the periphery of this network is utter ineffability.

Introducing Pansychism

Carl: Does anyone have any guesses as to why I am overwhelmed by an emotional rush when I am isolated in nature and in the presence of the wondrous beauty of the mountains? Why do I find a sea of mountain tops breathtakingly beautiful, and comforting to look at? Why do I get a feeling up there that I can only describe as magical?

A: My guess relates to panpsychism. Panpsychism was the subject of a special issue of the *Journal of Consciousness Studies* titled “Does physicalism entail panpsychism?” and based on a target article by the Oxford philosopher Galen Strawson.

Apologist dichotomism notwithstanding, consciousness may reasonably be seen as an emergent phenomenon composed of parts – which for want of a better term we may call *qualia* – that represent the psychic poles of bipolar entities that reach down to the very roots of the physical universe. This can work in a picture of the mind as arranged in concentric zones or circles – or *mindworlds* in my terminology.

In this picture, consciousness emerges in the inner members of a set of such concentric circles, whose outer members potentially circumscribe the totality of reality. This kind of concentric-circles view was advocated by the consciousness scientist Alwyn Scott in his 1995 book *Stairway to the Mind*. A very similar view was propounded by the Oxford pharmacologist Susan Greenfield in her 1995 book *Journey to the Centers of the Mind*.

As people, we live very largely within the innermost of these zones, where the individual and personal quality of consciousness is prominent and where

evolution by natural selection can work efficiently over the generations to optimize the mechanisms that enable us to rest content with these inner zones for most practical purposes. However, several experiential states cause us to break out of these zones and seek comfort in wider circles, so to speak, where of course the “us” here refers not to something separate from this cosmic cyclone of psychic zones but just to the emergent entity that tends to concentrate where the twistor winds tighter.

Psychic states that tend to cause such dilation or such a sense of the soul expanding are numerous and have numerous labels, which typically have a religious cast (since they are not well understood states). Among these are the states to which you refer, where you are isolated in nature and feel the presence of “wondrous beauty”. These states seem good for a good reason, if my analysis makes any sense here.

Think of life on Earth as an outgrowth of the Earth itself. Think of each of us as a spiralling peak (of zones on a spiky ball, the Earth) that is rooted in the Earth itself. That is, our twistor systems of psychic circles spiral right down into the planet. As our moods dilate, the psychic music that formerly consisted merely of harmonies playing in the higher circles suddenly hits great bass notes, where the “rock” music of the deeper zones is excited.

So far so poetic, or not, but where’s the science here? Well, evolution worked way, way back on our primeval ancestors to make them thrill to good prospects. Imagine the thrill when a microbe finds a food patch, or a bug stumbles on a turd, or a patriarch like Abraham sets off with his clan into the green fields of the great wide world. The soul expands to fill the space set before it, and the soul rejoices. This is the expansion of life in action, grabbing what it can and making the most of it. All this is deep in our genes.

So when you stand on a mountain and feel your soul exult, it is because somewhere deep in your soul a bass rhythm is excited that says – Space! Freedom! Opportunity! Go for it! – and triggers a cascade of pharmacological effects in your limbic system.

This is all my humble opinion, as hypothetical as it gets.

Dude: The scale, isolation, amount of detail, and so on provides a input to the brain which starts a cascade in the brain as it starts accessing its catalogs of past experiences. What you feel is the summation of your life experiences overlaid on the current input. If you had a different life you would have a different view.

A: This cannot be right. By any informatic measure, the input to the brain is quantitatively similar to what it is in any other likely situation, except perhaps for a rather higher dose of UV photons. The only salient difference is in the sensed drama compared with other life events such as rotting on a couch. Sensory overload leads rather to brain reactions in the schizoid direction, as overstressed neural coalitions stagger and crumble under the strain.

Dude: A few questions:

- 1) Do you perceive the Big Bang as a willful act?
- 2) Is the purpose of everything for us?
- 3) Is pain and suffering natural or is it necessary?

A: Ad 1: No. Will came much later – unless you interpret “will” as Schopenhauer did, which seems wilfully heterodox.

Ad 2: Purpose is perhaps best understood as an apparent directedness caused by the regular conjunction of certain events in the evolutionary past, such as when we say the purpose of the eye is to see, essentially for the reason that our ancestors survived better with eyes. So if the purpose of everything is a legitimate extrapolation from that, it can only relate to a comparable goal, as in Lee Smolin’s speculative scenario whereby the purpose of our universe is to maximize its production of black holes (which spawn new universes in a Darwinian process).

Ad 3: Both, in accordance with a concept of natural necessity that Saul Kripke has articulated. (Sorry for all this name dropping.)

Lin: In answer to Carl’s mountain question: sex.

A: It may be a confusion to associate sex with other peak experiences. Many more people have sex in lowlands than on mountaintops, and many Hollywood dramas put the big sex scenes during psychic lows in the story, for example when the hero needs a last boost to finish the job, whatever it is.

Nukes

Robbie: Was Truman right to give the go-ahead to drop the first atom bomb on Hiroshima?

A: To echo Margaret Thatcher, yes, yes, yes. In fact I confess to having been tempted by the idea of vengefully nuking Medina and Mecca, just to get even with the Islamites for the Twin Towers.

Robbie: What are we supposed to do if we wait until a small boat is anchored in the approaches to London or New York with a nuclear device primed to go off and given an option we can’t refuse? Should we wait that long?

A: If they nuke one city, we shall have a pretext to glaze over half the Middle East with radioactive silicate and thus bury the hotheads once and for all.

Carl: But with all of the information I have today, I would not have dropped those bombs on those cities. I do not think that it was necessary.

A: Nuking those cities is what kept us alive during the Cold War. Without an example not only of how big a nuclear bang was but also how crazy the

maniacs in command were, we would surely not have escaped a thermonuclear exchange with the Soviets.

Dude: How easy it is for all of us to sit here at our computers and say that we would push the button and kill all those babies to end their suffering and make the world a better place, knowing damn well we will never have to, while telling those who might that it is okay to do it for us.

A: Doubtless you are familiar with the psychology experiments where students are persuaded to torture their fellows with electric shocks because a man in a white coat tells them it's okay. And with all those normal Germans who did their bit to ensure the trains to Auschwitz ran on time. We could all do such things. This is the true moral horror here.

Robbie: It's either them or us! Whose side are you on!

A: This is an existential crisis. Militant Islam is mad clot disease. (The prophet Pbh said humans grow from clots of blood. A clot is a fool in some English dialects.)

Carl: We are not at war with a people. We are at war with an ideology that is harmful and dangerous.

A: The propagation vector for harmful and dangerous ideologies is people, people who become mad clots, like zombies in all those horror movies, where the hero has to cull them or die.

Soja: For me, as for millions of other believers, faith in God is fully compatible with reason and belief in science. I believe in God based on reason and my understanding of scientific principles.

A: Good for you.

Hum: The Bible is our guide – the clear instruction of Scripture.

A: This is another example of mad clot disease.

Carl: You said: “Without an example not only of how big a nuclear bang was but also how crazy the maniacs in command were, we would surely not have escaped a thermonuclear exchange with the Soviets.” This statement would have credibility if you changed the word “surely” to “possibly”. Because you simply don't know that. You don't have to blow up a city with real people in it to show how big your bomb is, or how prepared you are to use it.

A: In my semantics, “surely” has the same truth conditions as “with high probability” and the additional perlocutionary force of urging the height of the probability. I would judge that the statement thus parsed has nonzero credibility, and that your sentence would therefore have more credibility if you inserted the qualifier “more” before “credibility”. In any case, to return from metalanguage to the original assertion, I think anyone who has reflected on the psychology of Stalin and other leading Soviets would agree that a live

demonstration of the atomic bomb exploding over an enemy city was probably the least that would get through their thick hides.

Carl: You also said: “The propagation vector for harmful and dangerous ideologies is people, people who become mad clots, like zombies in all those horror movies, where the hero has to cull them or die.” Is this your assessment of the vast majority of the population in Muslim countries? Are the good majority of them mad zombies beyond rescue? Are you saying that destroying the civilian population in Muslim countries is the only way to defeat the ideology?

A: No, no, and no. Affirmative answers do not follow in any way, via conversational implicature or otherwise, from my statement. The disease vectors are the zealots, who may be a tiny minority. I would submit that these zealots, who freely confess their embrace of death over life, are mad zombies beyond rescue. I fervently hope we can destroy them without excessive collateral damage, for destroy them we must, and it would be a pity to take out millions of harmless civilians along with the zombies. However, recall the assertions of Bush 43 and Sam Harris that we must target not only the extremists but also the communities who harbor them.

Hum: Is everybody a mad fool who does not hold to your view or just particular Christians and Muslims?

A: No and yes, respectively. Anyone who regards their holy scripture as instruction has erred foolishly, in my view. Instructions are instrumental rules, to be followed in order to reach an explicitly proposed goal. Instructions for operating machines or baking cakes are the typical paradigms here. The apparent instructions in ancient religious texts are hard to fit to this paradigm for the dual reason that the proposed goals are inadequately specified and the relations between the proposed means and those goals are inadequately validated. One might as well try to follow an old alchemist recipe for making gold. It is foolish not to work more critically with ancient texts.

Hum: You said: “The prophet Pbih said humans grow from clots of blood. A clot is a fool in some English dialects.” Are you including yourself in the category, then, since (a) you would be included in his view that humans grow from clots, and (b) in your view, you recognize this dialect and the validity of the definition?

A: I understand your reply as a rhetorical witticism and smile accordingly. The prophet Pbih was as wrong on this question as on many others. The English dialect meaning is of course only coincidentally related, so far as I know. I have no wish to insult the millions of ordinary people whose cultural heritage is Islamic. On the contrary, by using the label “mad clots” for the fanatics I hope to help the moderates distance themselves from the madmen, who may be seen by analogy with the cattle who contract mad cow disease as suffering from a disastrous infection of the brain.

Carl: If you are that certain that Stalin is the threat, bomb Moscow not Hiroshima. If you are making a pre-emptive strike, at least make it against the people who are going to strike you. You can say we killed two birds with one stone, since we had to end the war with Japan somehow anyway. But bombing Moscow might have made the Japs cave, and then we would have averted the cold war as well.

A: This is a complex and difficult issue, but bombing Moscow in 1945 was not a option. Public opinion would not have tolerated turning so fast on an ally who had borne the body-count brunt of the war against Hitlerism. Not only that, there were many Westerners who quite reasonably sympathized with socialist ideals and who would have been aghast at such a betrayal of “Uncle Joe” and all he seemed to stand for. More to the point, Stalin declared war on Japan shortly before Hiroshima and was massing the Red Army to take Manchuria and Korea. An extended ground campaign in Japan would have played to the Reds’ strength and sealed the fate of Korea. Anyway, fire-bombing Japanese cities was practically as bad as nuking them, just more expensive in B-29s and airmen.

Carl: Describe a scenario that would have led to thermonuclear exchange between the Soviet Union and the United States had we not bombed Hiroshima. How would mutual annihilation not have worked as a deterrent if we had not bombed Japan, but rather shown the power of the weapon in another way?

A: The Soviets would have doubted our will and pushed harder in Berlin in 1949. Perhaps we would have lost Berlin. Then the Soviets, emboldened, would have stationed even more tanks in Eastern Europe than they did in fact, which were already enough to push the much thinner NATO forces back to the North Sea after less than a week of conventional fighting. Given this hard fact, NATO policy was to go nuclear first in the event of a Soviet tank thrust in Germany. We had kill zones mapped like minefields. As soon as they filled with tanks we would have tac-nuked them. We were ready to turn Germany into a radioactive desert before getting pushed off mainland Europe. The stated purpose of the British nuclear deterrent was to prevent another Dunkirk by escalating fast to ensure the Americans didn’t back off and leave us exposed. All this depended on the credibility of our will to kill. Convinced?

Reviews and Statements

Lin: You state that Theodore Dalrymple humiliated Sam in a book review. Well, you must have read a different review than the one I read in City Journal published in the fall of 2007. He did not humiliate Sam in the least. He humiliated himself by attacking Sam with no substance to back it up.

A: To be sure we are on the same page here, here is the relevant part of what Dalrymple said: “This sloppiness and lack of intellectual scruple, with the assumption of certainty where there is none, combined with adolescent

shrillness and intolerance, reach an apogee in Sam Harris's book *The End of Faith*. It is not easy to do justice to the book's nastiness; it makes Dawkins's claim that religious education constitutes child abuse look sane and moderate."

I find this critique of Sam's book to be entirely within the bounds of reasonable response, and quite capable of being backed up with more substance, if the format had allowed it. Dalrymple's review was far from perfect, and included indulgently long quotations from the sentimental ramblings of a long-dead bishop, but there was some sense in his case. I think the main merit of Sam's book shines through regardless. The urgency of Sam's case, given 9/11, excuses all its faults. And Dalrymple was amply deferential to Dan Dennett, who is my favorite among the "four horsemen" of our impending apocalypse.

Lin: It was embarrassing to read his review. He misunderstands the depth and breath of what Sam writes and draws conclusions that even a sophomore in high school would find silly.

A: My embarrassment was rather for Sam. Dalrymple came over as a typical member of the pampered literati, who could hardly be expected to thrill to Sam's urgent appeal, but Sam's book is no work of high art, as I hope Sam would be the first to admit. However, Dalrymple's main hit came after Sam had responded with pained indignation to the review.

In his reply to Sam's response to his review, Dalrymple summed up like this:

The arguments for and against the existence of God are by now pretty well rehearsed, and I do not think that any of the new atheists add anything much to them. Second, the historiography of religion employed by most of these authors, though admittedly not by Daniel Dennett, is one of bringing up only damning evidence. This does not seem to me to be an honest appraisal of religion's role in human history. Third, the metaphysical difficulties of human existence are considerable, and I do not think the abandonment of religion would make things any easier. Finally, with regard to Harris's statement that it may be ethical to kill people with certain ideas, I fear the likelihood of mission creep.

This seems fair to me. Killing people is not a good way to prevail in a battle for hearts and minds, and my advocacy in extreme circumstances of nuking our antagonists is of course a tactic of very last resort.

Lin: Dalrymple says: "the authors often appear to think they are saying something new or brave." and he supports his belief by claiming they are no more brilliant or insightful than he was at the age of 14 years. This is a remarkably arrogant statement.

A: I say good for him. I confess to having had very similar thoughts myself at age 14, and I imagine that many people did. That is an age where the idiocy of popular religion begins to dawn vividly in the awakening brain.

Dalrymple is my age, so I naturally understand what he means here. Of course, we could have devoted our free time to writing atheist diatribes, but in a world before 9/11 we found other pursuits.

Let me try to get this right. My blog records that I read Dan Dennett's book in May 2006. Given my years of acquaintance with his works, it was natural that I wrote: "Excellent: millions of Americans should read it." My blog says I read Sam's book in October 2006 and responded with "Good brisk argument, overstated, mixed tone and topics." As for Dawkins, his divine books are certainly the earlier ones on genetics, and *The God Delusion* is an intemperate rant, as a miscellany of reviews on my website attest. Chris Hitchens I recall from my Oxford days. He was a student Trotskyite who became a drunken Fleet Street hack and has now struck gold, in his own way. Wonderful guy, I love his writings, but he's no scientist or philosopher, as he freely admits. So much for the four horsemen.

Lin: Dalrymple ignores the depth and breadth of Sam Harris and his ideas. Sam Harris lives, writes, and speaks in the 21st century. In his day, Bishop Hall would have no comprehension of Islamic fundamentalism, nuclear weapons and the deadly combination of religion and martyrdom that is thrust upon us in modern times.

A: Dalrymple sees things in a longer perspective. He worked for years as a prison psychiatrist in England, where he treated many prisoners from minority backgrounds who converted in prison to Islam. He understands the existential crisis that militant Islam represents for Europe. As for Bishop Hall, like any educated Christian he would have known of the "deadly combination of religion and martyrdom" that Islam has boasted from its earliest years.

You seem startled by my claim to find this critique of Sam's book to be entirely within the bounds of reasonable response. As it happens, I have just published a metareview of an extremely heated exchange, sparked by a book review, between two eminent philosophers of my acquaintance, which shows by example that hard words can be useful. Reason must accommodate the passions, or we all die. Criticism must be sharp to be effective.

Soja: The following article by Mr A.C. Morrison, former President of the New York Academy of Sciences, first appeared in the *Reader's Digest* of January 1948. On the recommendation of Professor C.A. Coulson, FRS, of Oxford University, it was republished in the *Reader's Digest* of November 1960. It shows how science compels the scientists to admit the essential need of a Supreme Creator. [Article deleted here – AR]

A: You quote an article from a 1948 issue of the *Reader's Digest* and expect to impress us? I know of Mr Morrison, since for some years I was a member of the New York Academy of Sciences. I know of Professor Coulson, too, since I studied from a mathematics textbook of his in 1970.

Morrison's confession of faith is entirely typical of many eminent men of former generations, and is naturally impressive in its own way. His detailed arguments are as may be, some vaguely persuasive but some in need of update, and tend to elicit our sympathy as we contemplate the role of religion in a rounded life. For this reason, indeed, I am most unwilling to cast my lot uncritically with the "four horsemen" of the atheist apocalypse and would earnestly plead for a more judicious approach.

However, practical politics are decisive here. The Islamists have put these questions onto the political, not to say military, agenda, and we must respond in kind. On military matters I am no wallflower.

Hum: Roger Penrose said: "The original 'phase-space volume' [of the universe] requires such ... fine tuning that the Creator's aim must have been [precise] to an accuracy of one part in $10^{10^{123}}$. One could not possibly even write the number down in full ... [since] it would be a '1' followed by 10^{123} successive '0's – more zeros than the number of elementary particles in the entire universe. Such is the precision needed to set the universe on its course." (1989, p. 344)

A: Since Roger is a divinely inspired mathematician, He would wish to see His quotation correctly framed and glossed. He uses the God metaphor (and even adds a cartoon caricature of the Creator drawn by His own hand) to explain that the initial conditions for the big bang would have to be fine-tuned as cited to generate exactly the universe we now live in. But your quotation mangled the numbers. The accuracy is one part in $10^{10^{123}}$, where each "hat" is an exponentiation, so in words we get "ten raised to the power (ten to the power 123)", which could (not!) be written out as "1" followed by a thousand trillion trillion trillion trillion trillion trillion trillion trillion trillion zeros (where 1 trillion = 10^{12}). Given that entropy scales logarithmically with this number, and entropy reflects information content, this means our universe is defined by 10^{123} bits, which I already told you many posts ago. But so what? Does this prove anything?

Hum: Frank Salisbury said: "A medium protein might include about 300 amino acids. The DNA gene controlling this would have about 1,000 nucleotides in its chain, one consisting of a 1,000 links could exist in 41000 different forms. Using a little algebra (logarithms) we can see that $41000 = 10^{600}$. Ten multiplied by itself 600 times gives us the figure '1' followed by 600 zeros! This number is completely beyond our comprehension."

A: A similar mangling of the numbers messes this one up, here more absurdly. Try proving by logs that 41 thousand equals ten thousand six hundred! In fact, Salisbury is saying that the number of possibilities in the combinatorial space of nucleotide sequences for a thousand-link chain is 4^{1000} , which is about 10^{600} . If you stop to think a moment, you can easily see this by recalling that a megabyte is 10^6 bytes and you need 20 bits to address a byte in a megabyte of memory, so 10^6 is about 2^{20} , and $2^2 = 4^1$, so $2^{2000} = 4^{1000}$, which is about 10^{600} . Again, so what?

Hum: You are the scientist. To me it just goes to show that the probability the universe came into existence by chance is slim to nil.

A: *Final Statement to Bloggers On Faith*

Sam is a fine young man who has done excellent work in the cause of deconstructing the monstrous edifices of belief erected in submission to the Abrahamic God.

For all their faults, his books are vital and effective tools of deconstruction. Literary poopsters who seem to assert otherwise may see trees but are missing the forest.

Sam's assertion that it may be ethical to kill people for their ideas is a reasonable proposal for an ethical debate. In some circumstances, such killing must be ethical.

Weapons of mass destruction are means of last resort, but Western civilization is a good so profound that it is worth using nukes to defend it from Godist barbarians.

Soja: Mystics of all religions claim that God cannot be adequately defined. When Harris talks of the impracticality of the word "atheism" it sounds similar to the concept of not having an adequate word to describe the reality of God.

A: Well said. Sam is a mystic in the making.

Slave to Love

A: [March] Just dropped by to see how long this thread has gotten.

Carl: There is no reason why a couple cannot have a contract to deal with a split when they have decided to merge financially as well as lovingly, and where kids are involved. But this contract need not in any way involve a pledged commitment to remain in love with, and stay together forever with, your chosen partner. That is the stupidity that I object to.

A: You evidently don't have a clue what real love is. Declaring one's love of another unto death before G-d and the world can be an existential moment, the moment of truth in a world of shifting facades, the twistor upward to eternal splendor for a pair who otherwise live in grubby normalcy. This, by the way, is the vision of Mormon marriage, of celestial partnership for all time. You can keep your unions of convenience, your instrumental sex with fancy techniques and contraceptives, your legal loopholes and nuptial contracts. Anyone who cannot find that moment of truth has lost the only thing that makes life worthwhile. Let the rats breed like rats. Go for true love or forever hold your peace.

Carl: I sometimes get the sense that you guys think that I have something against everlasting love, like Romeo and Juliet, and Wesley and Buttercup. I

don't. I think that those are beautiful and inspiring stories. I'm just practical about what a rare a thing that is.

A: Yes, it's rare. All the more valuable. Even rarer is love of "G-d" (whatever) – all the more valuable. If you can't be content with loving "G-d" then the best you can do is to bond with a significant other – just don't expect the deal to be perfect! It's only second best.

Carl: If families are the fabric of our society, will this continue to be the case in the future?

A: Let's relativize our claims to our society. When people grow in pods on production lines instead of in human bellies, the game changes, of course. Until then, we make the best of what we have.

Carl: People in love are the true happy ones. Marriage is moot.

A: I'm down with that. But love and marriage go together like a horse and carriage. Deal with it.

Carl: I'm in the dark about this new G-d thing you have going on here. Can you elaborate, or link me?

A: The semantics of this "G-d" word have puzzled me for years. Some people seem to know what they mean by it and even succeed in deriving wise sayings from that purported knowledge. So I persevered. And now I think I have a sensible interpretation that makes some such purported knowledge, at least, defensible. Naturally, the word is so beset with false and confused interpretations and sheer demagogic charlatanry that one hesitates to use it at all. But the core significance is so interesting, and the need for a word with that significance so hard to deny, that I guess the best thing is to make the best of it.

Still, it's hard to explain, and the last thing I want is to cite a reading list that happened to work for me but in all probability would fail to do so for anyone else. I want to mull it over until I can find metaphors and so on to make my interpretation (since it probably is mine, and partly idiosyncratic) come over vividly enough to work well. For me, the messiness of the whole business was materially reduced by the discovery of Goof, as glossed in earlier posts here. Genocentric evolutionary theory can really shed light on this whole tangle. That's where I want to get my thoughts more coherently together. If I can convince Richard Dawkins, I guess I'm home and dry.

From the inside, independently of theoretical biology, the feeling is one explored in various ways by just about all philosophers and deep thinkers. The hall of mirrors of discursive thought gives out somewhere, and one is left with a constructed self dissolving into the shining, as it were. The sensed blend of integrated autonomy with dependence on the great externality is an identifiable state of being, not perhaps of mind or of body, since these are pre-cut concepts that hinder union with the shining, but of being, which soon

burgeons forth into familiar categories and leaves one back in everyday reality, just a tad more enlightened.

Carl: People are afraid of life ending. This is what heaven is for. People are afraid of love ending. This is what marriage is for.

A: The popular idea of heaven is a psychic pacifier that people deploy to fend off brooding thoughts of death. But behind it is a trace of awareness that the post-death state of being, from the inside, is radically unknown. What *is*, the domain of being untrammelled by thought and reflection, must be like something from down close beyond the buffers of thought and sensory orchestration. My favorite metaphor is that the end of a human life is like the sunset on a day. Night follows, and stars become visible that were previously obscured by daylight. What stars will dawn when the self dissolves and the body corrupts?

As for marriage, this is a social convention designed (largely unconsciously via the hidden hand of evolution by natural selection) to enhance and protect procreation. Until we refashion society to handle kids some other way, we need some such institution. It works, and the ramifications around it contain a lot of hidden wisdom. As with so many of evolution's creations, there's a logic behind some of the apparent contingency of it all. But in a world like ours it can go wrong very easily and in very many ways. What do we do? Junk it? What for? I don't see a viable alternative yet. What we need is a post-modern equivalent of a tribal village.

Intelligent Life

A: [April] Carl says beam me up, there's no intelligent life down here.

Carl: What about the multiuniverse? That is bigger than our universe and outside of our universe what is supernatural about that? Move on from this cosmic or special meaning and purpose that you've gotten into your head. I am asking scientific questions about the future of natural selection and genetic science.

A: Multi, schmulti, who cares so long as it's between physicists? We can spin the math, pile on the words, eke out the evidence, all we like. In the end it fizzles out into wild ideas that fail to refer coherently. Purpose? Ask the Templeton winners. My impression was it's anything that moves us. We set a goal, we go for it. We have sex, we have kids. They want to do better, some do. The winners have more kids, the rest go under. Purpose? Ha! If Adolf or Vladi grab pole position and say they want clones, we evolve that way. Or not, depending on who fights back. Survival of the feistiest.

Carl: I said that there is something bigger to think about than our own personal meaning that we give our own personal lives. Global warming is one example. Our situation in the universe is another. What we are to do with our new found power over natural selection is another.

A: What is a person? Our personal concerns are universal. We expand to fill the vacuum placed before us, albeit thinly. A person can be more than a body. General Motors is a legal person. The God of our fathers is a moral person, for whom the more conscientious among us perform miracles of self-alienation in genuflection to the idol. All persons are godlike because the gods are persons writ large. We project, then genuflect, forgetting the self-emptying that made the god. Even the Goof is such a projection, albeit a forced one, compelled by our genes, a proof of our slavery to evolution. We see virtue in intergenerational sacrifice.

Carl: Your personal relationships with your family and friends are so much smaller than these subjects. This does not diminish your personal meaning in any way. It's just that you are a blip of a blip, and nothing more in the grand scheme of things.

A: Big and small are relative and contingent. If the Goof is as small as a gene, does that diminish His Mighty Power? If Hawking is as big as the schmultiverse, does that help him move his fingers? Therefore, blips of blips can be bigger than big. And your big can be my small, my big your small. Agreement is moot, all devolves to politics.

Carl: Number of offspring is now moot to the future evolution of the species. Genetics and birth control are the future.

A: Tell that to the "lesser breeds without the law" who are still breeding like maggots. Given our goofy morality, we can't cull them, so what do we do? Hand out welfare until we all starve? Malthus in action!

Carl: Democracy and cooperation may win the day. Then we will have to decide as a society, as a collective, together, with our thoughts and ethics, and our imagination, where to take our own evolution from here. It is highly unlikely that a Hitler type will be making that decision. We will do it as a collective society. And that is why I am bringing it up for discussion.

A: Democracy will give us Hollywood action heroes for sons and airhead starlets for daughters. Could be worse, but they'll still have to do battle with the lesser breeds. Mad Max here we come. Seriously, we have no precedent for responsible decision making on reproductive questions except the sanctity of marriage (in goofy tradition a socially hallowed setting for the raising of kids) and the Hippocratic oath (but medical science is not so far advanced that we could just let scientists design our kids for us). I see chaos until we learn to live with a more robust and nuanced ethic of life and death. I think the best precedents here are the more philosophical debates in the Judeo-Christian tradition.

Carl: Evolution is our slave now. And this is a significantly different situation than that of the last billion or so years. Monumentally different. This is the point that I am trying to explore.

A: Sure, we can in principle do much more than before, but actually doing it effectively is something else. Again, what about the demographic time bomb that needs action now? The planet is drowning in demographic waste. We have no technology for a big cleanup that does not seem filthier than the disease (think industrial holocaust and nuclear apocalypse). Perhaps we can use our “slave” evolution (the new golem) to fashion bugs that infect the unwashed poor and spare the medicated rich. But control is key here: think of our incompetence at handling AIDS, which would be a goofy prototype of how to prune the stock. As you see, this is not an issue for the squeamish.

Carl: It seems like I am the only one who marvels at the significance of the fact that humanity now finds itself dealing with a problem that no other living creature in the billion year history of life on earth has ever had to deal with. What do we do about being too successful at breeding. Natural selection is over. Human selection is here. But humans are natural, so I guess it’s still natural selection. But very different from the natural selection of the last several billion years.

A: Not at all. I discussed this bilennial singularity exhaustively in my 1996 novel *Lifeball*. The hero realized he was at the cusp of a big event on planet Earth that would probably lead to its evolving into a lifeball, a single integrated planetary organism. Gaia had just grown its www neuronet and was waking up. To cut a long story short, the hero seeded the brew and online agents called angels took over. The top angel – Global Ontic Driver – delegated discipline to another angel called Supreme Angelic Terminator of Antigod Nihilists.

Carl: I would expect this kind of blatant racist talk from your average Brit living in Germany, but up until now, I did not think that you were an average Brit living in Germany. You live in Germany 2008 but you talk like someone in Germany circa 1941. Can you be specific about who these “lesser breeds” are?

A: No, because our science there is too primitive. I was merely quoting from Rudyard Kipling, who coined “lesser breeds without the law” over a century ago. Of course I am not a blatant racist. German orthodoxy circa 1941 was based on several misapprehensions that are entirely foreign to me. But like numerous breeders of fine thoroughbreds, I see the difference between well-bred specimens (who may nevertheless be over-bred and inbred) and ill-bred mongrels (who may nevertheless be strong and noble and carriers of worthy traits). In fact, most ill-bred people are to be found among the background populations of the thoroughbreds. You know the phenomenon as “white trash” and I guess they would be among the first to go in a big cleanup.

Every day I meet individuals from other cultures who are as noble as your average white bread. I welcome them as brothers and sisters. But lesser specimens are not far behind, in any culture, and we need to hold the scum at bay. The genetic stakes are in part a lottery. Each one of us holds tens of

thousands of cards, some good, some bad. We shall need a lot of patience to identify, isolate, and replicate a winning hand for all.

There will be mistakes. For example, imagine a fashion sweeps America for upgrading with genes for big boobs. Then, a few years later, we find the gene also causes the big-boobed ladies to lose all their IQ points, or whatever. Too late! We have a few million defective products out there. Imagine the law-suits! And imagine the decades of welfare payments. Recall the thalidomide generation: nice enough people but without arms or legs. They deserve the greatest compassion. Obviously we can't just cull people like that.

Carl: It is a fact that every Arab child born, every African child born, every Philipino child born, have exactly the same capacity for intelligence, and compassion, and living the same kind of lives that you and I live. They were just born in a disadvantaged place. that is the only difference. They are victims.

A: Victim mentality is for losers. Capacity is for dreamers. If capacity is all, then every sperm is sacred (this is a Monty Python quote, in case you decide to accuse me of semenophilia). The words "fact" and "exactly" in your PC rant are incorrect. The words "just" and "only" are poor choices too. Your use of the word "disadvantaged" betrays your real opinion. You see yourself as an advantaged one. Okay, have the courage of your convictions and go help the disadvantaged.

Carl: I am not one who is easily offended. But your use of the word "lesser breed" is quite hideous and appalling. I am truly disgusted. No wonder you think that Hitler types will rule the future. You seem to be one. If this is what you meant by this subject being "not for the squeamish", maybe I am squeamish. But carry on. I'm keen to hear more about these lesser breeds.

A: Now you see it. Believe me, I am as compassionate and unwilling to offend as you are. But the topic requires a lack of squeamishness that borders on the superhuman. That was the problem with the Nazi effort. They took on more than we, at this point in the evolution of our species and civilization, can chew. It's easy to say that this or that group is worthless so let's just kill them all. But implementing cleanly is hard. It was too hard for the Nazis. Therefore, to push away the day when we have to go that way again, we say never again.

This is why I say keep the tradition in view here. Philosophers and religious thinkers have long pondered questions of life and death. Perhaps a lot of what they said was nonsense, but even a trace of wisdom is better than nothing here. Let us not lunge into engineering life-forms we lack the courage to kill if we don't like them. Let us define a firebreak and hold the line against all attempts to fiddle with our germ line before we know exactly what we are doing. The simplest way to do this, given the way people are now architected, is to make it taboo, like a religious taboo. The germ line is sacred.

Carl: I don't think we would need to kill any currently live human beings in a cull or anything, but certainly if we discover genes that are responsible for white trashiness we would gradually engineer that out of our future offspring.

A: The politics of this is the killer. Imagine we discover a gene that expresses as a rabid fascist mindset. We'd have pressure groups to euthanize infants with the gene, to lock up adults with it, to force parents to have their gonads screened for it. Imagine a dozen equally dangerous genes, and imagine hypothetically that they appear with higher frequency in, say, Jews, who are genetically distinct enough to make something like this conceivable in principle. I think you would find there were a few pogroms in response. So I say we need to be prepared for the worst as we hope for the best.

Carl: I think that the science will move very fast, perhaps to perfection in no time. They might figure it all out at once. The theory of everything. And then our only limitation is our imagination.

A: This is an example of wishful thinking. Only someone who had never tried to do some serious science could say this about a patch of science where a lot remains to be sorted out. You would be astonished how much, at how humble a level, can go wrong in the attempt to realize such a vision. Stephen Hawking speculated bombastically about a theory of everything a few years ago, and it all went as horribly wrong as it did for Lord Kelvin, who said something similarly foolish a century earlier. Hawking had less excuse, since half a century earlier Kurt Gödel proved a math result that applies to physics too and makes the Hawking dream simply impossible, as Hawking has in effect quietly admitted since. You sound like Ray Kurzweil celebrating the Singularity. Robots cleverer than humans within a generation! They said that a generation ago too.

Carl: Certainly proceed with caution. But sacred? Nonsense. Unless you believe in God or some higher meaning or purpose for our original germ line. The original was designed by old clunky evolution. Genetic science is much better than evolution.

A: Hubris here reaches its hubristic peak. Designers trying to design complex machines where a lot of things need to be optimized at once nowadays resort to evolutionary algorithms, in effect running evolution inside a big computer. If you try this, you will learn much more respect for biological evolution, which has optimized a lot of our features in a truly vast combinatorial space during a colossal parallel computation that has gone on uninterrupted for about a billion years. We don't have the ghost of a chance of doing better. Nature is the computer. Read Stephen Wolfram. We can tinker, we can fiddle at the edges, we can speed up some developments and smooth out the natural rough edges. As I see it, genetic science is evolution, ratcheted up a notch. We are the agents of an embodied intelligence, so to speak, vaster than our own imaginations. For lack of a better name, I call it Goof. Goof transcends our best efforts in genetic tinkering as vastly as the Sun outshines our biggest H-bomb.

Carl: Assuming we survive all of our current perils such as global warming and religion, will our science never catch up to natural selection? Will we never learn enough about our own genetics to engineer perfect human beings who learn to live in a sustainable, peaceful and harmonious way?

A: Almost certainly not, because of the law of unintended consequences. As for perfect human beings, what are they? Nazi storm-troopers, perhaps? As for “sustainable, peaceful and harmonious,” shame on you for such PC cant. Go tell the Islamists that they are not perfect until they peacefully and harmoniously tolerate Hollywood stud material impregnating every womb in the world.

Carl: As for the “sacred” original germline, is it not that of a single-celled organism? What we have become since then is simply a result of random mutations that were favored due to their tendency to help us reproduce. Now that such random mutations will no longer be selected, we are in charge of where the germline goes from here. What it currently is, is nothing more than the result of mutations helpful to procreation. What is sacred about that, now that procreation is nothing special?

A: Poor logic. It’s a line, and it goes on and on. Now it’s found a new way to expand the combinatorial space of possible mutations (which may never have been random in your sense) by harnessing our computers. Not that this makes much difference, since the effective computational power of a few billion sets of gonads hosting molecular computing (which may exploit quantum parallelism) is much more than we can yet muster. On randomness, google Greg Chaitin, who defines it as algorithmic incompressibility. Random mutations are just ones we don’t have a simple explanation for. On quantum computing in biological macromolecules, google Johnjoe McFadden, who in his 2000 book points out that molecular jiggings can “test” combinatorial possibilities before settling on a mutation. Just a little lookahead there could transform those numbers that people use to poo-poo the chance of a Boeing 747 self-assembling in a junkyard.

Carl: What do you suggest we do about the impending doom of over-population? What is your solution?

A: Most babies come from sex, and there the law is an ass. Enforcing a ban on sexual procreation would mean regular infanticide of healthy babies, and that just would not work. The only solution here is almost intolerable patience, as we persuade those birthers of fundamentalist freedom fighters to give it a rest.

Carl: We have cured diseases in the past. Why do you not think that in time we can cure them all?

A: Naïveté again. What is a disease? Attention deficit disorder? Asperger’s syndrome? Pink nipples? Anyway, cure one and another one pops up. Cure heart disease and people live long enough to get cancer. Cure sexually transmitted disease 1 and people have more sex and get STD 2. And so on.

It's a roll for the medical profession and a disaster for medical insurance premiums.

Carl: How can it be shameful to dream of peace and harmony?

A: It is shameful to be so uncritical about the meaning of words that are used shamelessly by shamans and politicians. Define your terms, as Oxford philosophers are wont to say.

Carl: They don't have to tolerate something that is not happening. Do you have a real life example in stead of this made-up Hollywood stud thing?

A: Western corporations pushing decadent lifestyle vectors like cable television, movies, pop music, pornography, junk food, carbonated beverages, alcohol, and cigarettes into traditional communities. Soon after come the gene tweakers who say all that body hair is disgusting, and while you're at it how about a nose job, a boob job, a brain job, and painless sterilization at no extra cost?

Carl: But obviously we will need to crush religion before we can get there. But if it does have to come down to some sort of law, you greatly exaggerate the consequences with regards to killing babies. Cooler heads will prevail.

A: Obviously. And what is religion? Reading books about Jesus? Watching Deepak Chopra videos? Parading in the streets waving knives with blood streaming down your head? Pro-life demonstrations? As for killing babies, what do you do if a population is multiplying out of control, like a tumor? Hand out baby formula and kill the mosquitoes for them? The only effective solutions involve reducing numbers. That means people dying, and anyone who claims to be in control must accept the blame for the deaths.

Lin: There are real solutions to overpopulation. Practical solutions that require education, sound policy, and problem-solving. We are a superpower, for god's sake!

A: Just before the fall of the Wall, the Soviet superpower was a first-rate military menace, despite its third-world economy. Now the USA is a menacing military power but an economic also-ran. Correcting for purchasing power parity (which means the overvalued dollar) you will find that both Europe and East Asia are richer than the USA. The end is nigh. The USA cannot impose a military or any other solution on the third-world population explosion. The best Americans can do now is ride the storm and avoid going under to pestilence, war, famine, and death (the four horsemen) themselves.

Lin: It would take real commitment and rolling up the sleeves. And while we are at it, we could also eliminate poverty, illiteracy, AIDS, and the dying of 30,000 children everyday from preventable diseases.

A: It won't happen. Fortress America will come first, to ward off the four horsemen raging beyond the oceans. I could mount a detailed argument to make this sound more plausible, but I don't have the time.

Lin: A woman gets pregnant and she has exceeded the allowable number of children you have deemed she can have. Just what are you willing to do to this pregnant woman?

A: Exactly. In a liberal democracy it doesn't compute. But the Taliban would have an answer, at least if they were capable of understanding the problem.

Carl: LMAO.

A: Laugh my ass off? Is this one of those cute nuggets of American folk wisdom? A workout routine for an English as a Shouted Language class at Li Yang's new "Crazy English Tongue Muscle Training House" in Beijing?

Carl: Pay people to not have babies? Are you talking about money for education? Education that Allah does not need you to have babies because Allah does not exist. And education that there are many fulfilling and meaningful things that you can do with your life without having a family.

A: Pay people enough not to have babies and they'll have babies. That's what people do when they have plenty of money and no-one to fight with. No, we have to ratchet up the tension. That might put them off burdening themselves with offspring until they sort things out first.

Carl: The population boom is worse in the third world, but even in the western world, we still make too many babies for the amount of resources there are on the planet. We can set an example. We are in the process of crushing religion and supernatural driven lifestyles that are harmful to our planet.

A: LOMA! So we're in the process of crushing religion "and supernatural driven lifestyles" (oops, I forgot that God is not a natural expression of inchoate yearnings but a supernatural driver) as we trade CPC (cocktail party conversation) on a Christian forum? Let's set an example by castrating ourselves and saying to all those fertile studs just waiting to take over the world, "Hey, I did it, so you can do it too!" LOMA!

Carl: Please keep your apocalyptic vision of the future separate from my very optimistic, peaceful and harmonious vision for humanity.

A: Prepare for the worst, hope for the best. Apocalypse is not so unlikely. Imagine telling Americans in the 1930s that within a few years people would be dying hideous and violent deaths worldwide by the tens of millions and you would have been accused of rampant apocalypticism.

Carl: I have considered the tipping point of mass famine, war, and the deterioration of societies everywhere. If it gets too bad, there may need to be some laws passed to save us from the horror of mass overpopulation.

A: LOMA! Some laws! “Thou shalt not have have thy daily bonk without a condom on that conk” and the like. Look, you’re not thinking in the right league yet. You might as well try to resist a tidal wave with a Canutian edict.

Lin: Regulations may have to be imposed one day. If you have evidence that education and diplomacy will do the trick in plenty of time, please share so we can all put our mind at ease.

A: Regulations! That’ll stop people having sweet forbidden sex when no-one’s looking. How about we (gulp) rap them on the knuckles if we catch them? Educating women to want the privileges (and the toys) men have is the only strategy that has a ghost of a chance. That will make them fight tooth and nail not to get laid by the first charmer who comes their way.

Lin: Third world dictators are a big part of the problem – and of course religious ideologies. We must find a way to deal with these knaves or we will resort to violence.

A: Knaves? They are the saviors of their peoples. How about first world dictators? Bush 43, perhaps? If they’re all knaves then none are, in any sense that stings. What is violence? Force and speed. Sounds good to me, if it works. The trick is to do it right. America can do a good Blitzkrieg. It’s the follow-up that’s weak. Gulf War I was a big success because we pulled out fast. Gulf War II was a flop only because we hung around like a bunch of aimless stiffs after we won the speed trial. We should have pulled out fast and just let the baddies kill each other any way they wanted. They’re doing it anyway, just draining U.S. lives and dollars for nothing, nix, *nada*.

Lin: We can use money, humanitarian approaches, education and diplomacy. You are ready to send in the SS to enforce laws restricting people (and taking away their rights) and making all kinds of aggressive moves to “solve” the problem.

A: Rights? To endanger my lifestyle with their disgusting offspring? Let’s first get clear on what our rights really are. Start with the golden rule: Do not do unto others what you would not like to have done to you. To deflect the obvious countermove, I would like others to terminate me if I become so obnoxious that no-one wants me around any more. I find that prospect acts as a bracing constraint on my more overtly antisocial tendencies.

Overpopulation, evolution, genetic enhancement and so on are not ideas for the squeamish. Participants need to wise up or leave the kitchen. Talking about repugnant things is not doing them, just as calling a teddy bear Muhammad is not blasphemy.

Lin: Because we are a superpower we have a moral obligation to help the world’s poor pull itself up by its bootstraps. Third world countries need our help, not our scorn. They are victims of a meaningless cycle of poverty and so on. We must offer them help and give them hope.

A: Here we go again. We call them victims in a self-righteous attempt to legitimize our own eagerness to go in and sort them out. Our aid workers are the storm troopers of cultural imperialism. Make the victims dependent and infantilize them. Then sell them ice cream and SUVs and get them hooked for as long as Pax Americana prevails on the surface of Rockball 3 in system Sol.

Carl: Everyone knows what a disease is. Cure both heart disease and cancer. Cure both STD 1 and STD 2. And so on. And any more that you care to add to the list. Eventually you will run out of diseases to list. But we won't run out of cures. Not the way that science is advancing at exponential speed.

A: There are plenty of easy cases to get us started, sure. Enough to put off the day when we realize that our polynomially (but not exponentially, for resource reasons) increasing robotic powers will never catch up with the combinatorial cussedness of macromolecules that don't have a clue about our ever more artfully contrived ideas about what constitutes health and well-being (any more than the rationals will catch up with the reals, in the mathematical *coup de foudre* due to Georg Cantor, visionary of paradise).

Carl: Everyone knows what peace and harmony mean. One group might not like sexual promiscuity being shown on TV, while another group might like it fine. But they both know what peace is.

A: Is peace what you make with a Peacemaker missile? With its multiple megaton warheads you can make a lot of it. Or is it what passeth all understanding when you die? Or is it what Joseph Chamberlain made "for our time" at Munich in 1938? As for harmony, what about the harmony of nations in Europe, or of proletarian consciousness in China?

Carl: We all know what we're talking about when I say religion. Stop this acting like these are vague undefined terms I am using. We are all here because we are trying to crush religion.

A: Not me, boyo. I want to understand it first. I don't hold with crushing life-forms before we have a convincing reason to do so. Religions are endangered species that promise insights aplenty to the patient observer. To parry an obvious move, militant Islam is not a religion but a political atavism that we understand only too well already.

Carl: No one has to die. It means preventing more births, not killing already born people. No one has to kill anyone to stop the population problem. Hundreds of years of education and the spreading of democracy will end religion.

A: Excuse me but we all have to die, unless you go with Ray Kurzweil's idea that medical science will move so fast that we have a shot at high-tech immortality. He forgets that legions of young thugs, eager to live their worthless lives to the full, will move in and terminate the high-tech survivors

unless the robots get to nurse us all in their gentle grip first. Then we become juice pods in the Matrix.

Carl: We all have the goal of making the religious people come to their senses, and come to realize what we know full well: that God does not exist. I call that crushing religion.

A: You haven't understood my great discovery. Goof, the God of our fathers, exists and is real, and is a potential object of scientific analysis. Goof is the attractor behind genetic determinism, the proof that natural selection acts first at the level of genes, not of individuals or groups. Goof is great, and Dawkins is his prophet! Why crush that? It's precisely the discovery we need to revive the flagging birth rates in the first world. The birth rate among natives in most of the first world is well below replacement. The USA is only the exception because it has so many other "races" in the mix.

Carl: White trash are people of low intellect.

A: White trash carry the genes of greatness. Just their hard luck that the bum genes won out in their personal chromosome recombination stakes. Every now and then a genius comes from such unpromising stock. We need to take care here. And since when did IQ equate to quality?

Carl: If we discovered a gene that is responsible for white trashiness, then we would ask the medical scientists to engineer our babies without the gene for low intellect.

A: Or any other shade of trashiness, to complete the thought that you are evidently too squeamish to state.

Lin: I hesitate to get between you and a hard place because your words do make me squeamish. But I'm not getting out of the kitchen quite yet.

A: I just wish to pep up the debate to a level where it has a hope of engaging with the real issues here. Living in a country where one is elbowed mercilessly aside when one does not assert oneself aggressively, I have learned to say what I have to say with vigor and confidence.

Lin: The idea is education and self-sufficiency. If you don't hold ideals that promote improvements for humanity, then you can call it whatever comes to mind including imperialism. Imperialism exists. But it is not coming from non-governmental organizations who work to stabilize starving and war-tattered people.

A: Wait, who said I have anything against sending in the storm troopers of cultural imperialism to sort out the "lesser breeds without the law" (note those quotation marks and the distancing from literalism they imply)? I see it as one of the greater glories of our culture that we are still ready to go out and put the world to rights. Fortress America will be a sad development, and I'm glad we still have awhile to keep the melting pot bubbling.

Lin: If we decide not to let the “cooler heads prevail” and to hell with the Constitution, then we might as well be in bed with the Taliban.

A: The Taliban understand nothing. All we can learn from them is to have the courage of our convictions. If something is right, it’s right to fight for it.

Lin: First world countries are the major problem of overpopulation. The problem in the USA is over-consumption, not over population. We are only 5 percent of the world’s population but we consume 25 percent of the world’s resources. That is not sustainable.

A: The USA, for all its faults, is still the shining castle on a hill, still the repository of the hopes and dreams of humanity. Why else has the USA been educating all the world’s smartest people in its universities for the last few decades? The USA is the great exception, and has a free pass to consume exceptionally just so long as it keeps delivering the goods. That period is ending, true, and US consumption should be throttled accordingly. I see high-tech solutions to all our resource and environment problems, even global warming. We just need to keep the faith, and stay on message when it comes to fighting down the zombies who want to swamp us all with trash.

Lin: You seem to be caught up in this worldview that offers no options and is going to result in “someone” making genetic decisions for the rest of us in the best interest of us. Sorry, I don’t trust authority figures who want what is in “my best interest.”

A: There are plenty of options. But most of them require some stern moral fiber to implement. We have no serious option but to trust authorities on so many things, it hardly makes sense to draw the lines with our gonads. Who are we to judge what traits we should express in our offspring when there are geneticists who know more than we do to help us? Our role is to insist on a proper power structure among medical and other authorities to ensure that their verdicts are properly validated.

Lin: You are a nukes freak.

A: No, I’m a former physicist who sees nukes as the key to globalizing politics. Without nukes, there would be no horror to prevent WW2 levels of militarism from breaking out regularly. Nukes need to be controlled globally and internationally. This will happen, but first we need to shock and awe the barbarians who don’t believe in our will to prevail. The biggest question with nukes is whether we still have the balls to use them.

Lin: And you expect me to sit here and smile while y’all decide how and what restrictions you will bestow upon females?

A: Yes. Islamic women do it every day. We all accept restrictions on our personal freedom for the sake of public peace. We wear modest clothing and make way for each other at crowded doorways. We accept police surveillance and speed limits. Men suffer as much as women, just differently.

Carl: Although you really sound like you'd like to be the one pointing the gun and pulling the trigger. It doesn't sound like you lament that it might come to this, but rather that you can't wait until it does. Creepy.

A: Game theory says that the rational play is often the loser. To win, you have to be ready to burst out in irrationalism at the first affront. Think of all the pushy people who get their way in this world. Show too much understanding and you're pushed aside. Creepy, to me, is the opposite of assertive. Standing up for yourself is not creepy, by definition.

Carl: No one is trying to stop sex. You are confusing sex with having babies.

A: Sadly, I'm not. Some people have a poor track record when it comes to contraception. Fornicating without contraception is fine with some people. It can even add a spice of excitement. If a welfare state picks up the tabs for the baby, who cares? For trash, this is a no-brainer.

Carl: Religion is not a life form. I do understand it. We do have convincing reason to crush it.

A: It is on my goofy theory. Our individualism is an illusion at various levels. Each of us is a society of trillions of cells, working together because it pays off. And religions are societies of billions of people, working together because it pays off. The fact that you show no awareness of this truth suggests to me that you do not understand religion. And the fact that you think it is any more possible to crush religion than it was, say, to crush the entrepreneurial spirit in communist societies shows, again, your naïveté.

Carl: Plain old Islam, without the militant part, is still a serious problem where population control is concerned. As well as other problems.

A: Indeed. We need to get to the heart of that and reconstitute it in rational mode to revive our birth rates. Then, and only then, can we roll up our sleeves and take out the trash.

Carl: Goof is not God. Goof is not religion. I am talking about religion: Christianity, Judaism, Islam. Religion is a problem in our society. Goof is not. I have been talking about crushing religion. Not Goof. You have a habit of trying to find an argument where none exists.

A: True.. There is something here for science to study. If we can raise our appreciation of God to the Goof level we win. I have a habit of finding points where a sharper approach can help. This is of course argumentative.

Carl: Religion is institutionalized superstition administered to the masses through brainwashing, fear, and keeping the hordes ignorant. The priests and Imams may work together, but the flock are just brainwashed drones. The fact that you do not see this suggests to me that you do not understand religion.

A: I see it, but brainwashing is a matter of degree and can be voluntary. If I see my bread-and butter issues are solved in a church, hey, why not? Those,

not intellectual issues, are what count for most people. You and I are exceptions. Intellectual scruples are a luxury.

Carl: It's just a matter of a couple of more generations with ultimate access to information (the Internet) and this religion thing will be a fringe cult that is laughed at by your average enlightened human.

A: You may be right. We have enough information to need a new approach. But people still yearn for standardized and institutionalized spirituality. Not many people want to go it alone and spend years in the wilderness. We shall laugh as fashions change. Will it be progress? Who knows?

Carl: We, our species, through birth control and future genetic science, will have complete control not only of how our species evolves but of how all life evolves from here on out.

A: A historical precedent hints at the benefits. Individual humans have always had some control over their own one step of evolution via mate selection, and those with social power often used it to surround themselves with kin and sycophants. And we have long bred animals for traits we valued, as Darwin described at length. We certainly shall soon have much more control than hitherto, but complete control is chimerical. First, we need to adapt our selections to the facts about which genes do what and how they express in the targeted organisms and environments. Then we shall be challenged to design and implement scenarios on the basis of those facts to push in a preferred direction.

We shall find, first, that what genes do and how they work is so tightly constrained that we have little freedom for maneuver, and second, that our very designs and preferences are natural products of our evolutionary heritage. For the most part, we shall probably end up simply endorsing what natural selection has already given us, and find delight in appreciating as if for the first time how "wise" mother nature was in making us as "she" did. By chance, I read last night that the healthiest feet in the world are on people who still go barefoot, and that our whole multi-thousand-year experiment with footwear has done more harm than good. Well, it brought us "boots on the ground" and other priceless concepts, I suppose.

Carl: What is life? Why has it evolved one way for billions of years, since the beginning of time, and now we have something entirely new. One species is in charge of it all. At a genetic level.

A: The life question remains unanswered, therefore the claim to be in charge of it is vacuous. In charge of what? We are riding a tiger. One life, one species, one genome. *Ein Volk, ein Reich, ein Führer*. We need only plant one set of rogue genes to ruin the whole show. And even quantum hyper-computers will be unable to simulate nature to the level she simulates herself at every turn, in a planetwide molecular-scale computation that runs 24/7 with no downtime for bug fixes. So the risks are bigger than for any previous human adventure.

Agreed, we have a breakthrough that may be even greater in scope than that of computing, which brought us the *vé-vé-vé* (in a French transliteration of the German). Perhaps a company will come to dominate gene updates and find a patented delivery medium, such as a DNA strand caged in a polymer ball and administered like a (bio) virus. Then we shall all become hooked on our nightly bug fixes. Forget an update and go down with an exotic flesh-melting ailment. Apply the wrong gene patches and watch your genitalia shrivel away. All this and more will be everyday life in the brave new world.

Carl: What direction shall we take evolution? It's up to us. There are worse problems to have I guess. I find it all very exciting. What a time to be alive!

A: As you study the facts, your horizons will probably close in. When we discovered internal combustion engines and aircraft, we thought, wow, we can go anywhere now! Rocketry brought dreams of conquering the galaxy. Nuclear power would bring electricity too cheap to meter. Returning to the question, human evolution is already bracketed by technology. I think fusion is the next step, Borg style. Seamless interaction with the world of machines. Put our flesh in robocans and forget the gene tweaks. For consider what our genes do. They code for proteins. And proteins are just carbon-based macromolecules. The whole bioworld is molecular Lego-world. Nature has already tried all the options for those pieces. Their limitations (mechanical, thermal, and so on) are what hold us back. And our machines can already correct for that.

My guess in the early 1990s was that we shall create what I called in my novel *quagmire* life (a *quagmire* is a quasi-Gaianized mechatronic-infotonic-robionic exosphere, where mechatronics is the fusion of mechanics and electronics, infotonics is the fusion of informatics and photonics, and robionics is the fusion of robotics and bionics) as the primordial soup for Susupteq (the superconscious superorganism planted in the terrestrial quagmire) and then the Lifeball, which transmutes our six-zettaton rockball into a single living organism.

Carl: I don't have an appreciation of God to start with, so there is nothing for me to raise. But as for Goof, you are right, I do not fully understand your idea. If you'd like to have another go in your best layman's terms, I'm all ears.

A: Life on Earth finds a temporary and provisional realization in a landscape in which humans are the top predators. Humans revel in the glory of their own incarnations and feel like replicating their own success. But they sense too the imperfection of the creation as they experience it and its dependence on stuff beyond their control. In awe at the challenge, they surround themselves with taboos and fetishes. The Abrahamic God was a big step forward because its focal confabulation for all the taboos and fetishes related directly to the primary genetic imperative to go forth and multiply. The result was traditions that are in effect highly organized fertility cults.

So the Goof traditions are fertility cults. From them grew science and rationality, which rejected the taboos and fetishes but put nothing in their place except the purely intellectual desire to cultivate a better society. This desire is the tiny tip of a huge iceberg. The Goof cults found some deeper resonances in that iceberg, for the believers, and we need to recover them in order to replace those cultic practices with something more amenable to reason. Pursuit of rationality alone is no use for replication. It's more like a Buddhist striving for nirvana. The cultists will outbreed the rationalists unless or until the rationalists learn to tap the instinctive wellspring of genetic yearning celebrated in the cults. We're trying, with our celebration of pop culture and sensual lifestyles, but it's all rather basic.

Carl: Every year, more and more people decide that they no longer believe in magic men in the sky. There is no yearning for institutionalized spirituality in these people. They just realize one day, that this God thing is all bogus.

A: Sure, this is no contest. Even deep religionists say the men in the sky are illusions. Yet some people still go for ET and UFO cults. The yearnings are very amorphous. They lead people to New Age superstition and a vague interest in esoteric stuff and fringe philosophy. When such people see what nonsense they find attractive, some wish for more institutional guidance. They go hunting for a religion that can work for them, and suffer years of frustration. This has nothing to do with the bogosity of the God solution to the Goof yearning. Some people see that and go for the religion anyway, just because they like the high-minded company.

We all grow up in families and most of us have early experiences of a father figure. The genetic tug that the Goof cults celebrate finds a natural psychological expression in a supernatural father figure. If you don't care about reason and what may or may not be bogus, relaxing back into such a supernatural family with a safely remote father figure is sweet repose compared with living in the hard clarity of the here and now in an autonomous mindset. What drives the flight from the churches is, first, the absurdity of the doctrines of magic men and so on, and second, the smooth machinery of the welfare state that makes the social safety net the church used to offer superfluous. The genetic tug remains unaddressed. My goofy gloss on genocentricity is a start.

Carl: Children of believers or cultists, have no more reason to follow in the superstitious brainwashed footsteps of their parents than anyone else any more. The Internet, TV, media in general. Cultist parents can no longer keep the truth from their kids.

A: Sure, this is inevitable. But early conditioning counts for a lot. Rational scientists can nurse a corner of their mindworld that hosts the most egregious religiosity just because their first years were illuminated by faith. Such people see the cognitive dissonance intellectually but don't seem to mind, and make no effort to spotlight the contradictions. It reminds me of people

with neural deficits who don't recognize faces or don't admit that they have been crippled by a stroke. Faith as an opiate – that was an inspired analogy.

Carl: But what are your ideas of how we can tap into the instinctive wellspring of genetic yearning celebrated in the cults? I am still unsure that this yearning needs to be replaced by anything but rational thinking.

A: Set forth a future that promotes excitement and hubristic joy, with goals that are generations away. You are lucky enough to have been wired by the promise of genetic tinkering, and I by the *Lifeball* vision, but most people miss this sort of neural circuit building. For them, rationalism is precisely the dry pedantry of mathematics. There's no eschatology, no promise of transcendent improvement to raise the thrill that rewires neurons. Whereas the cultist brainwashing has been honed to perfection in this regard.

Carl: I see that you have identified an unsatisfied yearning. Have you a satisfier for it?

A: There is a gap between understanding a fact and living the fact, understanding orgasm, say, and having one. As rationalists, we need first some understanding of the state we wish to promote and then a plan to implement that state reliably. The state is one of vibrant joy in anticipation of a splendid future state of being, tempered by steady resolve to do what it takes to realize that state of being in the present, to be able to thrill to its enjoyment in our here and now. To promote that anticipation and its realization rationally, using information media, is a high art. To do so without descending to the mind games that cultists tend to exploit is extremely difficult.

Somehow we need to extract from the progress we see in science and technology a direction and a goal that work for us and our descendants as an attractor. For hints on how to do this, what better way than to study the goofy vision of our souls just doing time here but touched with the promise held out to believers of joining a heavenly host? To be rational, the goal must make sense in terms of our best understanding of nature. We must see the destiny of our genes as transcending their human vessels and finding ways to organize stuff that allow universal consciousness unfettered by animal rivalries, memory boundaries, bandwidth bottlenecks, bugs, age, whatever. In short, we need to be able to see and measure progress in the direction of becoming godlike.

Soja: Understanding God with our finite mind is a lifelong journey and nobody should be so foolish as to believe they have understood it all at any time in their life. So I remain open. If spiritually advanced people are to be believed, it is possible for everyone to love God. God is infinite and we get to perceive only glimpses of Him in many ways as He reveals Himself in different ways to different persons.

A: This is wonderful. You have the gift of clear vision in these matters. My revelation is still unfolding. For me, the Holy Trinity looks like this:

Boss, the “background of spatiotemporal structures,” is the natural environment for all our efforts. Physicists study the Boss, which may be analogous to the ground luminosity of which Buddhist meditators speak. Given the astonishing depth and subtlety of the layers of being revealed in physics, this manifestation of the divine mystery deserves the deepest respect.

Susie, the “self underlying subjective inner experience,” is the mental space within which all our dealings with reality seem to be located. Psychologists have hardly begun to understand its nature in scientific terms, but it is clear from my efforts in this field that the challenge is huge and will occupy us for a long time. Modern neuroscience offers a good way to get started, but as with the Boss there are mysteries here that deserve to be called divine.

Golf, the “genetics of living forms,” is the mysterious attractor informing the evolutionary tree of DNA life on Earth. Golf is an attractor for our natural strivings that reflects the activity of what Dawkins calls our selfish genes. A primitive (but still potent) precursor of Golf is Goof, the “God of our fathers.” For humans, breaking free of Goof is breaking free of our speciesism to embrace the deeper attractor of Golf. This wider embrace is natural enough for a modern person blessed by Susie, but usually falls short of embracing the Boss with similar intensity.

The Goof forerunner of Golf is analogous to a human personal self, as a sort of guiding ideal, acting at the level of our species. Humans are human because they have in evolutionary time recognized the Goof in one of the countless forms that human history records. A god of another species would be made in the image of that species. The breakthrough represented by worship of the Abrahamic God was that of internalizing a previously external form (an idol) and relating the attractor directly to a familial but transcendent (hence genetic) ideal.

When framed by the Boss and Susie, Golf becomes a potential object of scientific study in some distant future. Meanwhile, the smaller challenge of studying the Goof is still difficult. First, we need to put the politics of religion aside. As humans, we also need to put natural feelings aside, and do so without ruining our own humanity.

Anyway, thank you.

Panpsychism

Here, under the new pseudonym AtheEisegete, your humble author launched a new thread titled *Panpsychism* on a new blog, on a forum site hosted by Sam Harris himself, who may perhaps have become disenchanted with the panelist company or the intemperate posters or the comment management technology on the *On Faith* site. The regulars on Sam's new site were a more hard-boiled crowd – as you may soon sense for yourself.

Panpsychism Part 1

The first exchange below is copied from an *On Faith* post you may have already read above – which gives you an idea of the temporal overlap of the two threads.

Carl: Why I am I overwhelmed by an emotional rush when I am isolated in nature and in the presence of the wondrous beauty of the mountains? Why do I get a feeling up there that I can only describe as magical?

AtheEisegete: I would relate this to panpsychism. Consciousness can be seen as an emergent phenomenon composed of parts – which for want of a better term we may call *qualia* – that represent the psychic poles of bipolar entities that reach down to the very roots of the physical universe. This can work in a picture of the mind as arranged in concentric zones or circles – or *mindworlds* in my terminology.

In this picture, consciousness emerges in the inner members of a set of such concentric circles, whose outer members potentially circumscribe the totality of reality. This kind of concentric-circles view was advocated by consciousness scientist Alwyn Scott in his 1995 book *Stairway to the Mind*. A very similar view was propounded by the Oxford pharmacologist Susan Greenfield in her 1995 book *Journey to the Centers of the Mind*.

[And so on – see page 134]

So when you stand on a mountain and feel your soul exult, it is because somewhere deep in your soul a bass rhythm is excited that says – Space! Freedom! Opportunity! Go for it! – and triggers a cascade of pharmacological effects in your limbic system.

Junkie: Out of curiosity, how'd you come across these two authors?

A: Alwyn Scott was an author at Springer, where I worked back in the 1990s. When I told him of my interest in consciousness studies, he invited me to attend the Brain and Self Workshop at Elsinore, Denmark, August 1997. That hooked me, and I started going regularly to consciousness conferences. I met Susan Greenfield at the conference in Skövde, Sweden, August 2001. We talked about science over breakfast and she told me what fun it was to sit in the House of Lords.

However, my mindworlds idea came more from two decades of contemplation of the logical works of Saul Kripke, whom I heard lecturing in Oxford and London when he was still a hot young messiah. Together with some of the more mystical pronouncements of Ludwig Wittgenstein (whose *Tractatus* really impressed me) and the psychological works of William James (who talked about worlds in his reflections on religious experience), these works gave me quite a revelation when I stirred in quantum theory (especially the consistent histories approach of Roland Omnès and others, along with the decoherence story pioneered by Springer author Dieter Zeh) and post-Turing computer science (especially David Deutsch, whose views on the quantum theory of possible worlds recalled not only Hugh Everett but also Kripke). This is a rich stew.

Junkie: This reads a bit like a heroin story, replete with messiahs and revelations of how you got addicted and converted to a new age belief system where you were free to invent your own theory of mindworlds.

A: Never having smacked myself, I can't really endorse this, but I kinda like the terminology of messiahs and so on. The religious tradition has given such words ripely redolent meanings, just bursting with perlocutionary promise. Anyway, I'm cool with the disinclination to get too earnest here.

Pundit: What if there is a self beyond that which we generally hold to be our self? According to the scientific view, I (my self) exist now, but did not exist in the past, and will not exist in the future; and so it may be said that, scientifically speaking, there is both existence and non-existence. But I say that this cannot be.

A: All this dickers around with time. What *is*, was, and always will have been. Thus it is in Einstein's block universe. The logic here can be cast in set theory using what I think is a neat pun. The word "exist" breaks to "ex-ist" and "ist" is German for "is" (as Heidegger and others well knew). So we have a transition from "it is" to "it exists" (that is, it was) and hence to the strata of history. The set theory is of course the standard Zermelo–Fraenkel theory of the cumulative hierarchy of pure well-founded sets, in the von Neumann–Bernays–Gödel variant admitting pure classes. Your ontology goes from classes to sets as you clamber up the cumulative hierarchy.

What you get is the ordinal scale acting as a formal stand-in for time. In fact, you get a nice ice-cream-cone universe with a fluffy top that gives wonderful visions of homology with the big bang. Let me add, before I wash my mouth out with soap and water, that God breathed out a transfinitude of sets, which crystalized into the ice-cream cone with the fluffy top, which became the Calabi–Yau manifold twisting in the quantum foam and inflated to all we know and love.

Head: Whoa. You do have a thesaurus.

A: Harumph. Let's start with a diversionary maneuver. The self is layered, as many agree, and the layers go deep, as I assert. A good axiom for

panpsychists is that subject and object are equal and opposite. Any object presents a set of “phenomenal” surfaces that form bricks in the walls of the circles of any subjects for which it is an object.

So, to the maneuver. As a warm-up exercise, to get used to stretching the self beyond everyday bounds, I could do worse than repeat a heavy artillery barrage I fired at a Presuppositional Apologist (this is a kind of Christian fundamentalist) on another Sam Harris thread. I fired it to get his mind out of his god fixation by trisecting his god and pounding the pieces.

Hum: [repeated *in absentia*] God, our Creator, has spoken and revealed Himself to us. To make sense of life, of origins, of truth, of logic, of morals, of the uniformity in nature, of personality, God is the only explanation. All the other explanations cannot make sense of these things.

A: This confuses three things that when disentangled reveal insights that enable us to make progress here:

Soia, the self of introspective awareness, speaks and reveals the self to us.

Goof, the god of our fathers, makes sense of life, origins, morals, and personality.

Bopp, the being of physical phenomena, makes sense of truth, logic, and the uniformity in nature.

These three entities are tied in a knot that invites precisely the confusion displayed above.

[And so on – see page 133]

This trinity suffices to outline an explanation for all previous theology and metaphysics and therefore to provide a definitive explanation for all practical purposes that need concern us. A huge convoluted network connects and surrounds these three entities in our species’ collective mindworld. At the periphery of this network is utter ineffability.

Head: Why do you say three?

A: Astute question. The choice of three is a rhetorical device, to awake memories of the, ahem, holy trinity. In fact the number is rather arbitrary, since the rag-bag of phenomena the trio “explains” is huge and lacking any obvious ordering principle.

Actually, the physicist Paul Davies made a similar crude division of physics into the physics of the big, the small, and the complex. That stayed in my mind, since Bopp is big, Soia is small, and Goof is complex. But this is not a precise mapping, just a vague similarity.

All this is, as I said, a diversion. The cutely diverting idea here, for me, is that of Goof as a manifestation of human genocentricity. What this nasty phrase means is as follows. The fact that we are, as Richard Dawkins puts it, lumbering robots dedicated to the replication of our genes, so apparently

subversive of religion, finds its most vivid expression precisely in the religion Dawkins excoriates so mercilessly!

To be more exact, the shimmering ideal beyond the individual, beyond personal life and death, is a godlike “strange attractor” (to sneak in a term from nonlinear dynamics) that people use to celebrate cooperation and altruism, and to push for “family values” in politics. All this is highly suggestive to a scientist in the Dan Dennett mould.

My pansychist mindworlds hobby horse is beyond all this, but once I saw Goof I thought it worth a pause for a bit of evangelizing for good ole Dawkins fundamentalism: Goof is great and Dawkins is his prophet!

Shag: If this keeps up, I will be joining this thread, as they say, in earnest.

Cat: Thomas Nagel suggested in his book *The View From Nowhere* that pansychism might be true. Also, much more recently, Galen Strawson has been defending the view that physicalism entails pansychism.

A: Thomas Nagel’s view from nowhere is a neat phrase for a fascinating phenomenon, namely the attempt in classical science to defocus the subject altogether, as if to rise above all that finitude and achieve lift-off to higher realms. One of the last traces in classical physics is the observer in relativity (special or general), who traces a proper timeline and serves as a reference for velocities and accelerations.

Things got much hairier in quantum mechanics, which after the pixie dust settled revealed entanglement landscapes in which truth itself became relativized. Roughly, in a quantum multiverse with uncountably many branches, our trajectory carves out a big and growing entanglement of classical truths surrounded by superpositions (we carve out a “consistent history” in the Roland Omnès version of the story). As we entangle with stuff, it falls out of superposition. It’s like when we open the airtight catbox to find Schrödinger’s cat to be alive or dead, made classical, fixed. Anyway, the observer took a bow.

So, how is it with the view from nowhere? Strictly untenable, I say. This goes with the logic of my mindworlds, but let’s take it slowly enough to be sure we’re on the same page. At best, we can approximate “suprasubjectivity” asymptotically, and in effect this is the quest in classical science. Einstein, bless him, got as near as anyone, with his view that time was a persistent illusion, but he never grokked quantum mechanics and it subverts his sempiternal block universe. By the way, Brian Greene glossed the block as a sliced loaf, where we subjects experience successive slices as we crawl along our little timelines. The sting in the tail is that you can slice the loaf every which way, depending on how fast you go!

Anyway, this does relate to the issue, because Einstein got much of his certainty about time from his Princeton chum Kurt Gödel (on whose amazing logical theorems I wrote a distinguished Oxford thesis half a life ago). Now

Gödel also inspired Douglas Hofstadter to rave on at book length about “an eternal golden braid” that he reprised last year in his charming memoir *I Am a Strange Loop*.

This is a metaphor I can run with! We are strange loops in the Gödel sense. Subjective time loops the loop, in a logical process I can reconstruct fairly cleanly in axiomatic set theory. And this is the logical scaffolding for mindworlds. On which more later.

Galen Strawson’s recent writings inspired me to call this thread “Panpsychism”. Galen is the son of a distinguished Oxford philosopher whose books I studied with admiration half a lifetime ago. But he has some wits of his own, and his extravagant outpouring on panpsychism in the *Journal of Consciousness Studies* amused me. I am a longtime subscriber and contributor to the journal.

I have to quibble. Galen is no physicist, and he has no chance in tarnation of carrying through his project without a lot of support from physics, particularly the quantum variety. The rock-star philosopher David Chalmers, a couple of whose recent “End of Consciousness” parties in Arizona I enjoyed no end, especially when we created new verses for his signature contribution to philosophy, the zombie blues, has a more realistic appreciation of the enormity of this enterprise. For his approach, which gets deeper into math, Kripke logic and information theory, I have great and enduring sympathy.

So thanks for the word, Galen. Indirectly, I think, we are approaching the holy of holies, where an infinity of mindworlds swirl in a holistic quantum space.

Head: Bring forth thy stone tablets.

A: Okay. Start with young Ludwig Wittgenstein, who in his *Tractatus* said “I am my world” and “the world is the totality of facts, not of things.” Facts are what makes true propositions true, and consistent sets of truths define worlds. For Wittgenstein, there was one set of facts and one world, but that was a prequantum view.

More recently, Saul Kripke developed a logic of worlds that generalizes the view and fits serendipitously with quantum worlds as envisaged by Hugh Everett. Last summer, in fact (that is, in this world), David Deutsch and associates proved that probability theory works as intended with Everett’s views, so all this is now decent science.

It goes like this. Quantum reality is a “blooming, buzzing confusion,” to quote William James. The logic enters with worlds, seen as consistent sets of facts. In the new view, these emerge from the confusion and separate gradually (at the quantum level) from their neighbors. To use words due to Roger Penrose, I shall call the prefactual confusion the *omnium* and call quantum entanglement *quanglement*.

As we cruise through time, we quangle with the omnium to create ever more facts (sounds political, I know, but this is basic ontology now). New conformations of reality come into being, and as time passes come into existence (conceived as being with a past timestamp). In general, our subjective worlds (which are as objective as anything in the omnium) grow bigger, or perhaps go through successive phases or stages or determinations. Think of either one bubble growing bigger or a series of bubble stages, each more or less encompassing its predecessors. These are *mindworlds*.

A mindworld is centered on a subject. Or rather, a mindworld is the momentary embodiment or extension or realization of a subject. A subject is reflected one-to-one (equal and opposite) in such an objective configuration, such a constellation of facts, such a quangled constellation of the omnium.

Worlds emerge just as a timeline emerges in the omnium. By an amazing (to me) stroke of luck, some physicists recently realized that you could formulate quantum mechanics in a time-free system, by reconstructing time as an emergent property of a suitable series of such nested mindworlds (they didn't use my word, of course, since I am a prophet in the wilderness so far as tenured academics are concerned). This is important because it gives us room to unite quantum theory and gravitation (general relativity) in a single consistent framework – the holy grail of quantum gravity, the big TOE (theory of everything)!

So as time goes on, we quangle with more omnium and create more facts, thus blowing bigger bubbles of consistency, like rafts of sanity, in the phenomenal phantasmagoria. We emerge with our timeline and our world states. A world without a subject is a contradiction in terms. Scientists who imagine the universe before humans evolved are of course themselves the subjects, imagining an imaginary world, which is intentionally (this is philosophical jargon for symbolically related, like word to thing) related to the imagined configuration of the omnium.

I am equal and opposite to my world. As worlds evolve, I evolve too, in a cosmic dance of quantum exquisititude. You and I, and others, the whole lot of us, inhabit similar worlds that to a rough approximation often look the same. So we can agree on quite a lot. Our worlds are in fairly thoroughgoing quanglement. Of course there is no perfect isomorphism there. But for some people, like lovers, there's quite a lot. The mathematician Hardy once said that all mathematicians are isomorphic. Basically, he meant they agree pretty exactly about what counts as good math.

Now, since worlds are emergent and slightly fuzzy at the edges, so am I, so are we. We are limits of our worlds, to use another Wittgensteinian concept. Our worlds tend to define us, asymptotically, and we tend to exist, but in fact hover in a state of being (until we die, perhaps, when you could say we fall into existence as has-beens).

Essential to this concept is circularity. The universe coils back on itself through me to see itself, as Wigner, Feynman and other fine men have said. This I can model with a logic that owes a lot to Gödel and Hofstadter – Douglas Hofstadter, you may recall, wrote a big, slightly mad book about Gödel and last year a nice book called *I Am a Strange Loop*. A strange loop is a logical loop that involves a change of levels, so it looks paradoxical, like a Möbius strip with a twist to give it just one side.

My own modest contribution to all this was first to see how worlds of facts could be given a formal semantics that mapped into layers of the cumulative hierarchy of pure well-founded sets in such a way that the ordinal dimension looked like time and the transition from being to existence was reflected in the ontological transition from proper classes to sets, but let's skip the pedantry for now. Second, it was to invent the concept of mindworlds and suggest a mapping to collective photon states in brainwaves.

Unk: That may be where Wittgenstein started when he was young, but I doubt if he'd have said such a thing by the time he was your age.

A: Many brilliant thinkers do their best work when young, and Wittgenstein was no exception. He never repudiated the *Tractatus* and suggested binding it together with the *Philosophical Investigations* to represent his life's work. Consider Kripke's more mature reflections on the solipsistic tendencies of the *Tractatus* and deduce that the message there is still interesting (in a Kabbalistic way, perhaps) even if an older man might say things differently.

As I see it, old Wittgenstein simply bracketed his earlier work, by contextualizing and relativizing the transgressive narrative behind the numbered propositions. No repudiation there, and none possible consistent with the cultural pluralism of the later fragments. Basically, Wittgenstein never reached that height of monomaniac passion again.

I understand his predicament. My own warp-speed flights into the mystic realms of set-theoretic metaphysics were the highest I ever soared. Since then I have had my hands full working out the consequences and finding new ways to evangelize for the vision.

Shag: I saw the movie *What the Bleep Do We Know?!* A much better book is *Quantum Philosophy* by Roland Omnès.

A: I liked *What the Bleep* because it made quantum physics seem intriguing and gave viewers lots to get warmed up about. Who cares about the mad spiritualism so long as everyone's talking about it?

The Omnès book was fairly conventional, tho I like the consistent histories approach and am convinced this is the right way to go, at least when complemented with an Everett–Deutsch story of branching paths and emergent classicism.

I am convinced that quantum theory has the potential to revolutionize psychology and one day put it on a firm scientific foundation. Psychology

today is a mixture of empirical “tinkering” (as Vilayanur Ramachandran puts it) and folk ideas about the self and feelings and so on.

My prophecy: psychology and physics will merge in *psy-phy*.

Unk: In another thread on this forum, the argument seems to be that ideas, thoughts, insights, and hallucinations don’t remotely resemble that which is assumed to consist of matter.

A: In some ways, all of reality is like ideas, thoughts and so on. The quantum quacks, as I shall cheekily dub them, in *What the Bleep Do We Know?!* overdid this line of thought, in my opinion, but I think it can be spelled out more soberly. Existence has a subjective side, a “qualia” side perhaps, and a more conventionally objective side, where things that exist are rooted in the great externality. The subjective side of existents (note that “ts”) may be hard to discern (what are the qualia for the Big Bang for example?), but recall that everything that surfaces in any way in consciousness has *ipso facto* acquired a phenomenal side, albeit at some arbitrarily convoluted intentional remove from its origins.

I’m beginning to understand why all those famous philosophers get accused of using impenetrable jargon! My usage of the word phenomena and its cognates is in polite deference to Immanuel Kant, who contrasted the phenomenal world with the noumenal world, or in modern terms the world of appearances with the reality behind those appearances. Since in his view the phenomenal world included everything we could ever practically know, the noumenal world fell away as something of a shadow, as Hegel and others quickly pointed out. But the problem with letting noumena go completely is that you get left with a potentially self-serving idealism, as indeed Karl Marx in effect pointed out. Hard facts remain, and if they look economic then you get left with Marxism and its ideological consequences.

So, back to panpsychism. The omnium is an eternal chaos that first acquires temporal order and classical facticity (sorry, that was a word from Heidegger) when we quangle with it via the sort of interactions that physicists tend to see as measurements. We choose what to study and bring that part of reality to sharp focus, while all around is the blooming buzzing confusion (words from William James) that I am calling the omnium (word from Roger Penrose).

It is our interaction with the omniatic flux that brings consistency and time into the picture. We make it make sense, or not, depending on how methodically we do what we do. We carve out a path in the blooming, buzzing omnium. As a religious person might see it, a higher power guides our steps along the straight and narrow path and makes our timeline a good one.

Creating a consistent take on being and time is what all this is about – *Being and Time* was Heidegger’s big book. This is no coincidence. He got the question right. But we can all dispute the answer(s) unto eternity.

My answer: psy(cho)phy(sics).

Dolly: You seem to have a jolly old time throwing out words that seem to have no other purpose than to inflate your own ego. If you would be so kind, why don't you try to restate your idea once more and this time try to actually communicate with us.

A: Well, indeed, I recall that Victorian parliamentarian Benjamin Disraeli said of his colleague William Gladstone that he was "inebriated by the exuberance of his own verbosity." However, I am sure that James Joyce would have reveled in the felicity of this rotundly Victorian phrase as a description of his own divinely inspired glossolalia.

But your protest is well taken. An act of informative intercourse is only consummated when the relevant information has been transmitted, and the sign of this consummation is an acknowledgment by the recipient. I must persist until I receive an okay.

Unk: Now we're back to Wittgenstein's early work, which he at least somewhat repudiated.

A: He did, but was that wise? The *Tractatus* was an attempt to catch in a metaphysical gem the worldview of Fregean logic. Fregean logic was the biggest extension of logic since Aristotle, and took us far beyond the possibilities of syllogistic reasoning and Boolean logic. Gottlob Frege's apparatus of quantification, with his functional notation, and its application in foundational studies to formalize the pioneering set theory of Georg Cantor, took us into the new realms charted by Russell and Whitehead in their fat trilogy, *Principia Mathematica*.

Wittgenstein followed all this keenly. He was as impressed as they all were by the power and scope of the new vision. And rightly, too, in retrospect. For from it flowed Kurt Gödel's astonishing theorems, as the barrier to completion of David Hilbert's 1900 foundations program, and Alan Turing's theorem on the halting problem, and hence the whole wonderful world of computers.

The whole digital revolution had its revelatory origins in the formalized logic that found its visionary consummation in the oracular gem of the *Tractatus*. It was a big achievement.

Yet behind it lay the solipsistic self-aggrandisement of a smart rich boy from Vienna. Ludwig saw that he could never top it, never even defend it rationally against the armies of flatheads who complained pedantically about this or that trivial detail. Recall that the whole logical positivist movement found its inspiration in that crystalline vision. Ayn Rand and Alan Greenspan had similar ideas. Think of all the controversy stirred up by all that.

No, Wittgenstein went soft and woolly. To support this I need only point to his writings on mathematics. There were glimmers of insight there, but the mathematicians I have discussed it with have poo-poo'd it, I think rightly.

Unk: Wittgenstein's later work resulted in much of today's take on linguistics and cognitive psychology.

A: I have my own take on Wittgenstein, of course, and this may be unorthodox in parts. Certainly a lot of people found the later Wittgenstein much more congenial than the earlier, and for good reason, since the spin-offs from his fragments (and that is all they ever were, just reams and reams of bits of paper with remarks on them, a few of which he assembled into his book *Philosophical Investigations* and the remainder of which were picked over by his disciples after his death) were as you say, today's standard views on many issues in linguistics and cognitive psychology. I have certainly not lied about how many mathematicians react to his later work, and this for me colors the likely value of the rest.

Wittgenstein repudiated his earlier views only in the sense that he saw them as an illusion. But he saw every systematic view as an illusion! He just sank into a swamp of relativism and fragmented insights. Lots of good stuff there, of course, as some philosophers have found, such as my former research supervisor Crispin Wright (who wrote a book on Wittgenstein's philosophy of mathematics), but with the best will in the world (so to speak) I found nothing there that I could really get my hands on as a contribution to understanding mathematical praxis.

Wittgenstein somewhat repudiated his earlier position, essentially because it was just too way out for public consumption, but he never subjected it to any serious criticism, just moved on to rather general stuff.

Soja: I dub thee hypocrite!

A: Well, there's a come-on if ever I heard one! How about checking out my metaphysical endowment and seeing how hypocritical a glossolaliac can be?

Sigmund Freud, in my opinion rightly, opined that civilization was built upon sexual repression. For this reason, I find it sinister that a British government organ today (approximately) pronounced that we should all have sex every day to reduce our chances of heart disease and cancer. Is this good science or a bid to keep down the malcontents? An attempt to persuade all those angry young Muslims to pleasure themselves to images of scantily clad lovelies in order to reduce the suicide bomber rate, perhaps.

Sounds like bogus science to me. I go with Mohandas K. Gandhi, who opined that not ejaculating was the key to spiritual health and well being. He even subjected himself to the torment of sleeping with nubile young ladies to test his powers of resistance, and was old and wise enough to remain chaste!

I think I could go for that – if only I could find a supply of bashful cow-eyed virgins to practice with.

Skeptic: I've often noticed that when a theorem is postulated verbosely, it is usually not valid. If you can't dazzle them with brilliance, then baffle them with bullshit.

A: I fear there is some merit to this claim. I am an earnest follower of all the latest fashions in the field of foundational physics, and last summer David Deutsch and David Wallace proved a remarkable theorem that, if true, makes the Hugh Everett interpretation of quantum mechanics with branching universes seem much more mathematically respectable than ever before.

Sadly, when you study the theorem, it piles up a series of definitions of matters pertaining to “subjective probability” that even I (who long ago wrote a small thesis on probability theory) could see depended on some rather subtle interpretation. So I’d say the status of the Everett conjecture is almost as moot as ever, despite the *prima facie* plausibility of Deutsch’s arguments for his views.

As for my own efforts, on which some readers here have perhaps already had their fill, they depend on some tricky issues in mathematics and philosophy where reasonable men may differ. I still think I’m right, but others who think they understand think I don’t understand whatever it is they think they understand, I think, if I understand them correctly.

So don’t take my word for it. Think these things through for yourself, as Gautama Buddha said.

Soja: Freud was just projecting his own neurosis upon the world.

A: Whether you can accept this Freudian statement depends on a series of collateral beliefs that may or may not be coded in your neuronets and that one can only advise you to think through for yourself. I see it as one of the wisest things Freud ever said.

Human civilization is a social order built upon social conventions that among other things constrain and regulate the expression of our sexual urges. Consider how religions, especially the Abrahamic religions, issue endlessly detailed and obsessively nuanced instructions about how people should conduct themselves sexually, and consider how now, in our secularizing world, people are still subject to massive propaganda about what forms and varieties of sexual expression are politically correct or fashionable or taboo.

Being here in Germany, I readily recall how Nazi propaganda anathematized non-procreative sex among German youth, as if they it doing so in order to train a generation of hardened fighters to take on the decadent races of Europe in mortal combat.

Head: WTF are we talking about? Did you bring up Ludwig as part of some progression toward something? Why not a philosophy thread? We already know that quantum comedy isn’t funny in the macro world. Did you want to start a science thread? I was looking forward to hearing more about bopp and goofy and their friends. I thought you were going to do some mental stuff. I thought you agreed that a TOE was not needed to explain the human mind.

A: WTF is the problem? I announce panpsychism, limber up with Bopp, Goof, and Soia, reconstruct being and time from quantum qualia in the

omniatic flux, deconstruct the transgressive narrative behind logical positivism, fend off an attack by discussing civilization and its discontents, and launch on a rant culminating in wild hosannas to the Global Online Dominion. If panpsycho is truly pan, then this is all in a day's work for a trainee psycho.

If this is not mental stuff, I don't know what is. But I take your point and shall try to do justice to this central theme. First, to swat another fly, the omnium is just the plenum of life, the universe, and everything. It is all that is and could be and could have been and so on. It is all the worlds that were and are and ever shall be. It is the state space of the universe, the space that wannabe timelord Julian Barbour calls Platonica, in which, as he puts it, the quantum mist settles around the traveled paths.

To mental stuff. I would happily tell wayward anecdotes about Bopp and Goofy, but first let us deal soberly with Soia, the self of introspective awareness, which Douglas Hofstadter sees as the phenomenal manifestation of a strange loop and which Daniel Dennett sees as the outcome of cranial pandemonium as cognitive demons implemented in neural wetware slug it out in the Darwinian jungle of the neocortex.

My rational epiphany here came at the Mount Sinai School of Medicine, New York, New York, in September 2002, where at a New York Academy of Sciences conference orchestrated by neuroscientist Joseph LeDoux, a panoply of Nobelists and other luminaries from Gazzaniga to Damasio to Dennett regaled us with thrilling tales of neuroscientific progress which I wrote up as a breathless report for the *Journal of Consciousness Studies* (2002).

My culminating paragraph from that report:

The cerebral EM field is still *terra incognita*. This is the critical weakness in the neurological concept of self. Perhaps the photonic self will one day be seen to rise as far above the neurological self as the neurological self rises above the genomic self. Perhaps we shall even glimpse a hierarchy of selves, soaring through the hierarchy of Buddhas into Cantor's transfinite paradise.

As you may guess, my own thing here is the cerebral electromagnetic field, which because its quantum properties are interesting I call the cerebral photonic field. My own, ahem, Photonic Theory of Consciousness (see the slide show I presented at the Towards a Science of Consciousness conference in Prague in July 2003, on my website) is in my view a more plausible candidate theory than the microtubular "Orch OR" (for "orchestrated objective reduction" of the wavefunction for the conjectured microwave laser action in the cerebral microtubules) theory formerly advocated by renowned mathematical physicist Roger Penrose and Arizona anesthesiologist Stuart Hameroff.

This really sounds nutty as a fruit cake, now I come to mention it all.

Junkie: Howard Bloom's *The Global Brain* gets at what you're trying to get at without relying on an ancient and abstract metaphysical doctrine such as panpsychism (which has no bearing on any scientific work) as a foundation.

A: Sure, I enjoyed Bloom's book, despite the amazing tide of notes and references. I thought his central thesis had some inspirational merit.

I think there is something to be salvaged in the venerable doctrine of panpsychism, not as a banner for a great movement but just as a useful oddball label for a position that leverages that central oddity.

In short, mind dilates to accommodate the care devoted to its calming. If the mind has a temperature, defined as the average EM energy of its constituent thoughts, then a calmed mind can approximate absolute zero, 0 K. Perhaps then we experience a phase transition to quantum coherence. To my knowledge, no-one has yet investigated the conditions under which deep-radio photons (in the decahertz range generated by brainwaves) exhibit quantum behavior. Such a coherent state delocalizes (the spherically symmetric wavefront is a null geodesic) and might seem like "cosmic mind".

This is a wild idea, of course. Panpsychism is way out west in the wackiest "Burning Man" voodoo. All the more reason to give it a spin, imho.

Parallel Threads

Quantum Mysticism

Head: Quantum mysticism is pre-critical. It cannot be criticized in the here and now.

A: Excuse me for materializing in this universe, but after a few mighty struggles with the Galactic League of Superheroes (Planck, Schrödinger, Heisenberg, Dirac, Feynman, Deutsch *et al.*) and even mightier struggles with the Time Lords (Einstein and Gödel, plus their minor acolytes) I have returned from the mountain with graven tablets.

You're right, this is a topic for erehwon (here and how? nowhere? Who put this pun in the language?). I shall reveal the truth slowly, carefully, and taking all due precautions.

Shag: If you haven't already, you really need to read Sokal's "Transgressing the boundaries: towards a transformative hermeneutics of quantum gravity".

A: I did – wonderful – I know what you're thinking! I spoof not. I just got fed up with being dull.

Peter N. Spotts: The movie *What the Bleep Do We Know?!* shows quantum mysteries selectively to shore up metaphysical points. Those points suggest that quantum-derived possibilities affect the wider world, that human thought is the ultimate arbiter of physical reality, and that by manipulating thought

properly, people can achieve harmony and even shape the structure of matter. (*The Christian Science Monitor*, 2004)

A: For me, the signs that we should not give up hope are summed up in the keywords decoherence, consistent histories, emergent classicism, and quaternionic hidden variables (not to mention my own more metaphysical contribution of symmetry-breaking crystalization in the fluffy top of an ontic ice-cream cone emerging from the epistemotemporal dilation of a primordial strange loop).

Quantum possibilities demonstrably do affect the wider world (think of the quantum Zeno effect, or quantum tunneling, or the use of entanglement for encryption and computation). As for human thought, Roger Penrose sketched a fascinating scenario involving wavefunction collapse in the microtubules leading to gravitonic symmetry breaking of the spacetime continuum at the Planck scale. I have criticized the Penrose scenario and proposed a perhaps more biologically plausible variant involving the photonics of decahertz brainwaves, but I must admit to having attracted no very penetrating feedback. In either of these scenarios, our thoughts, if properly equilibrated, would indeed be capable of nudging reality in certain circumstances.

Peter N. Spotts: Quantum physics is about matter at its most fundamental levels and matter's interactions. It's not about spirituality.

A: This presupposes a metaphysical dualism of matter and spirit that is strictly untenable at the philosophical level, as much of the debate in the philosophy of mind since Descartes tends to confirm. The modern question is whether the warm, wet environment of the living brain can sustain a sufficient level of quantum coherence to give rise to any observable effects. I think the Penrose scenario survives this issue less well (bearing in mind the critique of Max Tegmark) than my own.

Peter N. Spotts: The movie suggests that the quantum idea of matter embracing all its possible states at once applies to the larger world of people and rocks. But above a tiny size range, quantum properties collapse, and particles start to behave in the way described by classical physics – more like bowling balls than fuzzy clouds of wave functions.

A: This is not quite right. Quantum effects have been observed to reach at least up to micro scale, well above the nano scale of atoms or the femto scale of particles. An experiment involving satellite-based interferometers with megameter baselines is planned to test for superpositions at larger scales. More to the point, the behavior of particles remains fuzzy despite the emergence of approximate classicism at larger scales. Classical behavior is only defined at larger scales, rather like temperature, which is undefined for individual particles. The same goes for the “flow” of time, which again is only well defined at larger scales, where indeed relativity makes the emergent classical time dimension strictly equivalent to a spatial dimension. Here there are deep mysteries, and the field is still work in progress.

Peter N. Spotts: Quantum mechanics rules out the possibility of hidden variables. Moreover, the movie proposes no plausible physical mechanism by which thoughts influence matter.

A: There is a new twist in the hidden variables story. John von Neumann apparently ruled them out, and John Bell proved a theorem showing that hidden variables with real or complex variables would generate statistics that have been ruled out by experiment. But quite recently Joy Christian has proved that entanglement relations are preserved correctly by quaternionic hidden variables obeying a Clifford algebra.

As for a plausible physical mechanism, I agree that the Penrose mechanism seems implausible. But the Ross mechanism has not yet been seriously examined.

Head: What happens at the quantum level, stays at the quantum level.

A: I beg to differ. Indeed I am tempted to opine that the entire classical world is a vast entanglement generated by quantum interactions. If this is so, the consistency of the classical world is no surprise – we make it. But this is powerful ammunition for the fundamentalists who claim that God is logic (their take on John 1:1) and that consistent explication of Biblical doctrine is the key to sound theology.

I tend to see the collective timeline as something we make too. Without the long-term linearity of entanglement generated by consistent adherence to sound doctrine, the calendar timeline would devolve into circles and thence the spaghetti of prehistoric time. “With the cross of Jesus going on before,” we can march in lockstep along the straight and narrow way into a more Euclidean future.

I seem to have caught an evangelical meme. Excuse me while I cough it up.

Taking Science on Faith

Shag: Christopher Hitchens and others will be happy to suggest to you the hypothesis that Jesus is a mythological figure. Apparently, C.S. Lewis had a fondness for the letter L, and seems to have limited himself to alliterative variations based on that. Let’s move along one letter in the alphabet and ask if Jesus is man, myth, or metaphor. For the first of these, there is not even any credible historical record. You are left with myth, metaphor, or methadone.

A: Chris Hitchens I recall from my Oxford years. He and I had common friends, and for years I was unimpressed by his Trotskyite radicalism and his inglorious activities on Fleet Street. But he does have a way with words, and his God book has undeniable zest. So now I’m humbled in admiration before his thus-crowned life’s work.

Still, when it comes to science and philosophy, Chris is no more impressive than C.S. Lewis, who is not, of course. On Jesus, most people are all at sea, especially most Christians. To update my image of the classic vision of Jesus,

I read Pope Benedict's new book over Christmas (2007). Since Benedict is philosophically quite smart, the book is surprisingly good.

On reflection, I have to admit that although of course the standard sources on Jesus are hardly reliable in any normal sense, the picture emerges, as Benedict insists, of a historically real person with a distinct and vivid personality, despite the fog of unreliable narrators.

C.S. Lewis: A man who was merely a man and said the sort of things Jesus said would not be a great moral teacher. He would either be a lunatic – on the level with the man who says he is a poached egg – or else he would be the Devil of Hell. You must make your choice.

A: This is a false trichotomy. Jesus was merely a man, but a divinely inspired man. He was a lunatic by everyday standards, but a lunatic in the service of the Abrahamic God (the strange attractor in the geocentric reality of human mental space). And in the terms of ancient folk psychology he was a devil, a fallen angel, fallen to Earth to rant with disquieting serenity about his “father” in heaven. Jesus was a man with a mission, who stopped at nothing, even a painful death, to underscore a message he righteously regarded as supremely important. So, Lewis, where's the choice? I see no need to choose in view of this triune reality.

Unk: A tendency to Tie Things Together (TTT) is one of the most useful attributes humanity has. But thinkers such as Wittgenstein, Heisenberg, and Schrödinger are perhaps the most over-interpreted philosophers in history. For instance, Schrödinger was not explaining details about how things work as much as he was explaining how absurd the world seems to be when viewed through a fine enough lens.

A: Indeed, TTT is the origin of concepts and the origin of organized mind (as well as disorganized, but let that be for now).

Unk: Sorry, but panpsychism sounds like magical thinking to my ear.

A: Panpsychism arises from this hard fact. Everything we see or know or become in any way acquainted with becomes something for us through our minds. In this sense, not only physics but life, the universe, and everything are all psycho (logical or illogical).

Materialism must be right in this sense. The stuff of minds cannot be other than the stuff of things, or the possibility of causal interaction goes down the tubes. So all that we mind is stuff with a psycho side or dimension or quality or *xyz*.

Panpsychism is in this sense trivially true. But its implications for a properly formulated psychophysics are probably nontrivial. What are the implications? Dunno. I'm not smart enough to see full glory. But I'm trying.

Magical thinking is something I never do. Yet TTT is almost that already.

Paul: Faith makes truth real. The reality of a truth cannot be experienced until it is believed. So reality is not real if we don't realize it? Is truth experienced when we believe in unreality?

A: Lo and behold, I have just had an idea. Faith is a means to unknow or to persist in ignorance of things you would prefer not to know. Consider where people archetypally or paradigmatically have faith. They have faith that they will survive their own death. They know they will die but they would rather not know. They know that begetting their next kid will strain their finances but they would rather not know. They know that having sex with the choir boy is bad but they would rather not know.

People of faith can see plain truths as well as anyone else, but they regard eating of the fruit of the tree of knowledge as dangerous. They can understand that eating too much makes you fat and transpose that understanding by analogy. So accepting the truth of evolution is regarded as trespassing on the property of the gods.

Why did faith evolve? It seems counterproductive. Well, we all know things we'd rather not know. I know I'm going to die. Given that that is a fact, I'd rather know it and plan accordingly. But if there's a shadow of a doubt, well, faith is a tempting option. Ditto with getting the lady pregnant just by having sex with her, or going broke just because I bought a new car, or getting lung cancer by smoking – the examples are endless. The mechanism is ubiquitous.

So why did faith evolve? For the same reason optimism did. Without optimism we'd all die of sheer misery. If I accepted the odds that all my efforts will end in abject failure and ignominious death, I'd save myself the bother and give up now. We stake all on long odds. Faith helps us do that.

Philosophy

Shag: Just as individual rationality comes to terms with the absence of an afterlife, so it comes to terms with the fact of species extinction. When it's all over, there won't even be anyone around to read the history of all our strivings.

A: Let me expound a potted version of my post-millennial eschatology. It's all happening! All will be well in the best of all possible worlds! Prophetic guru Ray Kurzweil points the way!

We, the human species, are creating our successors. They are currently called robots, but they will evolve fast, very fast, to embrace our entire genomes as fun things to tweak and grow as pets. They will become androids with robot bodies around biocores built on tweaked genomes. They will call themselves *Homo superior* and will find good reasons to make haste clearing the trash of pretechno feral humans.

Nietzsche, move over: Thus spake Zaross. Yea, verily, the androids will inherit the Earth.

Shag: Try talking to a machine the way you talk to us.

A: Touché. The annual farce of the Turing test shows the problem. This is why a robot will need a biocore to get smart enough. The Kurzweil scenario is that genomics, nanotech, and robotics will all evolve fast and synergize. We (and it will be we, maybe Western or Chinese humans) will build robot suits for ourselves. Hell, we're doing it already – we call them cars. We will soon (in evolutionary terms) become inseparable from them. Imagine a world so polluted that the life-support systems in the cars are all that stands between life and death. Whatever the detailed scenario, the effect will be the same. A synergistic lifeform with a biocore of some sort and a robotic exterior will have its consciousness permanently online. That leaves precious little room for individual deviancy, which in a world of exploding fundamentalists will be seen as progress.

So these androids will be in effect all tech (the bio part is just a name for DNA tech) and always online. The real control will be a distributed super-consciousness in the net, or rather in the Global Online Dominion (a tad beyond Google).

Neuro: It should seem obvious to us that intelligence conveyed an evolutionary advantage in the past. However, we may be able to determine our own fate if we become smart enough.

A: If you think you're not smart enough to determine your own fate, you're not smart enough. Yea, verily, the smart shall inherit the Earth. And build androids to help them do it – and live in their cars and fill the atmosphere with engineered viruses to keep down the cave dwellers. Won't be long now – The Singularity is nigh!

Seriously, guys, tech is getting better and better every day in every way. My team develops a search engine that will soon be able to parse a sentence! At this rate, in just a few more rounds of Moore's law, the machines will be writing classics by the billion. Ah, irony is a fine thing. Will they get it? Or will the last man standing be a comic?

Jesu: Dear friends, let us love one another, for love comes from God. Everyone who loves has been born of God and knows God. Whoever does not love does not know God, because God is love.

A: Wow, I see some heavy old baggage here. As a scientist, I tend to see love as a human affective state indicated by elevated levels of various neuromodulators and so on, and find it hard to relate this to a conjectured entity deserving of worship, sacrifice and so on.

I find the "God is love" definition amenable to quite reasonable parsing within the scope of a scientific theory of genetic determinism, whereby human action tends to be genocentric, and where the conceptually baffling attractor for human striving is a transgenerational fetish historically described

in the terms that have accreted around the Abrahamic God, also known as the God Of Our Fathers (Goof).

This idea is my own post-Dawkinsian memetic initiative based on a highly eisegetic reading of parts of the canonical Goof literature.

Jesu: Let me attempt to contextualize this Goof statement within the larger domain of the axial age and justify the Goof interpretation as the better adaptive trait as compared to that of contemporary axial age philosophy. The psyche (soul) is healthy when it loves and is unhealthy when it does not love. In terms of Plato's charioteer: The white horse (roughly Freud's ego) must become enlarged and the dark horse (Freud's id) must be submitted to the purposes of the white horse.

A: It seems clear enough to me that the Goof tradition was adaptive in a world where war and chaos were rife and extremes of group solidarity were required for survival. It is also arguable that modern socioeconomic systems based on science and technology still need a human tradition of this sort to remain viable. This is entirely consistent with my genocentric perspective on the Goof tradition.

Loving relations are expressions of the bonding that in biological terms makes a superorganism from cellular parts. The microorganisms that learned to cooperate "unto death" as the bodies of megafauna found a survival strategy that was no less viable than that of the individualist microorganisms that surround us still as free-living microbes. A single global Goof-based superorganism is a long-term possibility, in my genocentric view, and indeed precisely on the basis cited above that God is love, under some suitable interpretation.

As to the psychology fostered by Platonism versus Goofism, your white and dark horse idea has a modern version that has appealed to me for all the years since I first read Julian Jaynes' intriguing but flawed masterpiece *The Origins of Consciousness in the Breakdown of the Bicameral Mind*. The modern version is that each of us has two minds, a big one and a small one. Very crudely, the big one is confused with God, somewhat as in Jaynes' version of history but with a less schizoid spin, and the small one is the analog self of willed action and everyday selfishness, which is to say the referent of words like "I" and "me" in our everyday speech acts.

In contrast to the antique polytheisms, Goofic monotheism subtly encourages this solipsistic confusion of the big self with the Goof by inflating the phenomenal veil of the Goof to cosmic proportions where only Platonic ideals remain as the hidden content of the Goofic noumenon, so that nothing tangible remains to contradict the solipsistic autocracy. On this reading, Jaynes is guilty of a simplistic reductionism by mapping this psychic duality of self to the physiological division of the brain into cerebral hemispheres.

The division of big self and small self is part of human socialization. Those whose big self has not been inflated to godlike proportions are accused by

religious mavens of being pusillanimous, while those whose small selves are insufficiently autonomous become stumbling dupes. Yet the selves must integrate and fuse into a single personality. A stress on love is a natural way to encourage this fusion. Insistence on such a psychology for those who would join “the body of Christ” may well be adaptive in some definable sense.

Jesu: I am not inclined to interpret the Abrahamic tradition in the manner that you are referring to Jaynes. A gestalt switch may throw a whole different light on the developments in this sphere. For instance, Abraham appears to be ahead of his time in that, unlike Agamemnon, he does not sacrifice his child to the god. This saves his progeny from the agonizing that we see in the Greek tradition.

A: Not being deeply steeped in Greek mythology, I cannot judge your comparison with Agamemnon, nor does Abraham’s aborted sacrifice much move me. The key idea for me is of God as the ultimate patriarch, as an idealization of Abraham’s own presumed status. We saw an analogous phenomenon among Mormons as they trekked to Salt Lake City and made patriarchs of Joseph Smith and Brigham Young. Moreover, their concept of God as a former man and men as trainee gods brings the petrified idealizations of orthodox Christian theology down to Earth with a jolt, again perhaps recalling the Abrahamic experience.

But returning to Julian Jaynes, the takeaway message for me was that the history of religions from Homer to the present is the history of a steadily diminishing role for the gods in human life as humans get their mental acts together and integrate the respective mental lives of their left and right hemispheres. The physiology here is that the hemispheres live potentially independent lives, as shown by the experience of people whose *corpus callosum* no longer conducts high-bandwidth interhemispheric traffic (as researched by Nobelist Roger Sperry and further pursued by Michael Gazzaniga).

The unconfirmed hypothesis behind Jaynes’ story is that early humans were by modern standards schizoid, with a normal left brain running daily operations and the right brain somehow set apart as the home of the gods. The left brain experiences the output of the right brain as mysteriously authoritative divine commands, and so on. All this is somewhat dubious physiologically, since humans thus burdened might be expected to function with impaired efficiency as survival machines, and it is very hard to test convincingly. Anyway, Jaynes points to a remarkably vivid development in the ancient literature from gods conceived as external dictators to an integrated inner god embodied as conscience or something similar.

My priority in all this is to find an understanding of the legacy of monotheism that can fit smoothly into modern life and help us make good use of the Promethean fires offered by science and technology. If humans are not rational egoists, as they are caricatured in much modern economic theory,

but robot servants of their genes, as in modern molecular biology, then a conception of the ancient gods as inner phenomenology generated by genes struggling to harness a burgeoning brain may be fruitful. Human brains expanded fast in evolutionary terms, and we can imagine our genes found it hard to steer our behavior, via feelings and emotions, as effectively as they do in the other animals. Modern civilization represents a definitive breakout from that steerage.

So, my big “aha” moment here is to see that the Abrahamic God, the Goof, is a much better reflection of the genetic imperative that still seeks to steer us than other gods, because it directly reflects the transgenerational impact of our genetic heritage and biological future. Hence Richard Dawkins, the leading public advocate of genocentricity, becomes in effect a prophet of GOOF – despite his vociferous atheism! Ironies will never cease.

Unk: I was once religious, partly because I was unable intuitively to understand how humanity could have come to be without leaning on deistic (if not theistic) crutches.

A: I see religious thinking as analogous to the way children think within a family. The locus of authority is in one or more others, and the self is accepted as dependent on the other(s). Given the numerous concentric layers of authority in modern society (employers, government, scientists and so on) it is unsurprising that many – most – people remain psychically dependent in many ways their whole life long. They are “infantilized,” to use the term author Mark Steyn provocatively uses to describe the status of European males in a welfare state.

Such delegation of authority is wild and quite low-level in many schizoid individuals, if I understand them correctly. Even regions of their own brain seem to be experienced as uncontrollably other. And that is dysfunctional, of course, so much so that Jaynes’ idea that ancient men were routinely schizoid is implausible. Rather the contrary. Just as American cowboys from a few generations back would have found the infantilization of modern man quite disgusting, I suspect that conversely we would regard healthy alpha males from the deep historical past as excessively self-contained and robust, and not at all schizoid, if we could meet them.

Returning to modern schizoids, there is a huge range of presented syndromes, doubtless with a variety of aetiologies and different prognoses under appropriate medication. But given the technology we can use to study such individuals, I guess they should often be regarded as valuable assets in the sense that they can give us a window on the operation of various brain processes that are easy to overlook in normal people.

Whatever, Jaynes has done us a valuable service in pointing out that the whole archeology of consciousness is still *terra incognita*. Religion will doubtless be prominent in that archeology, if and when we get around to it.

Consciousness is a concept we use for our most universal waking state of mind, when we are aware of all that buzzes around us and have our acts together. We can lose it with a bang on the head or a drink too many. The state need not be generated in our heads. Our brains may be more like TV sets tuning in to the universal vibes. We know that the logic of the self is indefinitely extensible. The action-perception cycle can be small and tight, as when fast reflexes are in play, or big and dilated, as when contemplating the eternal questions. We can be selfish and live for the moment or be big-hearted and act for the greater good of the planet.

As I see it, all these possible circles of the self define mindworlds. Reality is just the set of all actual and possible mindworlds. So panpsychism, in the sense that reality is made of the same stuff as mind and features in an infinity of mindworlds, some of them in our little consciousnesses and others just part of the undiscovered ocean of prefixed consciousness, where the prefix comes from the set (un, sub, infra, ultra, super, hyper, ...), is on this view almost trivially true. Given the definitions, of course, which is precisely where a smart *JCS* contributor would seek to trip me up by asking me what features in prefix-consciousness correspond to quarks or black holes or big G and what possible scientific evidence could support such nonsense.

Jesu: God is known by His properties which are summed up by the word love. In Moses' vision of who God is, God was revealed in the heart, which is the human psyche or soul.

A: Heart = psyche = soul? This is vague anatomy!

Jesu: Moses understood that what can be known or found about God consists in ethics.

A: Understood or proposed?

Jesu: Moses also understood that the ethic was written in the human heart.

A: So why do we need the ten commandments?

Jesu: Moses promised that anyone who would seek for God would find him.

A: By what right can Moses promise me anything?

Jesu: God's essential attribute or property was his willingness to extend himself (i.e. love).

A: If so, then God is a biological phenomenon, a ghost of our genes.

Jesu: This is who God is, as far as my knowledge of Him goes. When I took the time to look for Him, I found Him in the act of loving as He loved me.

A: I love Him and He loves me, or rather I love myself.

Jesu: Our soul was given to us by God and has the attributes of God within it.

A: Or rather an act of love created us and we are lovers.

I find all this to be a murky and unscientific procedure that results in a fuzzy and unsatisfactory conclusion.

For all its fine detail and noble rhetoric, the Bible is not a textbook for finding God or anything like it. It is a miscellany of historical fragments, some good, some bad, that need to be poked around with an extremely long stick before one takes anything there at its apparent face value. However deeply one immerses oneself in the literature of the axial age, one cannot overcome the basic hermeneutical problem of, ahem, inadvertent eisegesis.

It seems clear to me that you are reading “God is love” into the unreliably narrated fragments of Mosaic thought in order to reconstruct the God of Jesus of Nazareth. But Jesus was precisely an innovator! Of course, those old axial writers didn’t admit to contradicting each other, so they set up the whole story as fulfillment of prophecy and so on, but the inner contradictions in the Bible are too whopping to paper over.

In short, if you try to find God this way, your own soul gets in the way. You end up imagining God loves you even more than you love yourself and knows even more than you do and so on. Just an idealized superego.

Modern psychology deflates our God talk more radically than Copernican astronomy or Darwinian biology do. It says you can’t talk about the great “I Am” without talking about yourself.

We all love ourselves. It’s what keeps all our cells working together. But if that’s the best we can do for God, we haven’t escaped the Dawkinsian claim that all we are doing is helping our genes along. Human civilization is just the extended phenotype for the social organism called *Homo sapiens*, and all our gods are fetishes to help keep us breeding true.

Jesu: My understanding of Moses’ version of God is that he is understood partially through Torah (law). This is the conduit through which a man may ascend the “stairway to heaven” (see Psalm 1, for instance).

A: For OT Jews, God is law. Follow the rules and be okay with God. The rules were revealed to Moses, who came down with the tablets and so on. Much like the Mormon story of the golden plates, come to think of it, except that most of the Mormon rules came later.

Jesu: Love is God within the human heart but our apprehension of God is dependent upon our willingness to become as he has revealed himself: To love the stranger, the widow and the orphan in very practical terms which are intended to bring them to our level.

A: This formulation can only work if love is conceived very vaguely. We know enough about the physiology of love to be blasé here and say that confusing God with such stuff may be a way to feel good but has no cognitive cash value. In terms of being a prescriptive proposal to guide our action, fine. We can help ourselves to act more compassionately, which may

in the long term make us feel better inside, too. Again, however, this says nothing about the ultimate nature of physical reality.

Jesu: Lucretius (an atheist from 50 BCE) made a distinction between the material world and the nature of man where pleasure and pain were the guidelines for becoming more human. Plato was a panentheist who saw God in everything. God is observable (from this vantage point) in nature as well as in human nature. However, he is also conceived to be beyond this in his infinity (transcendence).

A: The utilitarian philosophers in Victorian Britain saw us as driven by pleasure and pain, too. The traces of this view in practical decision making appear as division into costs and benefits, profit and loss. All now godless. But Plato's finding divinity in everything has a deeper ground. In this sense at least like modern scientists, he seems to me to have seen all aspects of nature as cognitively inexhaustible, as opening up potential infinities on deeper analysis (for example consider the infinite precision required to specify the Platonic geometric forms to which all physical forms approximate). But again, we can regard all such infinities, in chaos theory and fractal geometry for example, as godless. God seems like a ghostly fantasy in comparison with such infinite clarity.

Jesu: Wisdom is said to be "calling on every street corner" (Proverbs 8:1). This is a metaphor for God's immanence. If this is true, we should be able to find wisdom. In that context, the key is to meditate on torah (see Proverbs 3:1 "do not forget my teachings"). But Jeremiah says that Torah is written on every heart (Jeremiah 31:33), which means that all that can be known of God is right there inside the heart of the man who will go and look for it. Knowledge, in Jeremiah's sense, is a function of love.

A: The Sufis often understood the immanence of God very vividly. Here and now, in love too, as Rumi appreciated. My former colleague Andrew Harvey, now a distinguished mystic, is very perceptive on this aspect of the divine. All this may be very elevating, but to me it is not knowledge.

Jesu: I didn't find this stuff easy to understand when I first put my mind to it. I think that I do understand it a little better now.

A: Sure, such stuff takes time to get into, much like any branch of modern science. For me, the sparks fly when these emphatically not "non-overlapping magisteria" (to quote Stephen Jack Gould) are juxtaposed. Knowledge must survive such juxtaposition.

Jesu: I think that there is a good deal of overlap in terms of, for instance, the ancient law codes and modern ethics. I am a strong adherent of what Popper calls critical rationalism.

A: That ancient and modern laws and codes should be broadly similar is in effect a corroboration of the evolutionary view of ethics as codifications of reproductively adaptive animal behavior and emotions (contrasting emotions

and feelings after Antonio Damasio) that must have evolved well before human civilization (the work of Marc Hauser is salient on the animal parallels) to be so deeply rooted in us. Religionists who congratulate themselves for making us moral are thus evidently in error. The key moral law, as Kant argued, is the requirement to accept as law the universalization of the maxim of one's action. This parallels venerable Jewish ideas.

As for Popper, I studied philosophy for two years in his department in London many years ago, when his views were still unfashionable. Since then, his evolutionary view of knowledge has become conventional wisdom, I am happy to say.

Jesu: A pagan goes to two leading rabbis, Shammai and Hillel, and asks each one to teach him the whole of the Torah while standing on one foot. While Shammai rebuffs the man for his insolence, Hillel replies, "What is hateful to you, do not to your neighbor; that is the whole Torah, while the rest is commentary thereof; go and learn it."

A: I would argue that a rule along these lines is necessary to let any action sink from consciousness, where it must stay until it has been sufficiently clarified to sink safely into subconscious or rote behavior, into an automatism that allows us to get on with our lives freed from obsession about that topic. Such a rule makes good engineering sense for a learning system based on a neuronet.

Jesu: In Jaynes' "bicameral period" the god replaces the ego of the alpha individual within a group.

A: There is something in this analysis. In Oxford academic convocations, they keep an empty seat to remind them that God presides over their meetings. Modern science has taken this removal to an extreme by working so far as possible with "the view from nowhere" (in Thomas Nagel's fine phrase). As I contemplate physics, however, I see traces of "somewhere" in the observer of relativity and quantum theory. There has to be a distinguished spacetime point (in principle arbitrarily selected) to serve as origin (or zero) and there has to be an actual state (an eigenstate of the wavefunction) in contrast to superposed virtual states (that collapse on measurement). Still, if this is a trace of God it is pretty attenuated.

Jesu: We are dealing with the complexities of mind and the split between mind and spirit. Studies in neuropsychology have demonstrated activity in what Sagan is calling the R-complex can be isolated from activity in the limbic cortex.

A: I have huge respect for Carl Sagan as an astronomer and cosmologist, but I don't know how closely he followed neuroscience, which has anyway progressed enormously in the last fifteen or so years. I have tried to keep up with it by going to a few recent conferences, but it is a complex field. I suspect the story one can tell in terms of the "R-complex" and the limbic system is a drastic simplification. The mind is layered, with evolutionarily

older layers responsible for relatively basic behavior, and the neocortex, especially the frontal lobes, the main focus of consciousness and deliberative thought. Any behavioral complex as rich and deeply anchored as religion must correspond to orchestrated activation at many levels.

Jesu: The comparison to the limit of calculus gives definition to what is meant by knowledge. We have faith in a given observation as part of a pursuit of knowledge which lies out in infinity somewhere. This is very similar to the Parmenides idea of Being as a limit that we can never attain but which is reflected in Becoming. Sagan opines that the limbic system is a reliable means toward the end of knowledge. Elsewhere, he has said, "Imagination will often carry us to worlds that never were. But without it we go nowhere."

A: The idea that truth was approached asymptotically in scientific work was one of Popper's salient metaphors. And the idea that real things lie at an unattainable infinity relative to their phenomenal counterparts was central to Kant's *Kritik der reinen Vernunft*. His noumenon was criticized by many later philosophers, and its traces in modern views such as those of Saul Kripke, with natural kinds having essential properties constant across possible worlds, seem far removed. I prefer to see a historical development here, following Hegel, whereby the views of Parmenides and other pre-Socratics became fairly deeply buried under successive later approximations (to use that metaphor again) to the truth (Hegel's Absolute, itself succeeded by the Marxist millenium). As for the limbic system, let's wait for neuroscience to update that.

Jesu: If you agree with Andrew Harvey, we are pretty much on the same page. Bad religion relies upon the R-complex and, for that reason, it leads to all sorts of trouble. But the founder of the faith relied upon the limbic cortex. The problem, as I see it, is that most people don't like to think or dare to dream.

A: Andrew Harvey is a nice guy with some good views. But he's no scientist. Fantasy and wishful thinking decorate his writings (indeed often they grace them and lead to divine flights of rhetoric). If it's truth you want, hard science is the way.

Religiosity in Europe

Juro: The right wing nationalists in Europe are essentially racist. They are not bothered especially by Islam but more about any alien culture. This is the kind of sentiment that led to the Danish government deciding to deport those two men who planned the assassination of the artist making the Mohammad pictures. That's obviously misguided because it puts the focus on their being immigrants.

A: Immigrants who show such contempt for the culture they immigrate into that they plan murder for such reasons should be deported, no question about

it. Otherwise, the welfare state will end up paying for all the trouble they cause, not to mention paying them to breed another generation of poorly socialized misfits. As a taxpayer, I object strongly to helping pay for the care and maintenance of people who hatch criminal plans to destroy the way of life I know and love.

Juro: I'm disturbed by the fact that there are no outraged crowds marching the European capitals in light of Iran's demand for an apology over the cartoons. Where are all the Europeans calling for us standing up to freedom of speech? On that point, the Danish government should be applauded for telling Iran that an apology is never going to happen.

A: That would be taking the sayings of Ahmadinejad more seriously than they deserve. A tolerant smile for his babbling idiocy is more to the point. As for his rantings about Israel, that is another matter. There he can be dangerous, and there his effort must be resisted with military force.

Juro: Fortress Europe should be a metaphor for a fortress around democracy, liberty and reason. A wall not against people but for human equality and liberty.

A: But a wall against bad ideas will soon become a wall against people. Perhaps this is not such a problem. Why should we import millions of people with primitive mindsets just to try to secure our pensions? If we suffer a demographic problem with aging workforces and so on, then let's try to solve it more creatively than by importing what are in effect wage slaves, who unless we find a way to transform them will of course be dreaming of building a new caliphate. Well, perhaps we should let small numbers in, to refresh our own body politic, but only on the condition that they let themselves be reprogrammed to abandon their mosques and burkhas and korans and start new lives.

Juro: We should not tolerate criminal behavior. But we don't exile Europeans who commit crimes and we should not do the same to European immigrants who commit crimes. If we imprison every national criminal and exile every immigrant criminal, that sends the message that immigrants only commit crimes because they are not like us, while national criminals commit crimes for other reasons. I don't like that message.

A: We don't exile Europeans, true, but I was defining immigrants as non-Europeans. Once they have European citizenship, they are no longer immigrants and we have to make the best of them. If they commit crimes but don't have citizenship, I say throw them out. If they fly in from Islamic nations with the evident intention of committing murder or similar crimes, we should treat them like enemy soldiers.

Juro: We need to change the mindset that democracy and equality are values granted to us by government. Every citizen has the right to enjoy these values, and every citizen has the duty to uphold them. Some people come here from cultures vastly different from mine. When they come here, they

must be informed that they will be expected to help strengthen the foundation of this society, and will have to abandon aspects of their old society that clashes with the ones here.

A: Every citizen, of course. Many have exotic backgrounds, no problem, adds to the spice of life. But immigrants who agitate to destroy what we have devoted centuries to building up deserve no mercy. Until Islamist ideology changes its tune, we have a war on our hands. We must be tough.

Juro: We must avoid the rise of xenophobia. We need to remain fair and fight prejudice but also fight the overtolerators. They defend Islam because they think it's racist to attack it. If we don't accept that Islam is not just a foreign culture but a religion, then we are not going to solve that situation.

A: Islam is a totalistic culture with political implications. It is precisely the problem that is it is not just a religion as we otherwise know religions. This is the point Sam Harris has done us the great service of emphasizing.

We need to evaluate Islam in the terms we used to evaluate Fascism and Communism, as a politically dangerous ideology that has the potential, if we continue to give Islamic regimes enough oil money, to become a militarily dangerous threat of some sort. We delude ourselves if we compare it to our now largely benign Judeo-Christian heritage.

Juro: Christianity and Islam are exactly the same. There is just a progressive offset between the societies in which they reign.

A: Sorry, but they are different, and a differentiated approach is essential to get at the key issue here, which is establishing the preconditions for free, tolerant, and rationally minded cultures that live peacefully together. Old Testament Judaism was a tribal ideology of no particular interest to other people. Jesus of Nazareth opened it up and Roman emperors gave Christianity their seal of approval. Since then, Christianity has become sufficiently domesticated to be tolerable within a rational society.

Islam has a quite different history. It was spread by the sword. The Prophet was a military figure. After centuries of attacks by Islamic groups against halfway Christianized Europe, the Christians finally organized themselves sufficiently to fight back in the Crusades, and since then there has been an uneasy truce. Christianity is a religion of peace and love, Islam is an ideology of jihad and submission.

Juro: But even among secularists there is a tendency to make it about West versus Middle East, Christian values versus Islamic values.

A: At present, the issue is indeed localized as West versus Middle East, in the same sense that the struggle against Communism became localized as West versus East.

Juro: Let's make it about secular values against religious dogma, and then let us not set ourselves into a bad position from the start by helping reinforce the idea that we've declared every Arab to be a terrorist.

A: Point taken. The problem is not Arabs, the problem is the ideology that currently has most Arabs in its grip. Pakistanis are not Arabs, but Pakistani Islamists are as dangerous as any others. Most Indians are ethnically close to Pakistanis, but if they are not Islamists they are as delightful as any other people.

Juro: Islam and Christianity are no different in terms of how dangerous their core beliefs are. The only difference between them is that Islam is sheltered by totalitarianism.

A: Not true. Look more closely at the core beliefs. Christianity has accommodated itself to containment within a rationally organized society, Islam makes claims that can only be contained within either feudal and corrupt systems or totalitarian regimes based on violent repression, or at least so it seems so far.

Juro: Islam is still in the phase that Christianity was 500 years ago. Christianity of that time would be just as ignorant, just as hateful, just as totalitarian and just as destructive as Islam is today.

A: The big difference is that Christians 500 years ago did not have access to weapons of mass destruction. We cannot wait 500 years while they catch up. Long before then we'll puke up an Antichrist who terminates the whole mess with extreme prejudice. Either they grow up fast or someone finds a tempting hi-tech solution.

Juro: Islam could go through the same transformation as Christianity has. Indeed, it is really our only hope that it can.

A: We don't have 500 years. *Homo superior* will consign all fundamentalists to the dustbin of history well before then.

Juro: Let's break the fundamentalists apart and not unite them.

A: Yes, by preventing the Christians from aligning with the Islamites and staging an Abrahamic revival, just before hordes of Chinese robotanks sweep across the steppes and clear us all away.

Juro: I'm getting the feeling that you are advocating a slightly less nuanced view than I would hope we applied on global politics.

A: No advocacy intended. Radical changes are transforming our history at an exponentially increasing rate. Our technology has changed the world enormously in the last century. The next century will be much more transformational. We need to be prepared.

Juro: Are you for a complete occupation of all Muslim countries? Because it seems that you are rejecting any notion of another way.

A: Occupations are so last century. Cable TV and the web are doing most of the work for us. Bush 43's mistake was to think we needed boots on the ground to plough over the old way of life. We should have been in and out in weeks, and let the Iraqis sort out their own post-Saddam fate. We could have given them several hundred billion in reconstruction aid and still have come out ahead.

Juro: Let's not take the fear train all too quickly.

A: Who's talking about fear? I'm saying militant Islam is a threat and we need to toughen up to meet it.

Juro: There doesn't seem to be a solution short of genocide.

A: Saddam once warned the Iraqis that if they lost the fight against America they would be reduced to the status of Native Americans on reservations. Since the Iraqi people are a people with a proud warrior past, they will not go down without a stiff fight. What we need to do is convince them that their best course now is to accept Western ways and make a success of themselves from within the charmed circle of free peoples. But we have to let the hotheads burn themselves out first. This will serve as a test case for other Middle East communities. I see no reason for panic but plenty of reason for hanging tough.

Juro: The democratic world stood behind the United States going into Afghanistan. That situation has forever been wasted now, thanks to the warmongering of the Bush administration.

A: The trick here is not to care about short-term popularity. To sort out the Middle East, we need to keep our hand in the flame, so to speak, and take the pain while the hotheads burn themselves out within our grasp. British colonialists kept the peace in places like Iraq for many decades and took some serious setbacks. To come out on top you have to hold on and not flinch, until sweet reason wins the day. And if your opponents refuse to see reason, you have to let them go down fighting. We just need to be sure we keep the moral and military upper hand and not let the hotheads get their hands on nukes.

Juro: I am sure that the vision of the future of *Star Trek* did a lot for me in romanticizing a future of reason, where science is upheld as the core value, where people strive to better themselves and to live by more enlightened principles.

A: Yo, I'm down with that! *Star Trek* rocks!

Philosophy in Schools

Shag: Philosophy isn't science. I should have thought this would be obvious.

A: Actually, philosophy is where science came from. Philosophy is the ripe field of dung in which all new sciences grow and flourish. It happened again and again in recent centuries.

Thanks to a rather old-fashioned British education system, I have four prestigious degrees in various branches of philosophy. Without a very critical approach I would have sunk without trace. As it was, my prior background in math and physics saved me.

Plato put the words “Let no-one ignorant of geometry enter here” (or similar, with due regard for translation) over the portal of his academy. Updated, this means study math and physics before you even think of philosophy. Math and physics encourage critical thinking.

A cautionary tale. In Germany and in other European countries they teach philosophy in schools. To get a sense of what this means, read the 1991 (1995 in English) bestseller by Norwegian high-school philosophy teacher Jostein Gaarder called *Sophie's World*. Nice enough book, but philosophy for kids is about as much fun as religious studies. A bit more rational, and at least not offensively mad, but dull, dull, dull – unless, like me at a more advanced age, you're passionately concerned to correct the obvious errors of all previous thinkers.

My advice to school boards: stick to math – but take care to teach it well!

Theodore Sturgeon: Ninety percent of everything is crap.

Mario: Why would the concept of critical thinking be a part of philosophy?

A: Because philosophy without critical thinking is worse than shit. On the other hand, critical thinking without philosophy is like a weapon without a safety catch.

Mario: How are you defining philosophy? I don't mean the dictionary definition. I had always understood philosophy to mean questions about the meaning of existence.

A: Philosophy is the search for truth in all matters of importance. It splits into epistemology (the theory of knowledge), ontology (the theory of what is or exists), ethics (the study of the good), aesthetics (the study of the beautiful), and perhaps a few oddments (such as metaphysics and the history of philosophy) besides.

Much of philosophy devolves eventually to the exact sciences. Mathematics was part of philosophy from Pythagoras to Euclid. Physics was part of philosophy from Aristotle to Newton. Biology was part of philosophy from Aristotle to Darwin. Psychology is just separating from philosophy now, with the emergence of the exact methods of neuroscience. And so on.

The main philosophical breakthrough in the last century has been the realization that many apparently substantive philosophical questions are at least in large part questions of language. The search for truth and meaning is

transformed when you separate off the linguistic aspect of the story. Here is the new theory of truth:

A sentence “*S*” is true iff *S*.

For example, “Snow is white” is true if and only if snow is white. Here is the key insight for the new theory of meaning:

Meaning is use.

More exactly, the meaning of a chunk of language is to be elucidated by examining the usage of that language in the relevant linguistic community. The meaning of an indicative sentence may be defined in terms of its truth conditions:

A sentence “*S*” means that *S*.

The idea here is to separate language from metalanguage. Truth and meaning are discussed in the metalanguage, which may include the language itself as a proper part (as in my examples). This theory of truth is due to Alfred Tarski and the theory of meaning to Ludwig Wittgenstein (meaning as use) and Donald Davidson (meaning via truth conditions).

As for the meaning of existence, this is a phrase that lacks truth conditions and binding usage precedents.

Shag: Philosophy used to be about such things as what knowledge is and how you get it. Lately, much of philosophy consists in splitting semantic hairs. As far as primary and secondary students are concerned, learning how to avoid the worst sorts of semantic imprecisions and rhetorical appeals to emotion are of great value.

When a text is flexible, such as is the case with fiction and poetry, learning to read with flexibility is a good thing, but I doubt that students need to be exposed to a completely eisegetical approach before they are doing university work. Jobs as eisegetes will be limited until everyone learns to read, and until no one really needs to work to earn a living any more.

A: A deliberately eisegetical approach to personal or leisure reading can help anyone who wishes to avoid falling into the sort of slavish literalism that makes bible-bashers so obnoxious. Just as many people don’t bother studying fine art but sturdily know what they like when they see a picture, so readers can relish the quality of a writer’s prose independently of what the latest pundit said about that writer. But even then, as you say, people have to learn to read first.

Mario: How are you defining truth? I ask because religions claim that their doctrines and principles represent truth. Also, I see the anti-evolution stickers on cars that show a Truth fish devouring a Darwin fish. Is there a definition of the truth concept that lies outside of the exact sciences?

A: There is, but you won't like it. If God says so, it's true. And if you want to know what God said, read the Bible. God is truth because it says so in John 1:1. The shtick goes like this. How can you explain the existence and orderliness of the universe without God? How can you explain the facts of life and consciousness without God? How can you explain morality, goodness, and truth without God?

My answer is this: How can you explain any of those things with God? By taking the most paradoxical and disputed concept in our entire conceptual world and hanging everything on it, you are committing an egregious act of *ignoratio elenchi*, a.k.a. begging the question. From a contradiction you can derive anything, and the standard Abrahamic concept of God is as near contradictory as a concept can be.

Explanation in science is a step-by-step process of giving better and better accounts of more and more facts, constrained by logic and evidence. Testing and checking at each stage are essential to the process. All this is missing in the "derivation" from a biblical god, and almost all this is missing in the bootstrap to "God" described within the biblical account of the self-revelation of that entity.

Religion was the pre-rational precursor of philosophy, and philosophy was the pre-empirical precursor of science. As with so much in evolution, the early stages of a development tend to live on in some form. So religion and philosophy live on for us. Philosophy still plays a useful supplementary role for the sciences, but religion is well past its use-by date and is metastasizing in the Middle East into something ugly.

In Germany we have a slogan: *Gib Nazis keine Chance* – "give (neo)nazis no chance." We need something similar for God-botherers such as Creationists and Islamist fundamentalists. Their God is a hubristic inflation of a human self – the "I" of "I Am That I Am" is the self of the recognizer of that entity.

If the word blasphemy may be allowed to have any serious meaning today, it should apply for all those who claim to know or represent or act in the name of the Abrahamic god. They are blaspheming against their own humanity.

Stud: The God of the Bible is revealed as a person, and he gets more personal as the revelation progresses, until you get to an actual human being, a God/Man in the New Testament. So to speak on behalf of the Abrahamic God is not a blasphemy of humanity, as God and Man share the quality of personhood, God simply being a much higher form of this.

A: Good, I can agree that the Abrahamic god is not omni-anything, and is properly conceived as a person. I would describe that person as a fictional ideal. When Moses claimed to speak for that god, he adopted that fictional persona, just as Charleton Heston adopted the persona of Moses in the recreation.

Alternatively, the biblical god was a real historical chap called Yahweh whose deeds got inflated in the telling. Perhaps, then, it was a good move to move the godhead to Jesus, who at least had the right personal qualities to deserve some respect. So on my reconstruction, Christians worship Jesus, and the trinity with all its hellenistic logic is metaphysical or psychological or theological baggage.

Fair enough. But worship? Jesus was just a man, unless you buy into all the baggage. You can admire a noble personality if you want, as I do for various historical personages who have done good things, but worship is something else. Self-improvement, the cultivation of a better personality, does not require such self-abasement.

People are naturally inclined to find heroes. If they have to worship their heroes, then let's be sure they have some good heroes to worship. Jesus is worth a bit of hero-worship, of that I have no doubt. But my heroes did not create the universe in seven days and so on.

For my part, to keep well clear of that sort of shameful idolatry, I prefer not to worship people at all. A scientist should not so far adulterate the search for truth as to accept such false gods and idols.

Ranter: Why do I see gulags and prison camps and secular inquisitions when I hear the phrase that fundamentalist Muslims and Neonazis and creationists are to be given no chance? Using logic we see that the suicide bomber and the Jew hater and the young earth creationist are all of the the same ilk. Why is it so ironic that people who praise tolerance are very intolerant of those who differ with them? Using this dogma, progress in science would be impossible because unorthodox scientific thinking or experimenting would not be tolerated.

A: The example of European history over the last century shows the dangers of excessive tolerance as well as the more usual problem of intolerance. Tolerance of communist agitation until it was too late led to several Red revolutions with bloody consequences. Tolerance of fascism followed, with its horrific consequences. And now, in the last few decades, tolerance of Muslim ghettos may soon lead to more horrors.

Suicide bombers driven by fanatical hatred of infidel kafirs, Neonazis driven by fanatical hatred of cosmopolitan dilution of racist nationalism, and Creationists driven by fanatical hatred of the idea that they may be related to other animals do have something in common. Intolerance of fanatical hatred is a painful duty. My favorite example of dutiful intolerance is Winston Churchill's intolerance of Nazi bullying.

Progress in science is not a matter of tolerating new ideas. It is a matter of subjecting them to rigorous testing and accepting only ideas that survive. I am an eager student of paradigm shifts in science and would never advocate a methodology that gave them no chance. But Galileo's ideas were easy to test and they worked, so despite 300 years of Catholic opposition they survived.

Einstein's ideas for exploring the atomic hypothesis via Brownian motion and explaining the photoelectric effect via photon emission were testable, which made physicists receptive to his deeper idea for reconciling Newtonian mechanics and Maxwellian electrodynamics, which was not so easy to test. As for the quantum revolution, there are the technologies and the ideas. The ideas are still a battlefield.

Moving to my own new ideas, I accept that that they are worthless unless they are testable, and I am happy that people are sceptical of them. If every wacky idea were blandly tolerated we'd be drowning in nonsense.

Panpsychism Part 2

Dude: Just popped over from the *Washington Post* to see how you were doing. It seems that panpsychism is a tough sell. Thank god for quantum mechanics, otherwise we'd be stuck talking about reality, boring!

A: Don't knock quantum mechanics until you've seen how it can reconstruct time, classical reality, the growth of knowledge, and the emergence of the psyche besides. Oh, and spin off nuclear physics, electronics, photonics, stellar nucleosynthesis, and the big bang besides. And not a god in sight, unless you count Planck, Einstein, Heisenberg, Schrödinger, Dirac, Born, Feynman, and the rest of the pantheon.

Dude: I'm not knocking quantum mechanics, just stating that it has been just as big a boon to religion and philosophy as it has to science. Even the fundie nut jobs are trying to use quantum mechanics to justify god these days.

A: Just happen to be reading a nice book by Rebecca Goldstein on Kurt Gödel. Now he was a nut job if ever there was one. But brilliant logician – many years ago I wrote a thesis on his theorems, and I'm still seeing new aspects of what he accomplished.

As for panpsychism, see *What the Bleep?!* and have all your worst fears confirmed. Verily I say unto you, we have a religion in the making.

Dude: All I understand about Gödel is that he proved that we can't prove anything. Hey, wait a minute. ☺

Soja: Your witty and interesting post amuses me. I need to know if the invitation was addressed to females in general.

A: This, dear readers of all persuasions and genders, is indicative of human psychology at its most atavistic. It suggests all too clearly the extremity to which one may be driven by seeking too earnestly to follow the wise advice of Mahatma Gandhi. More yet, it tends to confirm the veracity of the protestations of romantic love contained in the sublime poetry of Rumi, and suggest the pinnacle of yearning for God to which Jesus in all his innocence was driven. Psychology thus extremized can seem to move reality itself.

Which brings me back to panpsychism. When reality moves, it does do in consciousness dilated to transhuman extremes, from which it is but a bagatelle to perform the induction to infinity and say all is mind, reposing for the most part in deep, deep sleep, waiting for her panpsychic lover to kiss her awake.

Head: I'm starting from zero with panpsychism. I'm cool with the notion of everything having an awareness that is appropriate to its nature but that seems to do little to shed light on the human mind. From what pool does this awareness arise from? Or is it so idiosyncratic as to make its existence functionally irrelevant to us?

A: Panpsychism is hard to make rational sense of, I must admit. Kids often experience a primitive animism where even furniture can have a looming presence like the Ents in *Lord of the Rings*, and passionately idealistic lovers can sense the presence of the beloved behind just about any mask, even a desert landscape, so there are imaginative handles to grasp that are more than straws, I think.

Think of reality as having two levels, one below us and one above us. Below us is a domain of objects, which we're so used to that we see it in pretty sharp focus and know our way around in it and tend to think it's the only reality. Above us only sky – no, precisely not. And not just “God” either. But a domain that in our fallen state we can only grope at with such metaphors. Here I mean “fallen” not only with angel-out-of-heaven overtones but also with the resonance of Martin Heidegger's *Geworfenheit* (literally “thrownness”), which he coined to suggest the way we seem to have been thrown into the world (not just squeezed out of a womb, but that image is good here) and seem doomed to make the best we can of it. Here we are, in reality, almost drowning in it, and with only the Shining, the sky, G-d, the wavefunctional domain of all possible futures superposed in virtuality, or whatever, above us.

Logically, this is the contrast between particulars and universals, as reflected in the linguistic contrast between subjects and predicates in sentences. The subject term in a sentence denotes an object or a configuration of objects, and the predicate term qualifies it, or says something about it, or asserts that (as Gottlob Frege said) it “falls under” a concept, or in my own jargon, imposes a further determination upon it. My drift is that all objects are determined up to some level. They have properties and so on. But there is always room for more, and when we say something about them we indicate or explicate or contribute further determinacy. The informativeness of an informative sentence is precisely that additional determinacy.

The movement from the initial state of determinacy presupposed or denoted by an informative sentence to the final state, where the additional determinacy is now posited as inhering in the previously only initially determined state of affairs, is a fact, in what I hope is something like Ludwig Wittgenstein's sense (as stated with oracular brevity in the early propositions of his *Tractatus Logico-Philosophicus*). To assert a fact, as he said, is to

point to the existence of a state of affairs. He also said the world is the totality of facts. In my gloss, a mindworld is a totality of facts. I have relativized and dynamized Wittgenstein's picture in order to conform it to Kripkean logic (Saul Kripke, you may recall, revolutionized modal logic a couple of decades ago).

So, it takes two to tango. A fact is a movement between two states, an initial state characterized as a particular in a factual proposition and a final state further characterized by means of a universal in the proposition. This is a move between two adjacent levels in an ontology that can be modeled in axiomatic set theory. The move represents an epistemic advance. I see the movement as part of an epistemo-ontic process by which reality grows like a huge blooming plant. We humans are tiny points on top of this plant, growing with it. If we are little godheads, the huge plant is a massive one. If we are conscious, it is superduperhyperconscious.

This may or may not have resonances with such works as those of New Age physicist Amit Goswami and other thinkers from the Hindu tradition who find it obvious that the entire universe is a ocean of consciousness.

Soja: Mysticism is not about inventing clever theories. If you seek mysticism, go cold turkey on obstacles along your path. Reboot and load appropriate software for spiritual programming. Or stick to faulty software and remain muddled forever.

Mahatma Gandhi: I worship God as truth alone.

Edith Stein: Love without truth is a destructive lie.

A: These are all wise words.

Shag: There is a loose part rattling around in the machinery of someone who lays down the kind of verbal salad we have been treated to here. Perhaps that loose part is the godhead, but I'm not betting on it.

A: No loose parts here, except the moving parts, which are designed to spin free. I just got fed up with dull words that no-one bothers to read.

A spiritual quest is not a walk in the park with Jesus. And "god" is not a shameful word, just a word with wild semantics. I see myself as a scientific philosopher, and sometimes the job means getting my hands dirty.

Shag: Lock yourself in a freezer and fast for a week. Come out the other end, and we will see about the power of the spirit.

By the way, "scientific philosopher" is a bit of an oxymoron. With respect to science, philosophy works like the bootstrap code that gets one of your data banks up and kicking. One does not run the bootstrap code over and over again, hoping for a new and better operating system to take over. Unless, that is, one has indeed written a better operating system. Your verbal salad does not qualify.

A: If you think I think the power of the “spirit” (another word with wild semantics) has anything to do with cooling my nuts, you don’t understand a word I said. To do so, recall that “spirit” = *Geist* and read Hegel’s *Phänomenologie des Geistes*. Just for starters.

As for your views on philosophy and science, you evidently don’t have a clue what you’re talking about. I’ve done time with serious science and heavy philosophy, and I can tell you authoritatively there’s plenty of room in plenty of scientific debates for a notch more philosophical sophistication.

As for my “verbal salad” qualifying or not, it depends on how well you can reconstruct its semantics. To me, some of it is just fun, sure, but most of it means quite a lot. If others find it tough going, well, tough. As Einstein said, make it as simple as possible but no simpler.

Unk: Einstein searched in earnest for a theory of everything, and the search continues. But that seems to me to be a search for some version of God. What are you searching for?

A: The search for the Theory Of Everything in physics is analogous to a search for “God”, in one of the senses of that much abused word. But it is a search constrained by logic and evidence, within the discipline of a methodology, which so far as I’m concerned makes it quite different from irrationalist fanaticism.

Atheism is the refusal to recognize the significance what most people most of the time seem to mean when they use the word “God” – and in that sense I am emphatically an atheist, too. But I see the quest for a deeper meaning in life as a noble pursuit that I am not ashamed to call my own. I have spent enough puzzled years contemplating the science of meaning, to the extent that we have it in modern semantic theory, and the philosophical problems with such a science to know how little real significance need attach to a personally felt meaning, once found, but I am sufficiently convinced that both the quest and its goal are essential to life as we understand it that I shall not be dissuaded.

Unk: Do you position a panpsychic philosophical take as a potential solution to certain current or future problems? Does a panpsychic approach assist in prediction of natural phenomena? Does it potentially assist issues in psychology, or is it primarily a methodology with goals toward aesthetic appreciation of human knowledge and awareness as it has accumulated? Or maybe you’re attempting something analogous to string theory?

A: Well, one could almost say “panpsychism” is a label waiting for something new to attach itself to. Apart from the gloriously eccentric Galen Strawson, who among other things is responsible for the following gem:

Metaphysical thesis #36: “Reality is substantially single. All reality is experiential and all reality is non-experiential. Experiential and non-experiential being exist in such a way that neither can be said to be based

in or realized by or in any way asymmetrically dependent on the other (etc.) (Equal-Status Fundamental-Duality monism).” (2006)

I am not aware of any sustained attempt to argue the position in serious modern work. David Chalmers mentions it sympathetically in passing in his 1996 classic *The Conscious Mind*, and since he is himself such a sympathetic chap with a relatively coherent position, I feel inclined to nibble the bait.

Most modern scientists of mind are materialists, and tend to sweep under the carpet the conceptual problems of moving from third-person (3P) to first-person (1P) attributions of mentality. Following Daniel Dennett in his book *Consciousness Explained*, one can distinguish, ahem, autophenomenology from heterophenomenology. The *auto* word describes attempts to describe one’s own mental states. By contrast, the *hetero* word describes the mental states of others, on the basis of the auto babble they broadcast to the investigator, who considers the babble neutrally as if it were fictional. Scientists describe mind in hetero terms, whereas traditional Husserlian phenomenologists, stream-of-consciousness novelists, and assorted wackos describe mind in auto terms.

This division between 1P and 3P attributions of mentality is hard to bridge. The London psychologist Max Velmans makes a brave try with a neo-Kantian approach that I find hard to get my head around. Others simply give up and say here are two separate worlds, *à la* Descartes, leaving the mess for others to sort out. I say be monist, admit within it a fundamental, logical duality, indeed a conceptual symmetry (shapes of metaphysical thesis #36 here!), and see where it goes. This is more correctly called panprotopsychism or panpotentiopsychism, but I think we can all agree that panpsychism will do just fine as a label.

For David Chalmers, the hard problem is bridging the chasm between the 1P and 3P worlds. It’s a hard problem, which I tackle by introducing the concept of strange loops from Douglas Hofstadter (who as it happens was David’s thesis advisor). Since this takes us to the mathematics of Gödel’s theorem and axiomatic set theory, I shall break off here and simply refer to various of my philosophical papers (in *Mindworlds*).

As you see, this is still deep within philosophy. But I hope the payoff in terms of a unitive psychology on a scientific foundation is clear. As spin-off, we shall have no problem with the idea that suitably architected computing infrastructure (in a post-Google world) can be the substrate for mind. We shall upload our minds into such infrastructure and merge into a potentially immortal panpsyche. That’s good enough for me.

Stud: The biblical world view has assisted in creating fertile soil in which concepts of universal mind can grow. I think we start off as children treating the objects in the world around us as though they had mind, consciousness and personality. We become more one-dimensional and blind as we grow old, unless we consciously fight against it.

A: First, to bash the biblical world view again, we can take it as a prototypical mythology indicating some atavistic strains in human psychology that a future evolutionary neurobiology will enable us to explain to our greater satisfaction. One of those strains is the childish tendency (recall that ontogeny recapitulates phylogeny, so there is history to be mined in this tendency) to animate the world of things, which we need to separate from my cautious neomaterialist panpotentiopsychist binary-aspect monism. True, all of us grow old and lose certain perceptual sensitivities, and on the way run the risk of letting our minds fossilize around positions that are strategically hopeless, but if we remain aware of the roots of the positions we eventually embrace there is hope that the final positions will retain the shimmering possibility of ultimate resurrection.

Imagine arranging one's psychic landscape like furniture, perhaps like chairs for a game of musical chairs. Life in a human body is analogous to music. In one of my (much) earlier metaphors, the play of electromagnetic ripples over the neural layers of the cerebral neocortex is a kind of Platonic music, itself analogous to the celestial music of the spheres (if not identical – I doubt that Plato would have wished to separate them), and the metaphor suggests that as life slows down and the neurons begin to calcify (or fossilize, if you will) the music stops, layer by layer, and as in a game of musical chairs one is left sitting, or not, at the end. And here I am, not sitting on a professorial chair.

Unk: I don't know who gets you and who doesn't. You seem to have gotten something, and now feel like infecting others. If you have written with clarity about the subject at hand, link us to it. Or write more here.

A: This is not a doctrine I am concerned with propounding. On the contrary, I want a discussion. But being deeply immersed on the relevant arcana, I want a discussion on my terms, without digression. So let me whip up my word salads with any fancy dressing I like and don't fret about words you don't often see.

Nit: You go right ahead, hon, and pay no attention to the rest of us. I for one am simply honored to be in the presence of unsuspected greatness.

Shag: You sound just like any nutter on a street corner with or without a megaphone.

A: The only nuttiness in my story is the thrill of feeling at home in the universe, surrounded by a psychic luminance of irrefragible splendor.

Consider E8 and the crystalline perfection of its apparent reflection of the Standard Model plus more besides, such as gravitons. No good explanation yet, and no quantum theory, and not much else either, but still way cool.

Sadly, the math is proving rather hard for my softening brain, so I really can't enlighten you much there. But I'm trying. It makes a change from the boredom of eternal numinous splendor.

Shag: There's a bit of a divide between those who ponder the notion that "pondering" is worth pondering, and go whole hog for it, and those who try it a little, get it, don't find it all that irrefrangibly refulgent, and give up, leaving the whole-hoggers to root around energetically for diamonds scattered among the clods.

A: Since I found a conversational resonance with [Carl] on another thread and have just posted my latest thoughts there on the G-word, maybe a useful step here would be to cite an outtake:

The semantics of this "G-d" word have puzzled me for years. Some people seem to know what they mean by it and even succeed in deriving wise sayings from that purported knowledge. So I persevered. And now I think I have a sensible interpretation that makes some such purported knowledge, at least, defensible. Naturally, the word is so beset with false and confused interpretations and sheer demagogic charlatanry that one hesitates to use it at all. But the core significance is so interesting, and the need for a word with that significance so hard to deny, that I guess the best thing is to make the best of it.

[And so on – see page 144]

The Flux of Woo

Stud: There does seem to be a personal response from the universe that makes one feel at home. The reception of this response is typically experienced at the edges of consciousness, and is more often than not drowned out by the "sound of our own wheels" making us crazy.

A: I recall your religious tendencies with fond despair. For me, "personal" is a dud word here. When "I" fuzz out and the radiance suffuses all, the person has gone – unless it's me again, by the back door!

For example, when Moses claimed God told him "I am that I am" be very skeptical. Moses heard himself and spooked himself. The error snowballed through the whole Judeo-Christian-Islamic tradition until here we are facing Islamist nutcases who think their own mad voices are Allah telling them to kill us.

Stud: Instantaneous transmission of information is one of the phenomena that confirms the interconnectedness of all things. But at its core, the cosmos is alive, with the sound of music and wisdom and knowledge.

A: This may be quantum entanglement – in my speculative gloss, via deep-radio photons generated by our brainwaves – and suggests there is lot yet to be discovered as psychology slowly becomes a hard science.

As for the cosmos being alive, well, it depends on what you mean by "alive". We're alive, and we're in the cosmos, and the line between us and it is hard to draw (entanglement again), so yeah, sort of, almost by definition. But knowledge and wisdom, or their lack, are very human things, and the cosmos

surely has better things to be alive with than such foolishness. At least I hope so.

Wolf: I find your sesquipedalianism a little on the oppressive side, if you know what I mean.

A: Okay, antisesquipedalianist panpotentiopsychism 101:

George Berkeley: *esse est percipi*.

All that *is*, is for us or me, somehow. A primitive objection to Big Bang theory is that we can't know because we weren't there. I say nonsense, of course we were, in imagination, just by entertaining the theory.

All reality is layered in levels of virtuality. The really real before my eyes shades off into the virtually virtual of quantum superpositions of elementary particle configurations beyond the cosmic horizon, in countless layers and gradations that I would happily present using a mathematical metaphor if I thought you would want to read it.

A world, any world, any real or virtual or in-between mindworld, is brought to a unity in what Immanuel Kant called the synthetic unity of apperception (translating from his German). We, the subjects, the observers, bring the manifold of phenomena together into a world.

A world has a navel, to use an old metaphor. The navel is the observer, the participant, the subject. All that surrounds us is part of our extended mind. Your mindworlds and my mindworlds overlap and interpenetrate, but we each form the centers of our own worlds.

We each star in our own dramas. We each build worlds in which our little analog selves bounce around like cursors on a computer screen. I have two heads, a big one and a little one. The big one hosts the whole show. It is a world, a series of worlds, a universe, a multiverse, an omnium. The little one is the analog self, the human me who bounces around doing things inside the big one. My little head is inside my big head, but they are both the same head. Paradox! Dizzying spiral into Hofstadterian recursion!

William James: The axis of reality runs solely through the egotistic places – they are strung upon it like so many beads ... The world of our present consciousness is only one out of many worlds of consciousness that exist. (1902)

Soja: Does panpsychism have anything to do with pantheism?

A: I must admit that my panpsychism has a coloration or suggestive aura that tends in the direction of what one may call pantheism, but I nevertheless wish to reject the label, because I am wary of the “the” in it.

Theologians distinguish theism from deism. Deism is belief in a god or gods, rather neutrally. Theism is belief in a revealed and personal god, as in the Abrahamic tradition. So my panpsychism, which I see as a framework for a

paradigm in psychology that opens the way to contemplating a more flexible implementation of consciousness in physical substrates, more properly has its ideological correlate in pandeism, not pantheism.

However, I prefer not to encourage mutation of my paradigm into an ideology. I wish it to be understood as a contribution to the transformation of psychology from an uneasy mixture of interesting laboratory work and shallow or fallacious theorizing to a genuine and properly founded science. If it later spawns a movement analogous to pantheism, so be it, but I do not wish to push my ideas on that basis.

The brilliant California neuroscientist Vilayanur Ramachandran said a few years ago that psychology today is like electromagnetism at the time of Michael Faraday. It is a mixture of interesting new results and theoretical confusion, still at the “tinkering” stage, as Rama puts it. I guess my ideas here are more like Faraday’s intuitive concept of a field than Maxwell’s neat field equations, but these are still early days.

To put my cards on the table again, I see theism as a primitive human outlook that is best explained in evolutionary terms. The Abrahamic god, the “God of our fathers” (Goof), is a species attractor that I believe shows Dawkins’ genocentric view of Darwinian evolution to be essentially correct. Once you see that, you cannot naïvely believe in Goof. You can accept its power, just as you can accept the power of hunger as a behavioral driver, but understanding drives out superstition.

To recall another card I played, my trinity of Bopp (the being of physical phenomena), Goof, and Soia (the self of introspective awareness) trisects the former playground of the theists. Bopp is outside the scope of Goof and a religious take on Bopp can only be deist, not theist. As for Soia, that’s the big self of my panpsychism.

So no to pantheism and no to pandeism. Yes to plodding on with psychology.

Shag: I find this far more fascinating than the tedious flux of woo that has besotted this thread.

A: The flux of woo is a problem. The science of things with woo is hard to keep clean. One is constantly wiping wooflies off the windscreen.

After panpsychism 101, let me cut to the chase. Individuals and universals form the floor and the ceiling of the space we move in. Each time we fix the ceiling it collapses and becomes part of the floor, and we look up to a new ceiling. Years ago I called this an epistemo-ontic dialectic unfolding in time, and saw analogies with evolution in all its forms, of species, theories and so on, and with the quantum process of superposed possible futures collapsing into successive actual states in the moving present.

Then I saw that this has a direct correlate in what goes on in the brain. We bat thoughts back and forth between the cerebral hemispheres, or more generally between cortical regions or neural groups, and in each exchange one side

plays the individual and the other the universal, like the two poles of a proposition in quantificational logic (or “limpid logic,” as Rebecca Goldstein calls it in her book on Kurt Gödel). When I put this into set theory, individuals map to elements and universals to classes, and the course of an epistemo-ontic dialectic unfolds as a smooth ascent through the cumulative hierarchy that forms the standard model of axiomatic set theories (such as Zermelo–Fraenkel, ZF, or von Neumann–Bernays–Gödel, NBG). All this enables one to define mindworlds.

So the course of a conscious life is reflected in a succession of mindworlds, stacked like the minimal models of successive initial segments of the cumulative hierarchy. The successive states can perhaps even be mapped plausibly to successive wavefronts emerging from the brain as the neural traffic generates them. The brainwaves of most interest for consciousness researchers are 40 Hz waves (plus or minus a few Hz) that apparently arise from the neural firing patterns that implement concept binding and possibly the unity of consciousness. So the wavefront patterns correspond in some potentially mappable way to mindworlds.

Matzo: I’ll suggest that (a) there are paradigmatic systems for coordinatizing these various mindworlds in ways that are culturally dependent, but in the end structure the basic aspects of being human; and (b) the progress through is not endless but rather a climbing out.

A: This is good.

(a) There are certainly systems based on paradigms that in effect put a coordinate raster on mindworlds (Boolean algebra is one such, or a generalization as in topos theory, and quantum mechanics may be another, preferably in a discretized version as in loop quantum gravity) and facilitate cross-cultural comparisons, at least in principle. The possibility of normalizing what are otherwise incommensurable worlds is a big attraction (for me, who has a stake in getting this idea up and running to some useful effect). That we may thereby find a basis on which to agree as to what is human would be a welcome corollary.

(b) The progress certainly looks endless. If it is climbing out, that can only be to a state or level that allows no further progress, which by definition we would be unable to see from down here. Hence faith in the existence of that state would be faith. How can we characterize it, except asymptotically or programmatically as the conjectured state from which there is no more change? My formal model for all this is set theory, and the ultimate state there is sheer contradiction. The reflection principle guarantees that any definable ultimate state can be reflected within a penultimate state, and so on. In physics the ultimate state would be timeless, eternal, as in Einstein’s pre-quantum block universe.

Sorry, 101 survivors, for the woo factor here. Shop talk happens.

Soja: You have just proved that your panpsychism, whatever that is supposed to be, has been disproved. Be warned of the immense psychological “benefit” panpsychism, or whatever that is supposed to mean, promises.

A: You do not understand what I understand by panpsychism. I expect no benefit from it except conceptual clarification of the concept of consciousness.

In one sentence, pansychism is the idea that everything is brought to a unity in consciousness, which is always centered on a subject.

This is not pantheism. There is no point worshipping an anticipated future state of unified consciousness, even if it would be kinda cool.

Panon: Pantheism has been described as being a synonymous euphemism for atheism. But why then are New Age religions decribed as being somewhat pantheistic? A pantheistic “god” could be envisioned as being an “essence” whereas a theistic god is an anthropomorphic guy-in the-sky deity.

A: Pantheism is an “ism” with “the” in it but no negation. A slippery slope to the sin of idolatry! Consider the “pan” and recall monotheism. Bingo – all is one in the Absolute. Hegel. Philosophy sublates religion. Invert the idealism – Marx. Apply the result – Lenin. Follow through – Mao Zedong. Take away the number you first thought of – Communism minus the Absolute equals get rich quick.

Where does that leave pantheism? As the Esperanto of religions. Where does that leave getting rich? Well, money talks louder than Esperanto speakers.

Stud: In your concept of mindworlds, do these psychic universes have an objective pre-existence, or are we creating them as we explore the boundaries of our own consciousness-potential? Are we moving toward something that is already “out there” (filling a psychic space that awaits us) or are we making up the levels of consciousness as we go along?

A: One can see them by analogy with parallel quantum worlds, which some physicists see as a fictional byproduct of the formalism and others see as literally real, as real as us. As fictional worlds, they would be like the virtual worlds of games and simulators. As real worlds, they would be like planets or hotel rooms we haven’t got around to visiting yet. Both perspectives seem plausible, and the logic seems to force the symmetry of the situation until we break the symmetry by realizing or visiting one.

The general drift in science has been to accept the reality of things that seemed less than real when they were first conceived or discovered. This is like mathematics, where irrational numbers, complex numbers, transfinite numbers, sets of all kinds and so on seem arbitrary at first but then come to seem as real as natural numbers. In recent physics we have had antimatter, quarks and gluons, dark matter and dark energy, and may soon have super-symmetric partners and Higgs.

Personally, I like the view that we are making up mindworlds as we go along. The idea that all possible mindworlds, including those in which we do or suffer nasty things, are all out there, as real as here and now, seems uncongenial. Also, I suspect the idea that all such worlds exist at once, even in a vast omnium, is contradictory somehow. Since by definition we can only regard the mindworlds we have created or visited as definitely real, we might as well regard all the rest as fantasy.

If you believe in free will, the idea that we create the future as we come to inhabit it makes more sense. We decide on how we want our future mindworlds to be and take an active part in shaping them. In terms of a flowering process in which initially tiny fluctuations have what can turn out later to be huge effects, this is a logically respectable outlook. Reality blooms time and time again, and we bloom with it. But this is all a vague metaphor, a promissory note. Whether we can cash it is another matter.

Matzo: What I meant was something more along the lines of a neo-Platonic hierarchy where we begin with basic biological constraints and impulses and then channel and direct these at higher and higher levels of refinement and development. For example, if you look at a description of Highest Yoga Tantra there are levels of development with specific points of recognition that indicate a person has reached each level, and interestingly enough you find similar structures in Renaissance natural magic.

A: I see the mindworlds story as a psycho-calculus that applies to any psychic development at all, independently of its tantric refinement. Perhaps, once my calculus is fleshed out, it will enable us to define clearly what is special about such apparently refined states, but perhaps not. This can only be a pious hope on the part of those who would like to confirm their feeling that such refined states are special. Yet, as you say, there are parallels between different traditions on the idea of levels of consciousness, so perhaps it could be a test of my calculus that it enables one to reconstruct a sense in which such states are special.

Matzo: Maybe we can't see it from below, but at the same time if others have been there we might have descriptions. In the sense I was talking about, it would be something like a pure consciousness state. In set theory, you're right, the absolutely infinite isn't definable except through the *via negativa*.

A: The idea that others have been there is suspect. Humans are animals with hypertrophied neocortices, and the idea that such unstable chemical stacks can achieve states of the electromagnetic excitations inside their skulls that enable their intentional worlds to make contact with the cosmos in any sense that does not ultimately reduce to something rather trivial is for me most implausible. Perhaps the tantric art here is so to condition my cerebral EM field that it seems as if the cosmos finds its *fons et origo* in my pineal gland, or something similar, but my own consciousness, for one, is too jaded by recalcitrant experience to accept such an idea.

On the other hand, perhaps all of us nurse a deeply buried fantasy that we are the centers of our universes in some more than empty logical sense. I think this is part of the appeal of monotheism – if I love God and God loves me, how sweet and lovely all will be!

Stud: I believe in Will. The higher our intelligence, the deeper our experience, the broader our education and the longer our lives, the better chance we have of experiencing free will. Which leaves most of the huddling mass of humanity out in the cold. So, most people are destined to stumble aimlessly through life, unless there is such a thing as an objective universal personal reality that reveals itself.

A: I guess that will may be defined as something like the power of causative agency. Causation and the ability to cause specific things to occur are presupposed as meaningful notions. Sadly, modern physics makes causation at the deeper levels of reality moot. A cause must precede its effect, yet both relativity and quantum mechanics put the uniqueness of time orders in doubt. Unless there is a preferred reference frame, relativity lets you rotate space-time coordinates to turn time into space and vice versa, messing up orderings. And quantum mechanics seems to let what you do now change what happened before, via entanglements, in the way that opening the cat box reveals the cat to have been dead a while, or not.

The existence of will and its freedom are persistent illusions, as Dan Dennett, Dan Wegner, and countless others have persuasively argued. Yet our own sense of our free will is invincible, apparently essential to life as we understand it. My response is to question the physics and to regard the conclusions there as less than conclusively proven (there may be a preferred frame defined by the self-gravitation of a finite universe, and there may be hidden variables behind entanglements defined via quaternions), then to look at brain physics, using parts of physics that are safe enough not to be questioned. As I see it, we think by balancing alternatives until the tiniest asymmetries can tip the balance. These tiny tippers appear via feedback loops of such complexity that we think we provided them.

Maybe this leaves most people out in the cold, but I don't think so. As for experiencing a personal power that reveals itself, this sounds ominously like the boss muscling in. I say leave Gene Goof out of this. Maybe the genetic deity does push most people around, maybe even with unutterable sweetness and mercy, but still this looks to me like our ecstatic falling into slavery – as if to throw away the burden of freedom we would otherwise have to endure.

Matzo: When you talk about a psycho-calculus involved in the construction of mind worlds, you have to get down to the basic level of the mind from which everything else emerges or is constructed. For non-self-conscious beings, anything that arises is sensory bound and conditioned by exterior inputs. For us, there is the possibility of carrying out constructions of our own. There are various systems that provide scaffolding for doing that and we can gain information from them.

A: Yes, indeed, you have to go down to the basic level. And for all of us, however musclebound with intellect, this means sensory input and proprioceptive input. The constructions we make from these raw materials can be very convoluted, and the effort required to reconstruct the resulting mindworlds can be almost entirely taken up with those convolutions, but we're only done when we hit base.

You are surely right that various systems can give us clues as to how to understand the more exotic mindworlds that history offers for our contemplation. For me, however, they hardly scratch the surface, and I hold out little hope of learning much from them. Let me offer an analogy. The IBM Blue Brain project in Lausanne is simulating a pyramidal column (about ten thousand mammalian cortical neurons organized around a pyramidal cell, which is the basic building block of any mammalian neocortex) with unprecedented exactitude. I imagine multiplying this project by a factor of a million to reconstruct the mindworld of an ordinary person on an ordinary day, then by a lot more to reconstruct the more exotic items from history.

Matzo: With all that complexity, perhaps the best way is to look at the existing systems and take a thermodynamic or statistical mechanics approach. The correlation of color with specific mental states, for example, may not say much about the electrochemical quantum interactions in the brain but it certainly says that at the operational level there is something worth knowing (as advertising executives already know).

A: Certainly, statistical approaches are our only hope here. But we shall probably need new supervenient concepts to do justice to the data, rather like we needed entropy in thermodynamics. If we try to go with qualia and the concepts of folk psychology we could miss a lot of deep understanding.

As for color, the operational understanding of marketing consultants and fashion gurus can be like unfounded superstition. Consider the analogy with Goethe's "theory" of color, which no-one can really do much with, compared with Newton's theory, in terms of wavelengths, from which a lot of good understanding flows. Getting down to the photons has helped us with color, even if there is still "operational" stuff yet to be mined.

But what about time? The evolution of a consciousness is an ordered series of mindworlds, and the ordering dimension is time. But can the timeline always be mapped exactly to the public timeline? Can there be circles? Can series of mindworlds return to earlier worlds, perhaps null states, to form loops? What is special about the *now* world? Is it the world centered at a point on a loop that is just there tangential to public time? And does public time go straight to infinity or does it ultimately loop too? (Is the universe open or closed?)

One thing I find exciting about time here is that it is definable in terms of the succession of worlds. Since world succession is an epistemological notion (and worlds are ontic), we have a mapping of time to changing perspectives that may allow relativistic rotations of time to space. Someone recently

rewrote quantum mechanics to replace time by an epistemological notion of this sort, and got excited because it gave them a starting point for reconciling quantum theory and general relativity. I am happy that mindworlds allow one to do something analogous. What I would really like is to define mindworlds ultimately in terms of configurations of photons, rather as one defines the observable universe as the space photons have had time to traverse since the big bang. If the mindworld photons carry neural EM signals, we get explanatory closure.

If all these worlds are defined by vibes from our brains, we have a truly new-age, what-the-bleep, woo-woo paradigm bursting with sun-kissed promise, ripe for celebratory merriment.

Shag: I'll drink to that!

Matzo: It has seemed to me that subjective time has lots to do with information processing and memory effects. If there is a lot going on, time may seem to be passing very quickly, but in memory it seems to have extended much longer.

A: Yes, I think this very widespread experience has something to tell us. Subjective time relates to the perceived rate of change of salient features of a midrange mindworld. (Mindworlds can be fine-grained, changing at the flicker frequency, or they can be big aggregated things, like the world of the information age.) Some moments bring phase changes, sudden transformations, like those that physicists see as dramatically broken symmetries. But for me, every transition from t_1 to t_2 breaks a symmetry between all the possible futures relative to t_1 in favor of a unique state at t_2 and a different range of possible futures. The primordial moment had perfect symmetry (said Heinz Pagels), then information accumulated, until now it takes $O(10^{123})$ bits to describe us (says Roger Penrose). Tomorrow, a few yottabits more.

Stud: Can there not be a t_1 for which there is no possible future except one? A person standing unsheltered at ground zero in Hiroshima on August 6, 1945, the instant after Little Boy detonated and the instant before the blast hit him/her, had one and only one possible future – cessation of physical existence. If there is only one possible future, then an order of cause and effect has been established, a sort of predetermined path in which time must flow, like a river entering a canyon. Do you not agree that some things are inevitable and predetermined?

A: The physics predicts a range of possible futures even in that dire eventuality, albeit in this case a range that offers little comfort to the person about to be annihilated as a denizen of this world. For example, at the moment of soular annihilation, the spirit of the deceased could be reincarnated as a young American, destined to stride forth and in the course of time to die in the jungles of Vietnam – or become president. That is, the music of his brainwaves plays on just as soon as it finds a new pile of flesh to

animate. This is just one way to translate the quantum cornucopia into a mentalistic tale.

Dude: When we were discussing determinism, you said that you thought we could influence the future state, beyond the causal chain that determined the next state, via free will. Are you saying something different now?

A: I think and hope I said this could be the case or seems to be the case. Free will seems invincible, but as Dan Dennett and Dan Wegner plus a slew of others have persuasively argued this may very well be an illusion. The fact that we need to kid ourselves that we have it doesn't make it true that we do. The fact may be a mere contingency of biology, or rather of the need for a self to nurse sufficient self-love to preserve the fantasy that it's all worthwhile and all will be well.

Dude: I believe in determinism but I don't believe that the future is predetermined. You can predict a future state based the current state but that doesn't become real until that virtual future becomes the present reality. But you were talking earlier about out-of-order time.

A: So you're a believer now? I recommend philosophy 101. Relative to now, all my futures are virtual and one will eventually become real. Looking back from now, the earlier apparent possibilities seem illusory and my acts seem determined. But this is 20-20 hindsight. A similar confusion dogs expert discussions of entropy (as David Albert and Brian Greene correctly note).

Dude: Can you give an example of a conscious choice that wasn't determined by the causal chain that lead to it? Even if you choose to flip a coin that determined the next future state there was a causal chain that lead you flip the coin. How do you know there was a causal chain leading up to it? Perhaps the universe as we experience it is just a giant quantum fluctuation.

A: If a causal chain can be discerned in the events preceding a given event E , this chain may help to determine E but it need not do so up to uniqueness. For example, a serendipitous concatenation of hidden variables may be needed to complete the story of E , and these variables might only later become revealed to us. But in any case, the attribution of causal efficacy to a chain of events is always in some part conjectural, as David Hume clearly stated and as no-one since has been able to deny.

Determinism is a belief based on faith in the synergistic influence of powers that remain for the most part hidden.

Soja: I haven't read a single thought or concept yet that can't be traced back to religion or what is everyday knowledge about human interactions.

A: That only proves you're not reading with sufficient attention. I don't recall religionists discussing Ricci or Weil tensors, for example, and I'm sure such concepts are not everyday knowledge.

Soja: Only after the discussion has come to an end will I be able to determine what exactly you mean by panpsychism. For all the effort and time you and the others are investing, I hope what emerges turns out to be a little more than everyday knowledge/religion in dazzling Oxford vocabulary.

A: What I mean by panpsychism is close to what Immanuel Kant meant when he described his approach to epistemology as like another Copernican revolution. All we see and all we understand is phenomenal, not noumenal, and is subject to the shaping imposed by the psyche. We see reality through the spectacles of the categories, which impose a categorial grid that gives rise to the antinomies of pure reason. In other words, the way we see and understand things creates pseudo-problems that we are systematically unable to solve. Ludwig Wittgenstein later attributed such pseudo-problems to the mechanism of language, which “goes on holiday” when we try to tackle the ultimate questions. I see no religion here and precious little everyday knowledge.

Shag: Research may aim to be unbiased, but the decision about what to research is somewhat arbitrarily determined by prior research.

A: I see no arbitrariness here. If you look at the long history, there is a trend, a wave with a leading edge. I aim to be somewhere near that leading edge for the big picture. We need long views to keep the detailed work on course. Imagine driving with your eyes closed. There is bias here, of course, but it is explicit and in principle open to correction. If I tend to see everything with a rosy tint, I can be sure some sourpuss will come along and paint a jaundiced hue upon the scene. This is one of the strengths of science, and you are all playing your part bravely.

As to where all this is going, I don’t know how often I need to keep saying what seems to me to be much the same thing. Psychology as we now understand is not yet a hard science. Lots of good bits and pieces are waiting for a coherent overview to give them their proper significance. Unless and until we understand the scope of the mind and its power to lurk in strange disguises (gods and so on), we shall keep falling short of the view we need to put it all together. Psychology is as fundamental as physics, but different. I aim to find that difference.

Dude: Unlike panpsychism, which exists only in the mind, determinism is self-evident.

A: Unlike determinism, which exists only in the mind of the true believer, panpsychism is self-evident once you open your mind to the truth. No doctrine, no dubious claims, just a plain fact that one can build on.

Shag: If anything you seem to be saying fell other than squarely along the geodesic of what certain sorts of people often decide they want to hear, I would have more respect for your vision of where you are placing yourself in this market.

A: I see no merit in simply affronting people. If I want to persuade anyone of anything I have to go this way. On a platform of wide agreement the novelties have more chance of taking root.

Shag: The fact that nothing you speculate about has any unpleasant resonances for anyone, always striving to sound optimistic and expansive – this indicates to me that you are not on the leading edge of anything other than a marketing scheme aimed at a very narrow demographic.

A: I am a prophet in the wilderness. Apparently my views are too unorthodox for the academic establishment. By presenting them nonconfrontationally here I aim to find out just where the rub is. Somewhere in my soft-soap story you will all fall back and say no. Then I know what my problem is.

Shag: There is a difference between applying Ricci tensors in a context where they are meaningful and simply dropping names.

A: The point of all this name dropping is to put the ideas in a serious context. I want them to be judged as serious in that sense. Anyone who wants to call me on a reference is welcome to do so.

Shag: The profusion of unsung genius stands before us like a rainforest. If a tree falls in that forest, the sound it makes is that of talking to itself. A platform of wide agreement without any data is an indicator only of the suggestibility of the human animal.

A: So was it ever with philosophers. By consorting with thinkers and dreamers, I have become a thinker and dreamer myself. Obsession with data is for stamp collectors. The world is awash with data, but it seems to me that no-one sees what sense, if any, it all makes.

Shag: You are talking nonsense but the sound of it is musical to your ears. You seek a non-confrontational audience precisely because your stuff is as content-free as elevator music.

A: Immanuel Kant said poetry was mellifluous nonsense. But my work is not really poetic. There is real content in my stuff but it is not where you expect to find it. On some religious themes my statements are very confrontational. This tells me I have work to do there.

Soja: What you mean by panpsychism seems like an attempt to resurrect or describe with a different vocabulary what two of your favorite authors have already worked on. It is possible you are trying to modify their concepts. But even on their part it was not original to begin with and their concepts are riddled with obvious flaws. As an atheist who has very little knowledge of religions, you cannot be expected to see religion where religion is light as day to me.

A: I am not seeking originality, I am seeking truth. There is such a thing as a perennial philosophy that merely finds different expression in different eras. So it is here. The physics-psychology nexus I have been glossing here is a

new bag for the beating heart of this perennial outlook. But putting two cats in one bag is not a recipe for peace.

Religion for me connotes willed adherence to ideas one does not understand. Given the history of religions, it appears that no-one could possibly understand many of those ideas, because they are nonsense, considered from the more critical perspective of modern philosophy.

Similarly, many ideas that survive somehow in philosophy are nonsensical when considered systematically. Like tempting sirens, they can draw one onward but then leave one becalmed in seas of weed. Modern science is merciless at discarding the worst such tempting ideas. My own ideas can also tempt me to sail close to the wind.

Matzo: What do you think about Penrose's idea about wave function collapse triggered by diverging parallel universes?

A: I think the universal split and wavefunction collapse are really better seen as two aspects or descriptions of one and the same physical event, or rather non-event. I tend to go for the relative-state view of Hugh Everett III, as resurrected last summer via new results by David Deutsch and others, whereby in the new formulation the "parallel universes" emerge from the quantum chaos like temperature emerges in classical statistical dynamics. In this new view, there is no collapse of the wavefunction, hence no Penrosian "Orch OR" (for "orchestrated objective reduction") and no "one-graviton" criterion for Orch OR in the cerebral neuronet.

Roger Penrose and Stuart Hameroff spent years propounding together the doctrine that Orch OR was somehow an implementation of the exercise of free will in consciousness. They imagined that this Orch OR occurred in microwave photons generated by laser action in microtubules within neurons. Technically, the idea was wild from the outset, and drew heavy flak – I recall especially the devastating criticism by cosmologist Max Tegmark – and now attracts little interest. In my *JCS* review of Penrose's book *The Road to Reality* I reported the new consensus in the (cited) immortal slogan "microtubules – my ass!"

To be honest, my own idea that deep-radio photons generated by brainwaves may show collective quantum behavior that somehow relates to free will is not much more plausible than the microtubules story. But until the detailed work is done we shall not know that.

As for Penrose's quantum gravity idea that wavefunction collapse is triggered at the threshold when the energy difference between the alternative possible universes gives rise to a spacetime delta equivalent to a single graviton, I think it is just a throwaway idea, which is a polite way of saying a nonstarter. The Deutsch picture that there is no collapse, just emergent classicism giving rise to disjoint entanglement collectives, is better, in my opinion.

Shag: I think some of what you are gathering together here resembles data mining, metaphorically speaking. I think you are trying to form a pattern. I think you are trying too hard.

A: Keeping the finger on the pulse of humanity, so to speak – and getting wooflied by Jesus freaks at every outing. How come every attempt to talk about something serious gets hijacked by Christians? As for trying too hard, when I hit the jackpot (in some sense yet to be determined) will be the time to relax.

Stud: You might as well say that resurrection is also a possibility of “physics,” in which case I have no further need of arguing. A collector of “brainwave music” (referred to by the unsophisticated as “God”) might put that musical score in a hymnal, and later present it in an orchestral piece at the final judgment. Why not just admit that maybe Jesus knew what he was talking about?

A: The body rots. What could happen is that a future scientist builds a substrate (in superhypernanotech) and uses it to replay the music of my soul, much as you might replay an old Beatles album. That music would of course be holographically recorded (via deep-radio photons) in all the natural mass around us, waiting to be extracted by xxx-tech yet unknown.

In an earlier work (my novel *Lifeball*), I saw each of us as having a soul number (something like the number of the universal Turing machine) that a future scientist could dial up on a superhypernanotech fax machine to print me out anew, so to speak. Or rather, print out a thing somewhat like me that claims plausibly to take up experience more or less where I left off – a kind of Rip van Winkle.

Not much comfort for you Jesus freaks in that, I think, and no need at all to “admit” that Jesus knew any more than you or I do about resurrection.

Dude: Which came first, panpsychism or the material universe? I believe you are forced to say panpsychism, otherwise the universe could and did exist without any conscious description.

A: The pansyche and the universe are coeval, and the pansyche was very primitive back in those Planck times.

Only recently (in the last few petaseconds, to be more exact) has consciousness as we would recognize it dawned in the pansyche, and even now only locally, in the island universes encased in mammalian skulls. But it will all go on evolving, until we reach Teilhard de Chardin’s omega point.

Soja: Perennial philosophy is a term you have pinched right out of religion. As you are fully aware, it has been written about from a religious perspective. Religious philosophy is perennial.

A: No, religion pinched it from philosophy. Philosophy is philosophy, perennial or not.

Soja: From being a philosopher singing the glories of the super sci-fi computer world or mindworlds or panpsychism or whatever, you have now moved on to physics-psychology nexus.

A: Exactly, because they go together. Science as we now know it stops at the psyche because we don't have a decent paradigm there. I humbly offer to provide one. Then we can boldly go where no man has gone before and build a planetary consciousness – nay, a Dyson sphere consciousness! Freeman Dyson had the idea that our descendants would one day mine all the planets for stuff to build a huge sphere around the sun a kilosecond (300 gigameters to any prerelativists who can't do conversions) in diameter, to catch all its solar energy and give us a really big inner surface to live on. Nay, a Kondratieff Level III consciousness!!! (He proposed that Level III was when we exploited the resources of an entire galaxy.)

Soja: If you are not seeking originality but only the truth, there is only one man in history who claimed to be the truth, not to have the truth, but to be truth itself – Jesus Christ.

A: Boring. Jesus claimed that “I” am the truth. Given the panpsychic resonance of the Mosaic “I” there seems no reason in my way of thinking to deny it, so long as we now read “I” as denoting Gene Goof.

Matzo: The underlying motive for Penrose's belief that consciousness is non-computational is not a question of whether or not we could ever build a thinking computer, rather whether that computer would be just a better version of current machines, or one that had intrinsically non-algorithmic features.

A: I fear that Roger Penrose's underlying motive for not wishing to be a Turing machine was that he felt that such an idea would be too demeaning for one who saw so clearly into Platonic heaven as himself. Without wishing to put words into his mouth or seem excessively satirical, he sees his insight into mathematical truth as more godlike than comparison with a mere syntax cruncher could accommodate.

I explored the idea that we may be Turing machines at length in my 1996 novel and concluded we were not, for three main reasons. First, quantum theory suggests that we shall never be able to write a deterministic machine table for a human. Second, human input and output streams, though approximately digitizable, are not perfectly so, for reasons to do with chaos (below-threshold deviations grow uncontrollably). And third, our inner states are not sufficiently well defined to be identified with the precision a machine table would require, for reasons both quantal and chaotic. So we're not robots.

Even if we were biobots (DNA-based universal Turing machines, UTMs), Stephen Wolfram's arguments would apply to prevent our being able to predict our own behavior. Essentially, he rightly points out, given the Gödelian predicament revealed by Turing's halting problem, the only way to determine

the behavior of a UTM is to run it and see. And given the complexity of a humanoid UTM, it would be hard to run the sim faster than we run.

Wittgenstein's philosophy of mathematics circles repeatedly around the idea of the strangeness of following rules. What does it mean? When do we do it? If I say the correct continuation of our arithmetical practice is to say here and now that $2 + 2 = 5$, there is nothing in principle you can do to stop me except to say that's not what you understand by arithmetic. So, to return to the robot problem, who's to say whether I'm following my UTM definition or not?

Dude: My reading on the omega point seems to say the universe's consciousness cannot be dependent on the material universe, otherwise it could not be drawing it toward a higher order. So it is outside of space and time. Is that how you view it?

A: Well, not really. I see the omega point more as Barrow and Tipler see it in *The Anthropic Cosmological Principle*, where if I understand them correctly the dependence is mutual, which is how I'd see it *a priori*. For me, subject and object are equal and opposite, locked in a complementarity that admits no asymmetric priority. We have two perspectives on one and the same reality, from the *S* end and from the *O* end. The spacetime continuum may not be continuous after all, if the LQG (loop quantum gravity) guys are right, but discrete. And at the first moment, on this view in its more radical form, there was only one fuzzy point, which became two, and so on.

Shag: We should choose to represent [mind] by a character from the Greek alphabet (to honor the Platonists) so as better to represent it in equations which also contain x , y , z , and t (choosing Cartesian coordinates for those who prefer to say, "I think that I think, therefore I think that I am").

A: Sigh – *psi* – to honor not only panpsychism but also the Schrödinger wavefunction Ψ and to recall the ideas of some that its probability amplitude diffusion effect is definitely mental in some sense. Then too we know how to bundle ψ with x , y , z , t , at least until the hypothetical day when physics moves beyond spacetime and probability. The wavefunction of the universe becomes universal ψ , or pan ψ , panpsy, the science of which is panpsience or panscience or omniscience.

Shag: Mental? You make the most common and trivial errors of bozos trying to understand quantum mechanics through the erroneous interpretations of people who do not understand its application. Do you really think crystallography would mean anything if the "probability amplitude diffusion is definitely mental in some sense"?

A: I am quite aware of the exactitude of crystallography. I spent years teaching physics, running a physics lab, setting up experiments to show quantum effects. The word "mental" has very elastic semantics. The Schrödinger equation in some of its forms looks like a diffusion equation. But what diffuses is a wave that gives probability amplitudes, which for interfering particles can give rise to entanglements (correlations of measured

properties) and for non-interfering particles probabilities of detection. All quite objective, so far. But some people (some of whom didn't know what they were talking about and some of whom did) saw some kind of "mental" aspect to all this (recall Schrödinger's cat, Wigner's friend, Penrose's Orch OR, Deutsch's subjective probabilities – these people are not bozos).

My perspective here is to say the whole wavefunction story can be given a mentalistic (or rather a pansychic) interpretation, essentially by regarding Deutsch's subjective probabilities as defining a subject (or otherwise put an extended entangled state), so that Everett's relative states become "mental" states, which does not exclude their being objectively definable and does not imply that we are free to choose what happens. This is all formally kosher, so far as I know, so long as we stretch mentality in the pansychist direction.

Shag: The most basic understanding of the uncertainty principle is that it is not mental. This is because, in order to measure the state of a particle, you must apply forces and fields to it, or detect the effects of its exchanging momenta with other particles.

A: I know this.

Soja: Since being a pagan philosopher, while a non-Christian, does not automatically imply an atheist, how many philosophers were actually atheists?

A: Many philosophers were not easy to put on one side or the other. Very many railed against the idiocies of popular belief, but very many also had inner convictions that tended toward some kind of mysticism. Philosophy is love of wisdom. Part of wisdom is knowing what you don't know.

Clint Eastwood: A good man knows his limits.

Shag: You're looking for acolytes.

A: My purpose is not to make technical contributions to quantum theory. But since anyone who wants to say anything with deep implications needs to face up to the conundrums that quantum theorists confront, this tends to become a battleground.

The works of Sam Harris made me see that the times we live in have served us up with a big challenge, namely to fight and win against Islamist extremism. Part of the challenge is to defeat poisonous politics disguised as religiosity, and the way to do this is to wash out the poison with the sweet waters of philosophical reason.

An essential part of this warfighting strategy is not to throw out the baby with the bathwater. The baby here is the mystic insight hidden in rabid religiosity that all is not right with the everyday reality and everyday psychology that we have been conditioned to accept as obvious and unchangeable. One of the symptoms that all is not right is the conceptual confusion in the foundations of quantum theory, but we should not let that distract us from the wider issue.

Panpsychism is a lever to open up a loophole and catch a glimpse of the wider insight. Think of it as the core truth of the perennial philosophy, which needs to be refactored and reformulated in every new generation. Sam Harris glimpses something of this truth in his experiments with meditation, but I guess he still has a way to go.

If we abandon this truth, we throw out the pin that holds our world, our collective mindworld, together. If that falls apart, there is no alternative but to start again with the sort of straitjacket that traditional religionists advocate. That would be dire indeed – imagine mass public executions of infidels and blasphemers just as starters.

A world like ours, complete with political freedom and social liberties, can continue to flourish only if it finds a place for ongoing cultivation of the core insights of philosophy.

Soja: How many well known philosophers were actually atheists? How many were believers in gods, whether pagan or Christian or other? How many expressed ideas that gave a hint of mysticism?

A: Here off the top of my head is a short list:

John Locke: nominal Anglican, advocate of religious tolerance, thought Christianity compatible with reason

George Berkeley: doctorate in divinity, Bishop in Church of Ireland

David Hume: definitely an atheist, but no revolutionary and diplomatic about religion in his published works

John Stuart Mill: an overt atheist, refused Oxford and Cambridge to avoid becoming an Anglican

Bertrand Russell: militant atheist and free thinker, wrote book *Why I Am Not a Christian*

Alfred Ayer: militant atheist and rationalist free thinker

Daniel Dennett: hardline atheist and one of the Four Horsemen with Harris, Dawkins, and Hitchens

Charles Taylor: tolerant, liberal theist, Roman Catholic, Templeton prizewinner

Immanuel Kant: rationalist, probably atheist, diplomatic in his writings, his “transcendental ego” was godlike

Arthur Schopenhauer: robust atheist, misanthropic, believed in universal will

Georg W.F. Hegel: rationalist, probably atheist, inscrutable to mystic in his writings, evolutionist in tendency

Karl Marx: militant, revolutionary atheist who said “religion is the opiate of the people”

Friedrich Nietzsche: militant atheist who declared “God is dead” and celebrated the Superman

Martin Heidegger: initially atheist but inscrutable to mystic in his writings, first a Nazi then a Roman Catholic

Ludwig Wittgenstein: atheist with strongly mystic tendencies

Jean-Paul Sartre: militant atheist, existentialist, Marxist, trendy revolutionary

As you see, a pretty strong majority for atheism. The earlier philosophers were diplomatic enough not endanger their career prospects.

Aldous Huxley: The Perennial Philosophy is expressed most succinctly in ... That thou art ... and the last end of every human being, is to discover the fact for himself, to find out who he really is.

Jacques Monod: All religions, nearly all philosophies, and even a part of science testify to the unwearying, heroic effort of mankind desperately denying its contingency.

A: Jacques is entitled to his opinion, and contingency is a damning category to end up falling under, but in all philosophical candor, the necessity-contingency axis is part of a categorial frame like any other and therefore leaves the odd status of the “That thou art” truth (the sheer fact that anything exists, as philosophers usually phrase it now) untouched. Some things we just can’t say – and we can’t whistle them either, as Wittgenstein (that deep throat of wisdom) said.

Shag: Perhaps you’ve heard of John Gray. He is confused about some things, but one thing he gets right is that humanism is just another religion. [Extracts from Gray’s book *Straw Dogs* deleted here – AR]

A: I went to college with him and I still think I’m a better philosopher than he is, essentially because (a) I’m stronger on math and science than he ever was and (b) I’ve suffered more than he has, which is good for the depths of the personality (what doesn’t kill me and so on). The *Straw Dogs* extracts are wrong in tendency, I think, but not trivially so and quite well argued.

Soja: I was hoping to get your personal take on the most important philosophers. Google obliged me with a long list of philosophers listed under different religions; at first glance the list under atheist philosophers seems to be very small in comparison.

A: In the Google age, anyone can drown themselves in asymptotically meaningless information in seconds. As I see it, the value I added was precisely in providing a personal short list, with my words appended, not undigested strings of factoids.

But the main reason why my list was short and its comments brief is simply that I attach no great importance to the atheist-believer taxonomy and its

subdivision into smaller tribal categories. That has nothing to do with philosophy and more to do with stamp collecting and other harmless pursuits.

Philosophers who achieve something worth remembering usually find new ways to analyze interesting issues so that their work builds on that of their predecessors. The result, over the centuries, is an organized and growing repository of analytical tools that we can use to build a better world for ourselves.

Soja: Now I understand why it is impossible to read all the philosophers in one lifetime.

A: Quite so. A hopeless enterprise, and most unlikely to increase your wisdom. The standard way to go is to talk regularly with a good teacher who can introduce you to appropriate authors one by one, as and when you can benefit from their work. Talking or writing about what you read is essential, to make your knowledge active, and relating the skills acquired to current and practical issues is essential too.

The analogy with religion may help. Reading the bible is not enough to make you a good person. Behaving well and charitably toward others is worth more. Similarly, reading philosophy books is not enough to make you wise. Reflecting, debating, and putting your thoughts in order are more effective.

Dude: I can see why you like Barrow and Tipler. They too are trying to (re)define god with science.

A: Hoist by my own petard! I don't like the Barrow–Tipler book much, I just found their omega idea intriguing.

Dude: I thought creationist trying to use the laws of physics to show where the water from the flood came from and went to was funny, but Tipler has them beat with the physics of Jesus' resurrection.

A: Ageing scientists who find religion and try to put god into their equations are sad. But this is the human predicament. Their god is the grain of sand in their scientific pearl, the irritating little paradox that keeps their mental motor turning over.

Dude: God is magic, he can do anything without even doing anything, he is not and cannot be bound by any law. If you want to believe in god, just say god did it, it's magic. As soon as you try and bound god with physics you destroy him and he becomes anthropomorphized science.

A: Good. The "That thou art" of perennial philosophy (my current inner mantra, until I have sucked it dry) is a better magic incantation. But a personalized god who can zoom in like Superman to combat the oppressive power of scientific factuality – what genius! I have a mental image of Marlon Brando in *Apocalypse Now*, reflecting on the genius of the hill tribesmen who hacked off the arms of their inoculated babies to combat the power of scientific medicine.

Shag: Your ticket is punched entirely with interpretation. Talk is cheap, and you're talking out of your hat, or rather, only the hats of interpreters with better reputations and credentials than you have.

A: Interpretation is a big issue in many fields. For example, in formal logic, where I did some of my best work, subtle aspects of the interpretation of the propositional operators (and, or, not, if-then) lead you either to classical logic or to intuitionistic or constructive logic, the latter with a quite different formal semantics using trees of nodes representing worlds (the formal prototypes for my mindworlds) between which various accessibility relations prevail (the key semantical work here was done by Saul Kripke).

A constructive interpretation of axiomatic set theory, in turn, leads to Gödel's constructible universe, with which he proved the consistency of the continuum hypothesis and the axiom of choice. A more uncritically Platonic interpretation leads via reflection principles to vast universes and lots of new results, which may or may not make sense to some, depending on how they feel about the interpretation.

In quantum theory, to return to that, the interpretational issues debates by Bohr and Einstein were quite substantial and again led to some good work. Without the spur of those debates, Einstein might not have thought of the EPR experiments that turn out to be crucial for Bell's theorem and the recent work of Joy Christian on Clifford algebras for hidden variables behind EPR pairs.

And so on. Interpretations are often crucial and talk is emphatically not cheap. As for hats, if I say things without references, people are unlikely to take me seriously because they will reasonably suspect I have not sweated the detail. Giving references is also a way of demonstrating that one is not trying to be original. I do not wish to claim credit for work normally credited to others, and dropping names is a way to evade any such credit. Also, when talking with those who know the references, it is an efficient way to communicate. And for Googled readers it provides access points to encourage further study.

Shag: You're bullshitting with what is kosher "as far as you know". You don't know all that far.

A: No, I'm making a standard and essential disclaimer. I don't know all that far, but I know more than some people, evidently, and in my opinion the position I sketched is apparently defensible. Anyone who can argue in detail for a different position is welcome to do so. If it works, no-one will be more delighted than I.

Shag: I mean – Schrödinger's cat?

A: Stephen Hawking once said something to the effect that whoever he hears someone mention Schrödinger's cat he wants to reach for a gun. Having read a lot of nonsense on the theme, I understand the feeling. Schrödinger only

invented the idea to caricature the absurdity of what some people carelessly said about the wavefunction and all that. Nevertheless, an awkward issue remains, namely that nothing in the formalism explains how collapses occur to avoid Everett-type branching to infinity, and some kind of observer-related collapse is the usual first hand-waving answer.

Since then, a lot of good work has been done to dispel the real problem. The main worker here was Dieter Zeh, in Heidelberg, with whom I had the privilege of working, via colleagues, while at Springer. Zeh is the main author of the decoherence story for how extended superpositions like Schrödinger's cat never occur in practice. I shall not go into the fine detail here, since it is rather technical, but David Lindley wrote a fine popular book (1996) explaining the story.

My intention in mentioning the cat and other such oddities is simple. There is a long and heated debate, which in its essentials (once specific issues like macroscopic decoherence are put aside) continues, about how the observer relates to the states and state spaces of quantum theory. The debate is easy enough to ignore, since the formalism works well enough to support good lab work, and many scientists leave it at that, delegating the debate to the theorists and philosophers. This is of course a defensible attitude, but it is an evasion of an interesting problem zone where we can hope to make huge progress if we set about it correctly.

I see my role in this adventure as to look for new angles here in the hope that they will help us find a way forward with the issue of how the observer fits into a physically defined reality. It is worth recalling that Einstein made the breakthrough embodied in special relativity by some fresh but quite simple thinking about the role of the observer in making measurements in moving frames of reference. We need some such thinking now to get over the conceptual logjam in quantum theory. None of this need affect crystallographers and other practitioners, but it will have a huge impact on wider fields, for example a future psychology, in my thoughtful opinion.

Soja: When you take ideas out of religion that marks the pinnacle of religious achievement and then claim you are an atheist while using those very religious ideas to build your theories with a different vocabulary to mask the origin of your ideas, I have a serious problem from a scientific perspective.

A: This is preposterous. A translation of the ancient Hindu idea that Aldous Huxley brought forth for our contemplation in his pellucid conspectus is "that thou art" or rather, correcting for the passage of the centuries, "that you are" or rather, correcting for the universality of reference in the personal pronoun in the cited gem, "that one is" or even, adapting to explicate the resonance with the Hebraic formula that has caused us all so much joy and distress over the centuries, "that I am."

Now, that I am is not only the modern transposition of the denotational content of the Mosaic auditory hallucination “I am that I am” and the neutral truth (which is nonetheless tumescent with the infinite promise of heavenly bliss) behind the New Testamental proclamation “I am the way, the truth and the life” but also the conclusion of the Cartesian deduction “I think, therefore I am” as well as the premise of all post-Cartesian philosophy of mind in the Western tradition.

Since when has a signatory flourish that terminates with the string “Aldous Huxley” served as any kind of basis for a charge of plagiarism? Since when does discussion of a well known trope (such as the idea that one is) require repeated reference to origins veiled by the mists of time and probably extending back much further than the vaunted *Upanishads*? Since when does a scientist who types $F = ma$ have to add a footnote doffing his hat to Sir Isaac Newton for the divinely inspired genius of his *Philosophiæ Naturalis Principia Mathematica*?

Popping the Bubble

Shag: Acting only like a simple popup figure is bound sooner or later to get you misdiagnosed with severe developmental disabilities.

A: Point taken. Mixing fun and science is dangerous. Let me try one more time:

Panpsychism is the idea that a psi field permeates physical reality and determines how things seem to us. This field takes peak values in zones associated with human consciousness and finds its unity in the transparency of all reality to our mental searchlight. The psi field unfolds mathematically in a rather complicated way that finds its simplest expression to date in the Schrödinger equation. Solving that equation for big molecules, let alone for the huge assemblies of molecules making up human brains, is not yet computationally feasible.

Worlds of human consciousness are most simply characterized logically as the natural models of sets of sentences. A suitably formalized set of sentences is true together in a world, or rather a mindworld. Truth is the primitive notion here. A true indicative sentence, or a statement, expresses a fact. But facts clump together, and a self-contained set of facts is a world. What makes a set of facts self-contained is that the set of statements expressing them is closed under logical implication (this is the proof-theoretic criterion) and modeled in a ranked V-set in the cumulative hierarchy of sets (this is the model-theoretic criterion).

Because time marches on and things change, we inhabit a succession of such worlds. These are physical worlds, each corresponding to a distribution of momenergy (John Wheeler’s word) in spacetime. Special is the permeation with psi. In each world, the world wave function, the “wow” function, in effect specifies the facts that make up that world. It does so by assigning

probabilities to the various statements that have meaning in that world. The probabilities arise in turn from probability amplitudes and entanglements in a way that is familiar in principle to physicists.

New in this approach – what puts the “mind” in mindworlds – is the treatment of world closure. In classical physics, we all inhabit one big world, which stretches off into the unknown future. My radical constructivism says let each moment of time define its own world, closed and complete, but destined to bud into a new world at the next moment. The wow function defines a symmetric distribution of futures that breaks with a “pop” – a probabilistic ontology parturition (sorry – this just means birth of new things).

As time unfolds and we experience new things, the wow function keeps on popping. Our interaction with things makes it pop. A world comes to a focus in our consciousness, which is a holistic mindfield or an extended entanglement characterized by high peaks of wow. The bubble of peaked wow jiggles and pops, and there we are in a new world. In my speculative physics for all this, the peaked wow is carried by deep-radio photons generated by the rhythmic humming of neurons in the neocortex, but that needs testing.

I’m sceptical, but this makes as much sense as any other theory I’ve seen, so I shall take a Hail Mary with it. Apologies to quantum wacko Fred Alan Wolf, who a few years ago (1981) talked of popping qwiffs and made me see how much fun all this could be.

Shag: Special relativity, when laid out completely, has no “conceptual logjams”. Laying off a conceptual logjam on something outside your own skull is like laying off the creation of the universe on God and constructing an elaborate human-centered theology upon it.

A: The conceptual logjam was between Newtonian mechanics and Maxwellian electrodynamics, which Einstein cleared up. The conceptual logjam in quantum mechanics is evident from countless learned books on the subject.

Shag: The idea that one creates an entire new universe by finding out something one did not already know needs to be more closely examined.

A: Okay, the word “state” will do here. A consistent state of the universe is a snapshot, in the database sense, which becomes invalidated by the next transaction. We can see the universe at different levels of granularity. In a coarse-grained sense we all inhabit the same universe. In a sufficiently fine-grained sense, we each have personal universes or states that change from moment to moment.

Shag: You know the old aphorism about reality being that which does not go away when you close your eyes?

A: Yes, but I also know from brain work how much of our reality is virtual, in the brain, modeled, schematic, in part illusory. We identify our inner

virtual worlds with an imagined ideal called the real world. This is called naïve realism, and physicists are in my long experience of arguing with physicists about this the most incorrigible sinners when it comes to confusing their own inner worlds with the great externality.

Shag: You say “a psi field permeates physical reality and determines how things seem to us,” but that sentence is not a fact.

A: No, but nor is “a gravity field permeates physical reality and determines how spacetime curves” or any other theory-laden sentence of this sort. If we all stuck to ground-level facts we’d not have a lot to say.

Shag: You say “a self-contained set of facts is a world.” but that sentence does not constitute a fact. You’re using the word “world” in a restricted sense.

A: Yes, I’m redefining the word “world” in what I hope is a fruitful way.

Shag: I don’t consider it an argument to propose that something should in principle be familiar. I believe that’s a rhetorical gambit in philosophy. The entire subject of panpsychism is based on sentences which might be true in principle, and none of which are facts in any sense that a physicist might even, in principle, agree to.

A: Well, there are physicists and physicists. Most string theorists concede that in-principle truth may be all they can get, unless and until we rebuild the solar system as an accelerator to probe the Planck scale.

G.W.F. Hegel:

The chalice of this realm of spirits
Foams forth to God His own Infinitude

From *Phänomenologie des Geistes*
(last words, quoting Schiller, in the 1910 translation by J.B. Baillie)

Dude: If we all have fine-grained personal universes, and they “somehow” project and affect the coarse-grained universal universe, then the next state of the coarse-grained universal universe will reflect all the fine-grained personal universes’ inputs, which will then be reflected in all the fine-grained personal universes, which will then be reflected in the next state of the coarse-grained universal universe, and so on, and so on, and so on.

A: Exactly, there you have it in a nutshell. This, in essence, updated two centuries, is Hegel’s theory of contradictions driving history. There is no single consistent state of the whole universe. All we have is a lot of time-stamped local states that patch together, more or less, to create macro-agreement. The microworlds are strictly incommensurable. This is a problem only if you’re a fetishist about consistency.

Naturally, it’s nice to live in a consistent reality, and most of us do what we can every day to help achieve that. But some people, not only Marxists and

Islamists, push contradictions for all they're worth to try to push us out of our consensus reality. Contradictions drive science, too, as when a recalcitrant fact leads to the overthrow of a previously safe theory.

Think of reality as a sheet of ice. The crystal order, such as it is, represents consensus reality, consistency. Below is a seething ocean of chaotic stuff that remains mostly inconsistent, since no-one ever bothered to order it. And above is virgin virtuality, just waiting for us to muscle in and impose order, regiment it, crack down on those pesky inconsistencies. The consistent reality of the physicists is a thin sheet of ice.

The savior here is the possibility to timestamp everything. If the time granularity is fine enough, consistency can be found even in the most turbulent phenomena. Unfortunately, we cannot establish universal synchronicity because the speed of light is finite. Still, by agreeing on a timeline we can make progress.

A subversive thought here is that maybe the biggest practical benefit brought to the world by religion was an agreed timeline. The Christian calendar is a huge step forward in the search for a global civilization, even though some people still use other calendars. Actually, astronomy already imposes most of the calendar, and all that remains is to set a zero and fine-tune leap years and so on. Nevertheless, this was a big social achievement and worth acknowledging.

Consistency is not a given. As you say, local updates and global updates reflect each other with a latency that is generally uncontrolled, so there is a fuzziness about the result. If you pick and poke at it too much, you'll make a hole in reality and we'll end up in a sci-fi horror scenario.

Dude: How is this any different from determinism?

A: Remember those states of consciousness popping like bubbles in a boiling stew. Popping is probabilistic (it's not plain old ontology parturition, yikes, which would be poopy), or at least it is in my first pass at all this, which means there's no determinism for quantum reasons. And if it weren't probabilistic, the determinism of a Wolfram automaton would be unpredictable (for reasons Wolfram airs at great length in his big book), so for all practical purposes reality would be as we experience it, which is not apparently deterministic at all.

As I told you, the case is open on determinism, and probably always will be, for reasons to do with the limited authority of scientists and the inexhaustible recalcitrance of reality, which seems to find ways to escape all the conceptual straitjackets we try to squeeze it into.

Dude: Why does the coarse-grained universal universe keep moving forward in ways detrimental to the fine-grained personal universes?

A: Actually, you have coarse and fine mixed here. The personal universes, the microworlds, are small and simple relative to the public universe, the

macroworld. The universe of physics is fine-grained. Human lifeworlds are mostly rather coarse approximations that skate over things like the statistics of particle states and go for big fuzzy properties like temperature. But you're right in this sense: For public life at the level of politics, we make a yet more coarse-grained world that bears even less relation to the underlying physics. And to cap the confusion, the world of physics is so patchy it leaves blanks all over the map, so using it is a bit like trying to navigate with Google world.

Keeping all these patches in synch is hopeless. It's worse than trying to keep up with Windows security patches. The best we can do is ride robustly forth and crush those contradictions as we find them. If your computer moves forward in ways detrimental to your wishes, you can either go down to the bits and put it right or ride robustly forth. Unless you're a quantum scientist with a lot of time on your hands, you quickly learn the gentle art of crushing all opposition. It's called raising entropy.

Dude: Kant said: "Truth is ... I can only judge whether my knowledge of the object agrees with my knowledge of the object." Replace "object" with *universe* and "knowledge" with *consciousness* and you have a circular argument that leads to a contradiction.

A; This circularity was noticed by Hegel, who spun it out to absurd length in his books to put just about everything into a system of concentric circles centered on the point where Hegel sat writing his stuff. The escape, as Marx said, is to recall that philosophers have only interpreted the world, the point however is to change it. Action speaks louder than. You don't just sit on a contradiction, you go out and change things.

Well, this is fine rhetoric, perhaps, but there is ultimately a circle here. Here we sit, in a reality that we reflect in a mindworld, and any attempt to push through to reality itself just adds new stuff to our latest mindworld. So be it. That doesn't stop real life being hard and frustrating. Life is full of contradictions, and we should be glad our story has them too.

Matzo: I recommend the book *Trialectics: Toward A Practical Logic of Unity*, edited by Robert E. Horn.

A: Thanks, I shall look out for it. My take on dialectics in set theory:

- 1) Map thesis to the sets of rank less than alpha.
- 2) Map antithesis to them plus the proper classes of rank alpha.
- 3) Map synthesis to sets of rank less than or equal to alpha.

Thus by transfinite recursion you go up through the cumulative hierarchy. The mapping are rather arbitrary, but the words in Hegel's instances of his schema are pretty arbitrary anyway.

Another way is ascent through the nodes of an intuitionistic tree, which one can model in a Kripke semantics. But I'm not convinced this is radical enough. It forces monotonicity, whereas my mappings can be new each time.

Soja: You'll have to convince ordinary theistic mortals like me that your condition is not a "a life sentence on monumental narcissism," and you are not making a case for monumental narcissism calling it panpsychism and using convoluted vocabulary to describe it.

A: There is nothing narcissistic in seeking to establish the logic of the self as godlike. Or in using fun language to make the exercise more readable for those with the words to profit from the exercise. Anyone who thinks my effort narcissistic has misunderstood so fundamentally as to be beyond hope.

Soja: I would be happy for you to come up with something completely new that no one else has thought about. Something that benefits all sections of humanity (as religions do) would be truly excellent. But so far I've seen no evidence of anything new or beneficial in the stuff you have written thus far.

A: Since billions have gone before me, it is difficult to find anything completely new, and if something looked too new I would be suspicious, as if an error had crept in somewhere. As for beneficial, the truth, once isolated, is always beneficial. The challenge is to separate it cleanly from the dross of ages.

Soja: Intellectual atheists have found it difficult to understand your train of thought. How could a theist do any better? My theism helps me to detect your theistic thoughts even in disguised form.

A: One reason for your difficulty is precisely that you think there is an easily definable divide between theists and atheists. Both words are used with such a range of meanings that thoughtful and rational members of either camp often have similar beliefs. That the God of Abraham does not exist as once imagined is a discovery we can all celebrate.

Dolly: The "seeking to establish" shows a level of narcissism that rivals that of a true believer.

A: This begs the definition of "narcissism" and exposes an ambiguity in the logical similarity of self and a concept of God. Elevating the self to God is equivalent modulo a linear translation to bringing God down to Earth. This seems at first sight to be atheistic in tendency. But in realizing the truth of theism in this humble form, I no longer feel the need to criticize religion as such, just its irrational manifestations.

Unk: Logics of the self have been thoroughly pared and pruned over the millennia, and the resulting cultural ways tend to narrowly define and in fact dictate what exactly the self consists of, both potentially and currently. How can we get beyond the finite sets of choices we are born with?

A: Tough, yes, but possible, because language is a human construct. Consider an idealized self, freed of one's own contingent limitations, and consider how such an idealization is sometimes used instrumentally, to say such things as that God is a perfect person, who watches over us and loves us like a father and so on. In the more subtle theologies, the self-alienation of

the self into an externalized superego or father figure, who can be scolding or punishing, is seen for what it is, as an essentially childish projection of attributes more properly belonging within the self.

The contingent self we each carry around with us, based on what we are born with and shaped and cultivated in various ways over the years in directions that may be very obviously suboptimal, is not a good model for a god, except in an abstract logical sense, as carrying the potential, as one says, to become more godlike. One accepts on the basis of various cultural models that this potential would require a practically infinite process to realize, but the logic remains. On my analysis, this logic, this potential, is essential, to make a god into an effective motivator.

Unk: A word such as “narcissistic” typically represents assumptions and assertions that alternate between states that are typically human. The meaning or use of words such as “narcissistic” or “selfish” adjust themselves so as to silently corroborate current social ways and are useful as a tool to nudge people, but in themselves are filled with contradictory meaning.

A: Such words, used as cudgels to “nudge” people, are not much use for a logical analysis, of course, but I think the word “self” is not so far gone. Evolutionary biologists say a lot about it, philosophers of mind say a lot too, psychologists too, and casting aside the more primitive (perhaps original) aspects of its meaning leaves a viable concept. Whereas the concept, such as it is, of narcissism seems to me to be too emotive to be of much use in a scientific context.

Unk: The difficulty of the job of the seeker “to establish the logic of the self as godlike” is overwhelming. And even our words only serve to deceive us further, pushing our emotional buttons rather than informing us.

A: Well, one can refuse to let one’s emotional buttons be pressed so easily, and persevere with the analysis. Essentially, that’s what I’m trying to do here, to get to the core mechanisms behind all this emotional stuff. But it’s hard work, as you say.

Unk: Deities may not exist, but use of a word such as “god” still carries certain meanings, and I question the validity of comparing human creative force with the notion of a godly creative force, even if the gods are only fictional.

A: I think we’re making progress here. The ancient Greek gods were very human in their appetites and their decidedly mixed potential for good and bad. The Abrahamic God memplex that then infected brains across much of the world is an evolutionarily more advanced creation and correspondingly more difficult to understand reductively.

If we look back at primitive gods (as Pascal Boyer did in his book *Religion Explained*, which Dan Dennett used as inspiration for his book *Breaking the Spell*) for clues as to the more general concept of gods in human societies and

as to how it may have evolved over prehistoric and historic times, we see some very human projections.

Facts and values are separate, and you cannot derive an *ought* from an *is*. The fact, as it seems to me, that gods are projections in some sense of the self, or perhaps rather the psyche more generally, does not allow one to infer that we are godlike in any value-laden sense. It offers mere understanding (from which values may emerge).

Panpsychism: everything has soul, everything can participate in consciousness.

Stud: I would say that Hinduism is the most likely to melt away first, then perhaps Judaism (as an actual faith, not as a political/cultural system – more Jews are secular than in the other faiths). Looks like it's between Christianity and Islam, and Islam is growing the fastest.

A: Christianity is based on a transmogrified self-meme: love the one and only universal self with all your heart and mind. Islam is based on a merciful and compassionate dictator. I think Christianity will win in the end.

Stud: We (or our grandkids) might be around to see the ultimate test of religion – is God really made in our image? Or we in His?

A: We in His. But He is a species projection. Human selfhood is a trans-substantiation of the species attractor that people used to confuse with the Abrahamic God. We and God are in Love – a holy trinity.

Stud: So we project our own essence “out there,” and then that essence attracts us to itself, so that we become more like our collective selves? Sounds like a little bit of bootstrapping woo-woo. Maybe the attractor has an independent existence.

A: Sure. Consider the James Bond tradition. We project a fictional being out there and people model themselves in its image. Except that god fictions are taken more seriously because they are mostly based on delusions. As fictions, all such things have a sufficient level of reality to sustain counterfactual attributions of definite properties.

Stud: You have eaten the fruit in the hope of becoming like God, but all you will end up with are fig leaves.

A: I have eaten the fruit in the hope of understanding the whole amazing saga, and I have understood, in my own way. As for the holiness of it all, I stand in awe of our power as a species to drive ourselves to these extremes, which hugely exceed the achievements of our neighbor species. My harvest is bountiful and I thank God for it.

Stud: God loves us – look at all the trouble he went through to bring us into existence.

A: The God of our fathers did not do the Big Bang stuff – that was Bopp, the being of physical phenomena, an older and wiser deity who lacks personality and gender. The mystery – *honi soit qui mal y pense* – is so far clarified at least, thanks to centuries of science.

Head: What connection if any do you make between BOPP and human mental experience of the type you are experiencing right now?

A: At its most basic, “mental” experience is experience of being. This is precategory and presensory. Since we are physical beings (says Madonna), that’s an example of BOPP. Via science, we “know” that BOPP extends beyond our experience and more or less obeys the laws of QED and GRT, or at least of any GUT or TOE that spans them. Directly or indirectly, BOPP underlies everything, including GOOF and SOIA.

Head: Do you reject the whole category of mental (versus physical) experience in your scheme?

A: Experience is primordial, which is to say premental and prephysical. Naturally, once we have a theory of appearance and reality (and this emerges early in the history of philosophy), we can distinguish mental experience (appearance) from physical experience (which is veridical, in accordance with naïve realism). The realm of mentality is rather old-fashioned, and is ripe for trashing once we all agree to my “subject and object are equal and opposite” idea.

Head: What about mental experience (mind) that depends on the gooey stuff already existing in good working order (as in post-physical)?

A: Yes, this is the reason for my proposal to trash the mental as a distinct ontological category. Experience of appearances is no less physical than naïvely veridical experience, and differs only in how it depends on contingencies pertaining to brain goo. A distinct category of mental experience is only sustainable if we presuppose what we now know to be a highly constrained stack of brain functions.

Shag: “Primordial” is an awfully pretentious term to apply to experience. But for those who dig experience, it is a way of making the scope of that part of your existence more grandiose, if not exactly, uh, primordial. No brain, no pain. At least, not in cocktail party conversation (CPC).

A: For me, primordiality is a philosophically plain term. Here it means that experience comes first, before any knowledge of facts about our world. I was always amused by the sort of science-fiction story that has the first-person subject wake up in a radically alien environment and have to start from very first principles. Like, do I have a brain? Are my categories intact? And so on.

Of course, such CPC as we are here and now indulging does presuppose a certain level of brain function and DNA chemistry, but the story could have turned out differently. I could wake up as a gluonic sprite flitting carefree through the quark soup at the heart of a neutron star, for example. But

experience of being would always be there from the start, by definition, in order for there to be a start.

Stud: What is having the premental and prephysical experience? What is the record of this experience? How has science verified this? Is there really any such thing as non-conscious experience? What the hell are you talking about?

A: You have hit the subject on the head. Your first question is ontological, your second is epistemological, your third is historical, your fourth is semantical, and your fifth is rhetorical.

Ontologically, the haver of experience is the “I” of the great “I am” which then typically devolves into a humble and limited being, that wanders and soon becomes lost in a desecrated externality and has a hard time retrieving its divinity.

Epistemologically, the experience of the devolved subject is driven from moment to moment, losing that primordial symmetry and accumulating the entropy of a limited incarnation until the challenge of reconstructing the record of which you speak becomes daunting, hence the hardness of science. Eternity is paradise and time is the fall.

Historically, science is a new thing, which can no more verify or falsify the primordial *Geworfenheit* (excuse my vulgar Heideggerianism) than it can verify that the sun will rise tomorrow (consider Humean scepticism and the logically possible experience of the subject in the aforementioned science-fiction story). If Buddhist experience is scientific, it may suggest an answer to your question.

Semantically, non-conscious experience may be oxymoronic. Admittedly, consciousness as we now understand it requires brain function and so on. Yet “I” is prior to all that (excuse my grammar). Unsurprisingly, this bursts the bounds of our CPC semantics.

Rhetorically, I’m talking about the primal “I” at the vortex of this mortal coil.

Stud: As a theist, I can readily fit your explanation into my faith categories (with a few minor adjustments), plug it into my Christian equations (with a few minor alterations), and come up with an answer spelled G-O-D. But I am certain that this would be significantly less than acceptable to you and the vast majority of contributors to this thread.

A: You are choosing sides where divisiveness is uncalled for. And you are importing cultural baggage that has no place in a discussion of first principles. Naturally, the religious traditions have fastened on this primordial phenomenon and given it their own labels. In the process, most of them have also made a series of wrong moves that have led us to the world of problems we now confront. I am trying to address the situation with a forensic analysis and find it unhelpful that every mention of a concept with a history is greeted with cries of “God!” or “Copycat!” or worse.

Stud: If there is a primal “I”, *i* (lower case = me) don’t see how you separate this concept fundamentally from that which theists have been saying for millennia. If it (“I”) is non-conscious (with or without a physical brain), it is not properly called an “I” and does not have experience. It may be a thing or an event, but it is not an “I”. Any “I” must be able to comprehend that it is an “I”, and thus must have some level of consciousness or self-awareness. It would be more than oxymoronic if *i* could conceive of “I”, but “I” could not even be conscious of itself, whatever it is.

A: The prereflective separation of “I” (big) from *i* (small) is precisely the issue to be addressed here. Consciousness is increasingly seen as a class of brain states, so much so that the introspective transparency of first-person consciousness need not be taken as criterial. Threshold or fringe phenomena make any introspective criterion problematic, and if neural correlates of consciousness (NCC) map consistently enough to introspective states we may eventually shift to NCC and just gloss over any anomalies. Yet the “I/*i*” issue will remain, so let us separate it from consciousness and first address the logical issue.

Stud: Either you have a fundamentally non-mental universe, with our consciousness simply being an interesting anomaly, or you have a fundamentally mental universe (or personal/spiritual/fill-in-the-blank-al), which concept plays right into the hands of believers like me.

A: Again, you seek to drive a dichotomy where none is called for. The history of philosophy is full of debates between realists and idealists and full of examples of how a rift can be prevented. My position, again, is that the logic of self and world is prior to the empirical division of things between mental and physical. What is, is, and its description comes later. The experience that comes before all understanding can be recollected as revelation, but the recollection changes it. We do better simply to axiomatize the primacy of experience and bury the baggage.

Shag: Consider the logical possibility that concerns with verifiability and logical possibility represent a business model freighted with *Vergangenheit*.

A: With verifiability, yes, but I was not the first to use that word here. Logical possibility is as modern as tomorrow, but freighted with the blinkers (those things they used to put on horses to stop them seeing sideways) of its practitioners. When the practitioners are mere lab rats whose imaginodules were cut off in grad school, woe betide us.

Shag: Science isn’t better just because it’s new. It’s better because it’s capable of doing something besides simply quoting itself.

A: When everything is part of the philosophical self, it is hard for philosophy not to be concerned with itself. Remember that science is just applied philosophy. Newton’s Cambridge chair was and still is in natural philosophy. In Oxford the researchers in psychology and neuroscience are appointed to do mental philosophy.

Shag: Forensics involves collecting data. You are engaged not in forensics but in what is called reviewing the literature.

A: For a philosopher, reviewing the literature is collecting data. Philosophers think for a living. They do *Gedanken* experiments. This is good for funding agencies, as it requires only access to a modest library and a comfortable armchair, plus vigorous brain function and a good breakfast. The time saved not having to teach assistants to wash test tubes is more profitably invested disputing the babblings of ambitious undergraduates.

Shag: The experience that comes before all understanding is of temperature, pressure, and chemical potential gradients. So simple, a bacterial culture can do it. You can overcome privation with philosophy, but only to a point.

A: Well, no, this is reductionist thinking as its most crass. You might as well say all our life and civilization is just a smear of shit on the surface of a six-zettaton rockball. This is true so far as it goes, maybe, but something essential is missing, namely everything that makes life worth living. If you counter that life is indeed not worth living, then you might at least have the courage of your convictions and do away with your worthless *Dasein*.

Shag: You use the word “reductionist” as an epithet in relation to anything that does not allow you enough latitude for “logical possibility”. You have a fondness for nonsense that is exceeded only by certain specific religions. If you want to make beautiful statements about life, consider being a painter, a novelist, or a composer. Don’t consider philosophy.

A: Reductionism in science has served us well, when tempered with due respect for emergence and supervenience, but as some, for example Henry Markram, head of the Blue Brain project, say, its reign is coming to an end. The next big thing is simulation, the third way between theory and experiment. Simulate a universe? With a googol or so bits you could do a nice one.

Stud: In your view, does experience precede being? Was there any experience at all in this universe before abiogenesis? *i* can experience something and later become conscious of the experience, but there must be an *i* or at least an organism before this is possible. All levels of life experience things without the phenomenon of consciousness, but there must at least be life before there is experience. Otherwise, you can speak of events, but not experience. Events happen to rocks and atoms, but experience happens only to living organisms. Do you disagree?

A: No, but to quote a neuroscientist I like, namely Rodolfo Llinas, “timeness is consciousness” – which I willfully interpret cosmologically (and here I do not contradict the spirits of the Time Lords Einstein and Gödel) to mean that with time enters the dimension of interiority (Kant) or of the self-sublation of spirit (Hegel) to regurgitate the deepest levels of existence into being, to now, to the *Gegenwärtigkeit* of the immanent Absolute (these are not words Einstein would have used, but Gödel did like Kant). From the first yoctozeptosecond (that is, the first Planck instant) we were there in spirit.

More scientifically, since a speeding photon lives not even a moment between emission and absorption (the technical way of saying this is that its world line is a null geodesic), at least modulo the Heisenberg uncertainty, any surviving relic photon with an energy of a few micrograms (admittedly such relics would have got thermalized out well before the decoupling era at big bang plus ten petaseconds, but hey, this is science fiction) would put us right back there in the Planck era, in a turbulent foam of wormholes a go-go.

Stud: What's your confirmation? Vigorous brain function and a good breakfast also results in prodigious bowel movements. What's it gonna be? Mercury or *merde*?

A: Truth is stranger than science fiction.

Winston Churchill: If you have an important point to make, don't try to be subtle or clever. Use a pile driver. Hit the point once. Then come back and hit it again. Then hit it a third time – a tremendous whack.

Shag: Emergence is a fine metaphor. Understanding is not well understood. If you cannot design interesting new experiments and/or simulations, you can hardly convince anyone else that you understand what you say you do. I'm sure you remember students under your tutelage who felt they understood their physics until it came time to take the exam.

A: I'd say it's more than a metaphor because a perfect simulation is the real thing. Put the right molecules together and life emerges, put the right neural logic together and consciousness emerges. If Blue Brain surprises us, we shall know. But you're surely right about understanding. The test is that you can do something with the knowledge. Even physics exams don't test much. I used to train students to answer the questions but not to think for themselves. That would have taken much longer. This is my beef about physicists being naïve realists. One needs a touch of philosophy to ask the deeper questions and refuse to accept pat answers.

Stud: To say that we were there “in spirit” introduces a foreign concept into your physics, doesn't it? We were there in matter/energy, but the spirit-dance that you are performing (while aesthetically appealing) is essentially art, not science – pretty, but not very functional, it seems. Was it inevitable that human or even higher consciousness would eventually emerge after the Big Bang, given this “timeness is consciousness” connection? Or do you see our consciousness as simply a manifestation of the universe yearning for its mother?

A: Consider the concept of information, which is bound up with thermodynamics and quantum questions. It has a subjective side (information for us, for the observer, relative to a position and so on) that tends to be the despair of traditional physicists who want physics to describe “the view from nowhere” (Thomas Nagel's phrase). Consider probability. You can only define it relative to a set of possibilities and a weight function defined over those possibilities. In Bayesian statistics, these probabilities are always

relative to a given set of facts, also called a knowledge state. In quantum theory, the probabilities are relative to the given (classical) state of the measuring apparatus. In the limit of abstraction from all such complications, you have a time perspective. If you try to abstract from time to eternity (by spatializing time as in relativity theory), time pops up as an epistemological limit: “For all we know up to now, the universe is thus ...”

I say get real about this, accept the fact, and see how it puts us, or rather our mindworlds, back in the picture. Then we get the leverage for a psychology, initially looking woozy but soon seen to be a nice take on consciousness, as the condition for all possible experience (Kant saw this as transcendental psychology, Husserl saw it as the start of phenomenology, Heidegger saw it as existentialism in the raw, and Metzinger, with whom I discussed this at a neuroscience conference, says it’s all wrong whereas his own virtual worlds picture is right – his virtual worlds are my mindworlds, but I go beyond the safe science and bed down in deep physics). A universe is brought to a unity in a universalizing consciousness, otherwise it’s just a mess.

Shag: Let’s raise the bar on what we will prospectively label as “consciousness” (or, perhaps, what we will finally consider to have “surprised” us). Let’s say that consciousness is that which can tell the difference between research data and mere public relations. Let’s say that “surprise” is not the same thing as “a response to hype”. Or how about combining them?

A: Consider “con” – bringing together – and “scious” – in a level reflected in a metalevel, where we are accustomed to seeing the levels as semantically related, as in the Tarskian trope “ S is true iff P ” where S says that P , and the fact that P is at level 0 and the statement S of that fact is at level 1. Here S means that P , and the theory of meaning is semantics. So sets representing an object domain at level n are “semanticated” (my word) in sets at level $(n + 1)$, to cut a long story short (shades of Kripke’s 1975 outline of a theory of truth). Therefore consciousness can be modeled in set theory.

Shag: One of the things we always liked to remind ourselves before we went into any job was expect the unexpected. Always sounds like good advice. Except, of course, if you are expecting the unexpected, then, well, then it really isn’t really unexpected any more, is it? And that leaves you vulnerable to the truly unexpected. Because, you’re not expecting it.

A: This reminds me of Richard’s paradox – What’s the smallest number not definable in ten or fewer words? The question defines that number in ten words! Aargh! The agenbite of inwit! (That was a James Joyce quote – think of the “agen” prefix as a variant of *eigen*, German for proper or own, as in the eigenvalues of quantum mechanics). Strange loops! Hofstadter recursions to infinity!

Shag: Your entire flimsy analogy consists only of language, and thus models consciousness only in language, and we are certainly no wiser for having seen it. Your constant dropping into argot drowning in florid analogies waves

a big red flag at your faithful readership. Had you anything edifying to tell us, you might have done so plainly long before this.

A: The same argument applies for the other modalities of consciousness. Intentionality (an ultimate piece of philosophical jargon, but that's life) is the key notion. The relation between word and thing is a paradigm example of an intentional relation. Visual images are intentionally related to the imaged objects, memories are intentionally related to the things remembered, and so on. I find intentionality easiest to understand via word and thing, but this is a placeholder for the whole enchilada.

Flimsy it may be, but this is the best the philosophers can offer as of this historical epoch. As for argot, all disciplines develop it. Too bad, that's life. We have brains to cope with that sort of thing. As for florid analogies, as I said, they're fun, which is a much more reliable way to ensure I get a reaction I can build on than if I offer dull, gray analogies. As for drowning, we all do it in our own sweet way. My claim to fame here is only to be drowning in stuff that can be edifying to the suitably motivated and primed spectator.

Saying things plainly is a matter of perspective. If I could say what I have to say more plainly, I would, give or take a bit of fun with the old lingo and the odd scrap of esoterica. Modeling consciousness in such a way as to illuminate the astounding polymorphism of the stuff of selves and spirit (to use an old word with unfortunate associations) is hard work, and all good ideas come first in confusing and perhaps confused forms. If it were easy, we'd have hit our psychic limits as a species long ago.

Shag: The hard problem of consciousness studies is that of a purportedly conscious process attempting to describe itself as if it were making a physical observation. This is something that only philosophers can do. That they do not do it very well is not surprising, leaving them to fulminate about the naïveté of naïve realism.

A: The hard problem is that of accounting for the ineffable quality of first-person experience. I know I'm not a zombie, but how do I know you're not? Make my day. Convince me.

Direct realism (the politically correct version of naïve realism) is the problem. Anyone who accepts it is biomass, dead meat. Hence the appeal of god memes and the urgency of the hard problem.

The recursive delight is a paradise. Find it and find eternal peace. See the paradox of self-attribution of physicality and fight back. Burst out of the Matrix. I offer salvation. Take it or die.

Erwin Schrödinger: The world is given to me only once, not one existing and one perceived. Subject and object are only one.

Head: I thought I was pushy. Many centuries of unfortunate experiences with religion have left modern free-thinkers more focused on product and very

wary of salesmen/messiahs no matter the subatomic content of their stone tablets/brochures.

A: No push intended, just an evangelical trope as a rhetorical fol-de-rol. I don't seriously expect adherence to my theory of the self to make much difference to anyone's chance of the jackpot in the reincarnation stakes.

I and I are One.

John Derbyshire: Panpsychism seems to have been gaining a lot of ground with the metaphysicians recently. Very approximately, it's the notion that consciousness is just the out-cropping or concentration of a "psi field" that pervades everything. Even electrons and neutrons possess eensy-teensy little specks of consciousness, according to the panpsychists. Panpsychism seems, according to its adherents, to offer a glimmer of hope that we might resolve what they call "the hard problem of consciousness" by describing how mental events arise out of matter.

(National Review Online, 2008)

Skeptic: Psi energy would have to be capable of penetrating through rock, metal, radiation belts, ozone layers, even through the vast void of space without degradation in order for it to affect cellular constructs, let alone the individual atoms which comprise them. And yet, this force is so weak, so insubstantial that no known man-made object can even detect it, let alone measure it. Pretty incredible.

A: Who said energy? Think rather of the pilot waves in David Bohm's controversial but still actively advocated reconstruction of quantum mechanics. In fact, think exactly of his psi waves. I am sceptical, very sceptical. I once argued with Bohm's former colleague and disciple Basil Hiley about all this. Apart from the fact that he has already forgotten more field theory than I can ever hope to know, it was clear to me that there is no solution in sight for a number of major conceptual questions regarding anything like a psi field. Recently someone made a big deal of having at last gotten Bohm theory into Minkowski spacetime, so at least the theory is QED ready, but general covariance (for gravity) is still nowhere in sight. So where's the beef? A reformulation with no experimental differences, no conceptual strengths unless you count the woo-woo of universal psi, and no help for quantum gravity. I say forget it.

Look, all this stuff is way out, OK? When Galen makes a big huff and puff about panpsychism, so much so that the Tucson circus organizers (Stu and Dave are soft touches for Galen and his breathless Oxford enthusiasms) gave his hobby horse a platform, we can all smile indulgently and put it down to too many hours talking with undergraduates who don't know their arses from their elbows. Personally, I don't think panpsychism has a chance. But it is amusing and thought provoking, and well worth a discussion like this.

Let this be a message to all ye nay-sayers. Even if an idea is so way out as to be mad, there can be a lot of mileage to be had from it in reperspectivizing

otherwise intractable condundrums. Such toying with the madness is all in a day's work for a good philosopher. Doesn't mean we're mad too. Just persistently gullible – until it comes to the crunch. Then we fall back on our all-purpose doubt and go back to square one.

Stud: Christians are asked to believe, not to know with certainty. John 3:16 says that belief, not knowledge, is the way of salvation. Knowledge is from the head; faith (belief, trust) is from the heart.

A: Letting the heart rule the head is a recipe for disappointment. Fulfillment too, perhaps, but fulfillment in a rationally unsatisfactory enterprise. The trick is to keep head and heart together. Let passion fill your innermost thoughts! Let reason rule your utterances. Let your soul soar with God but let your words be judicious.

Panpsychology

A Polyphonic Master Class

My Koan

The Mind's I – Gene's I – See?
 ICGG, He C me, not?
 Goof Gloop!
 Cloop ergo not not.

– AtheEisegete

Voluptuaries of the enlightened mind will doubtless recognize the *The Mind's I* as a genially assembled anthology of readings edited by Douglas Hofstadter and Daniel Dennett, both of whom loom large in my personal pantheon, an anthology now over a quarter-century old. As for the “Gene's I” that dashes in to qualify the seeing eye, readers of panpsychology will naturally discern the genocentric trace of Goof, the God of our fathers, the trace that betrays the divine sustenance behind the Dawkinsian demagogery for selfish genes.

So much for line 1. The acronymic “ICGG” is a texted analog of “I see GG” – where GG is of course the aforementioned personification Gene Goof of the Abrahamic attractor for the gene-driven zombies who shuffle behind the monothee. And “He C me” makes eminent sense in the orthodox dogma of the great “I am” who indeed notoriously sees me and my sins in the terms of the central dogmap we call the Bible. The “not” is the Gordian knot of inwit, always negating manifest truth in order to test its awesome power. Do He or do He not? That is the question.

Now, here comes the logical crunch. A G-loop is of course a Gödelian loop, as served up to a thirsting world by Douglas Hofstadter almost three decades ago in his report on the eternal golden braid. In my new instantiation, the “Goof Gloop” is the I-see-He-see loop, with a “not” twist to give it that Gödelian agenbite that prompts the AtheEisegetean inwit to pull a wry smile, and naturally triggers a paradox that may not stand unchallenged.

The loop that apparently may not without risk of dizzying Gödelianism be allowed to stand unchallenged is a “Cloop” – a see-loop – where the I-see-He-see variant is a hottie, so to speak (assuming you are ready to accept that the self of Gene Goof is none other than your very own self-alienated self peeking through the mystic mist at its own gene-rooted self), and the notted version is, well, a nottie. (Apologies to Paris Hilton, who never asked to be dragged in this ironic fashion into a New Age fragment of hot-doggerel.) The “ergo” word is of course Latin, a deferential nod to Descartes, whose *Cogito ergo sum* – I think therefore I am – launched us all into the Age of Me.

Finally, the conclusion of the *reductio ad absurdum* triggered by the Gödelian construction is of course the negation of the not-twist.

A pedantic aside may assist the more earnest seeker here. Devotees of the intuitionistic brand of logic will insist that not not A is not yet A, not yet the assertion of that doubly negated proposition. Only a classical thinker would accept that final affirmation. So we cannot uncontroversially affirm the see-loop in all its positivity. The shadowy intuition of doubt clouds the final reciprocity of the seen seer.

What drove me to this extremity of cryptic logicism? A hint may suffice. Anyone who knows the traditions of that august newspaper known to Americans as the London Times knows too that its celebrated daily crossword is second to none. Its cryptic clues are no less obscure and convoluted than my loopy tetragrammaton. And I, yours truly, bearer of the depicted eye [my forum avatar], did spend some of the best hours of my higher school-years puzzling with my colleagues over the said crossword. Skilled devotees of that chequered mandala can do their daily puzzle in minutes, but this skill is as finely honed as that of the solver of the Rubik cube. The devotees who polish it off in the minutes they spend each morning in the commuter trains that daily dock in the terminals of North London tend to be higher civil servants, Whitehall mandarins, with Oxbridge degrees in the classics, and deploy a mastery that transcends my modest attainments in the puzzle stakes.

Shag: B4 U R B8-ified U F 2 B B9.

A: I'm down widat!

Class Action

Unk: Guiding threads of myth through the needle-eyes of cogent 21st-century worldviews can amount to anything from somewhat fun to life consuming. How is philosophy useful today, and was it ever good for anything? To be considered philosophy, rather than something in cognitive or social science, is itself a threading of the needle.

A: A philomiphic metaphor, one might opine. The fabric of our collective mindworlds is now quite finely woven, as nanotech reaches the parts previous worldviews failed to reach. Philomiphics is the love of miph, and miph, as I explained in passing in my 1996 novel *Lifeball*, is the combined firepower of mathematics, informatics and physics, and thus the thread that weaves the world we inhabit.

If you would indulge me in a little epiphany here, the modern miph outdoes all previous mythologies so comprehensively that we can talk of a phase transition in life on Earth, from a terrestrial exosphere dominated by mammals with big brains to a network of miphic agents (you don't have to be a professional magus of miph, or even a metamagus like Zaross, to be an agent in the network of miph) that dream together of planetary transformation. We are digging www-dreams for victory (victory, namely, over the last

avatars of the top-predator mammals paradigm that was redacted in the goofic myth) and will shine in glory as pioneers of the gaianized Lifeball that our successors will create from rockball 3 in system Sol.

Shag: You can abandon all pretense of meaning anywhere in the universe. Assume you have abandoned meaning. Notice that your heart continues to beat, you breathe in and out, you get hungry and eat, and so on. Do you think philosophy is anything but whining?

A: No, you can't (abandon blah), because the sheer act of reading presupposes meaning sufficient for understanding. Meaning is a fact that we can explain in the miph, and along the way we find that purpose and other mythic legacies become transubstantiated as part of the deal. Pay your dues to the demigods of miph and get all this too, for free. This has to be a bargain worth signing into. All you lose are the threadbare rags of nihilism.

Philosophy at its best is more than whining. Philosophy at its best is cheer-leading for the miphic epiphany. All the best philosophers had a background in the miphic arts, and they simply elaborated some of the consequences of their miphic strength to spin our their philosophies. Take it or leave it, but with patience you can use the latest nanotech fabric to filter some gold from the dross.

Unk: I don't care on any great emotional level about the destiny of humanity. I'll be long gone well before the matter has been settled with finality.

A: Ah, here we go again. Who am I? Or rather, who are you, the "I" of your cerebral vortex? I is a many-splendored thing, and layered like a hierarchy of Buddhas. The more basic levels of I are the vanishing forms that encourage shaggy banalities of stunning inconsequence, but the higher levels, where traditional words like "spirit" begin to seem applicable, deserve the highest respect. My inference from the manifest glory of this I-erarchy is that we'd better not diss the goofic chameleon who has just popped up (to me, in my panspsychic revelations) as the autophenomenology of genocentricity (to marry the genial brainchildren of Dan Dennett and Dick Dawkins, those two horsemen of the atheocalypse).

Shag: Your message has nothing to recommend it over the work of much plainer apologists like Alister McGrath.

A: McGrath is a Christian apologist. I am no apologist for the Adonis-like Jew who got himself crucified and inspired a dubious figure called Saul to proselytize for his mystified vision of Gene Goof. I think I understand what this Jesus dude did and tried to do, and respect the dream, if not the implementation. This does not make me a sheep in the Christian flock.

Stud: The fact that you [Shag] had an urge to mitigate suffering indicates that the *imago dei* is still hanging on to life even in the darkness of your soul.

A: In my reading of this urge to mitigate suffering, it reflects a sensitivity to the call of the genes. We are not islands in our fleshbags (where in each of us

almost a petamolecule of DNA carries those shards of the goofic splendor to nurse us through our days) and we respond to each other. Who, on seeing his brother ailing, would walk on the other side? The darkest souls are just before dawn.

Shag: Admitting to embracing suffering, like some Buddhist monk, is still too much emotional commitment. I like to watch, and I will do so until my eyes close for the last time. What you are reading are my observations.

A: Watching is vicarious doing. Those mirror neurons in your cortex are dancing in tune with the fun outside and perking you up enough to “like to watch”. Admitting to an addiction is the first step. Admitting that the old fleshbag has its own predilections that need to be fed and watered is also good.

Unk: In my opinion, nihilism is not simply a denial of life value, but a denial of bullshit underpinnings of values. It doesn’t deny valid emotional reaction but does indeed mock the strained and trivial attempts.

A: Bullshit is in the eye of the beholder, if you will excuse my presenting a rather unsavory image to your mind’s eye. One might even say, let bullshit be in the eye of the beholder, or let a pancake of same be thrust into the eye of the beholder. Let bullshit be upon him! Let him stink in the effluvium of his own self-anointed bullshit! Really, if this evocation of the rectal output of bulls is the best by way of critical response to the issues of our time that a commentator can muster, then a baptismal immersion in that ordure is a worthy tribute.

Stud: Bullshit does need to be eliminated, and if nihilism accomplishes that, it is indeed a useful tool. But if it is seen as more than a tool, and if it is taken as an accurate expression of reality, then it is depressing. That is no reason to reject it, but I do reject it because I am a believer. I interpret Jesus’ teachings as more of an attempt to reorient humankind toward its center, which is Him. If He was not the Son of God, he was the biggest narcissist who ever existed.

A: Well, the nihilists of the Third Reich certainly eliminated a rather large pile of bullshit, namely half of Europe as it then stood. As for whether the pile of glory that now stands in its place merits any comparable purgation, time will tell. I fear that the quality of the globalized culture we have excreted in recent years is poopier than one might desire, and a workover from a few million rabid Allah-nazis might have a purgative effect that is not entirely catastrophic and disastrous. Yet still I like playing in our poop sufficiently intensely to feel that the Allahist workover should be resisted with extreme prejudice if need be.

As for Jesus the narcissist, apart from the fact that we are misusing the N-word rather grossly here, who ever doubted the diagnosis? As I have demonstrated to my own logical satisfaction, Jesus was about as N as they come, even more so than that fame-blessed solipsist Ludwig Wittgenstein. The Adonis myth that Jesus exemplified in his own way appeared many times

in history. I found a good presentation of an earlier exemplification in Jewish history in the tetralogic novel *Joseph and His Brothers* by Thomas Mann.

Unk: From what I can gather, nihilism involves rejection of all or most of the following:

- the idea of deity
- morality
- life meaning beyond the immediate reality of a given context
- the notion that human life in its present condition is worth continuing

A: As a trained philosopher, certified to administer philosophical correction at the least provocation, I would beg for further clarification of the terms “deity” and “morality” in this attempt at a definition, as well as an indication of how the meaning of life and worthiness for life are intended to be understood here. This is not mere wordplay. In my eisegesis, we have miphic deities that have totemic power exceeding all the tribal festishes like Yahweh in our prehistory, and the rejection of deity here is self-defeating if it extends to the miphic overlords. Analogously for the other clauses.

Unk: Morality is something that is commonly fought by certain people, though it often involves simple, everyday situations. When the answer to a situation is clear and obvious, then to do otherwise issues a private challenge to morality itself. When the answer is fuzzy, difficult or convoluted, chances are that such an answer relies on ethical consideration. Ethical consideration tends to corral attention to various or disparate circumstances attempting to align themselves into morality as it is perceived. People generally agree on moral issues and often disagree about ethical consideration.

A: Let me try to rephrase this. A sense of morality is a simple inclination to do the right thing, without any further sophistication or obfuscation. Ethical systems are constructed by elaborate social mechanisms and attempt to codify a moral stance.

Unk: Nerve impulses are the basis for morals. When I refer to my nervous system, I’m not only referring to my brain. Our nerves provide us with our morals. But we can choose to abide by them or ignore them. It’s up to each individual to decide which aspects of morality are ethically reasonable and which need to be discarded or amended.

A: Moral intuitions come to us via nerve impulses modulated by a rich stew of macromolecules in blood and synapses, where the whole electrochemical process is a product of evolution. Our intuitions are partly shared with other mammals (shown by recent work on monkeys that behaved better than some humans in lab tests of morals) and partly specific to our species (for example, unlike lions, we don’t normally eat our infants). Since we have personal minds and ethical systems, we tend to override our moral intuitions with intellectually nuanced judgments. This can be useful in a civilized setting where evolved traits may be counterproductive, but the whole contrived result can easily go horribly wrong.

Unk: Here is my hypothesis summarized:

Proper lessons having been learned + neuro-anatomical/chemical parts sufficiently in place + sufficiently supportive environment = deterministic moral agency.

A: In sum, if evolution did its job right, we simply trust our moral sense. But evolution is a fumbling and opportunistic bodger, not a visionary master architect, so we can't just say something is moral because evolution gave it to us. Anyway, evolution gave us big brains, and we use our brains to set up ethical systems, but ethical systems can lead us away from any moral foundation we may have started from. Since civilization changes our environment much faster than evolution can change our visceral intuitions, we end up all at sea.

Returning to the triggering issue here, what does a nihilist rejection of morality amount to? A rejection of the whole moral side of our evolutionary heritage? A rejection of moral verdicts that are out of their depth in a modern setting? A rejection of ethical systems that fail to reflect moral truths? These are very different things.

Stud: In the American board game *Life*, the object is to go through the usual phases of life and end up with as much play money and assets as possible – he who dies with the most toys wins. The loser goes bankrupt and “becomes a philosopher.”

A: Making money is a consequence of doing what other people (think they) want you to do. As you get richer, you become locked into cyclic flows that get bigger and bigger. All this is very much like gaining good karma in Hinduism. Whether the karma, the loot, the toys make you happier in any deeper sense is left as an exercise for the philosophers.

Bill Gates echoes earlier plutocrats who said it was shameful to die rich. You should give it all away to support causes you believe in. Both Bertrand Russell and Ludwig Wittgenstein did just that. They started out rich and gave away their fortunes so that they could devote themselves to the study of philosophy. Bill is burning his loot for similar reasons, even if his are slightly less, er, narcissistic.

Stud: Fact will conquer meaning at every level. There will not even be any need for philosophers to create myths or miphis for us to aspire to, as everything will be made known. The philosophy of the gaps will disappear right along with the god of the gaps, as there will be no more gap to mind.

A: Facts are like money. You can accumulate them all you like, but whether they make you happier is for the philosophers to ponder. As for gaps, openings, opportunities, they are always there. You only have to look hard enough. Scientists find gaps every day, and plug them with new experiments, which open new horizons, revealing new gaps, and so on. If you think there are no more gaps, then your soul is boxed and buried already.

Stud: My argument is that philosophy depends, to a certain degree, on religion. If there is a God, philosophy has something to do as we grope for the meaning of meaning.

A: Let me use a computer metaphor. In any SAP landscape there is a “central instance” that performs the tasks required to keep the landscape in order. Or a governance metaphor: in any political system there is a monarch or a president or a dictator where the buck stops. In any judicial system, there is a court of last appeal. And so on. The role and powers of these metaphorical demigods are infinite in principle but mostly trivial in practice.

Similarly, in my mindworld constructions there is always a limit. A mind-world loops the loop at some point and becomes, as it were, balled up for its successor mindworlds to build on (or kick aside). The point of closure is a singularity or a limit from within, perhaps made inaccessible by some kind of infinity, but ordinary from outside. For example, the ordinal number omega is the infinite limit of the natural numbers 1, 2, 3, ... but is accepted in higher math as a just another counting ordinal. The North Pole is a limit for a Mercator map but trivial on a globe.

Stud: It is possible to come to agree with moral stances that are totally against everything that you learned during the initial socialization process. This process says nothing about the validity of the moral code that we settle upon, but it does seem to indicate that we have been geared and wired to determine meaning. Even nihilism itself is a form of moral philosophy whose acceptance may have moral consequences.

A: Sure. By playing Grand Auto Theft often enough or lusting to enough online porn, you can wire up your neuronet to make you a sociopath or a psychopath. This is the ongoing nature of evolutionary morality. We are doomed to take it all a step further at each generation, and this gives us the freedom to get it wrong and make monsters of ourselves. Verily, the righteous family men and women shall inherit the Earth.

Shag: May we ask for further clarification of your acronymic salad of GOOF balls?

A: The Abrahamic monotheisms sweep all the mysteries of life under one big carpet and say God knows. The sheer bulk and variety of these mysteries make this tactic utterly futile. Mystery upon mystery, paradox on paradox, and rigid reference to ancient texts that look like nonsense discredit the entire institutional infrastructure build to honor this God. How can anyone take an entity seriously that resists all rational analysis?

But junking the whole lot and going back to facts and common sense is no longer an option. Recent evidence in the industrialized world suggests that many people need more than that to feel good enough to be fruitful and multiply in a world of dog eat dog. Some institutional recognition of the human predicament and the need for social solidarity is apparently welcome to those who flock to the monotheisms despite their manifest absurdity.

My top-down approach here is to start by peeling away two sets of issues that cannot reasonably be assimilated to a god conceived as the GOOF. One is the whole range of concerns addressed in miph – mathematics, informatics, and physics – which seem to me to have a depth and intractability incommensurable with the traditional phenomenology of the GOOF. The other is the domain of human psychology, as revealed by introspection and neuroscience, where a self can obviously ground itself in miph and facts and common sense independently of the GOOF and its mad institutions.

My “aha” moment came when I saw that the idea of selfish genes has great relevance to the GOOF thus trimmed. The self explained as a more or less rational being in a miphic world of facts is in effect a robot – a cognitive agent attempting to maximize various things (satisfaction, income, whatever) in a precut landscape. Such a self is ultimately a Turing machine. In evolutionary terms, what is missing in the picture is any sense that the machine can be driven to replicate or has any drive toward anything beyond its own incarnation. Genes would drive such a machine by imposing a self beyond the self.

So if each of us has an ordinary self, which is the biological robot in the standard story and the familiar self of everyday life, it would be natural to expect also an extraordinary self, as a phenomenal manifestation of the selfish genes package. This extraordinary self would have strange, paradoxical, apparently irrational attributes – just like the GOOF. The Abrahamic religions have homed in, as if by sleepwalking, on precisely the genetic attractor that an evolutionary picture would predict. Once we strip away the miphic and psychic irrelevancies, what is left is a fetish that accompanies and comforts people in their birth, marriage, and death preoccupations and thus complements the rational robot self-image.

Once you see the story here, the religious hostility to evolutionary biology is apparent. Darwin and Dawkins (and all the others) between them hit the nail on the head so smartly, once we trim the miphic and psychic issues from the GOOF and see what is left, that what we now confront is a huge monster in its death agonies, like a vampire with a stake in its heart. As scientists, we have killed the beast. But now we find we need some of the things the beast-placating religions provided. Of course we can make them anew, but to do so we may do well to look to old-time religion for a few helpful hints.

Unk: What are the differences between scientific-based and philosophy-based epistemology?

A: There are none. Epistemology is the methodology of science.

Unk: Do you consider it correct to say that consciousness is *a priori*?

A: Yes, consciousness in some sense (a transcendental sense in Kantian terminology) is a precondition for anything at all, therefore is strictly *a priori*.

Unk: Have you been arguing for a position that describes all energy-matter structures as being in some way conscious?

A: Again, yes, in some sense, albeit one removed from what we in everyday life understand by consciousness, in a sense perhaps better described as embraced within a consciousness centered elsewhere. This is the core message of pan(potentio)psychism.

Unk: I have no idea what a nihilistic rejection of morality amounts to. My rejection is motivated out of recognition that issues positioned under the umbrella term “morality” are so subjective that they don’t make much sense to me.

A: Subjective is right – that’s the basis for the positivist rejection of the objectivity of morals. My problem with that is that things can be subjective and objective at once. The best examples are from mathematics. When I say “ $1 + 1 = 2$ ” it is my direct subjective apprehension of its truth that convinces me, yet the truth is as objective as any truth. Similarly for binding character of a law like “Love thy neighbor as thyself” which again is validated subjectively yet arguably as objectively valid as any law of physics.

Unk: Couldn’t you just as well argue that no thing, living or nonliving, has any significant consciousness, as consciousness is technically defined? That is, biological and even other organisms or entities are able to react to environmental forces, but that’s all.

A: Well, you could argue like Freud that most of the mind is unconscious and much of the rest is subconscious. Certainly most of us humans are utterly unconscious of a whole lot of stuff that impacts us quite directly.

Dude: Energy is matter and matter is energy, so any “precondition” puts consciousness before the energy/matter that you say it is attached to.

A: Consciousness is not mass, energy, or momentum. It may have something to do with information and entropy, but no-one really knows what. Think of it as analogous to mathematical things, Platonic universals.

Dude: Andy, Kant, Hegel, what can any of them say about the unknowable that makes it any less unknowable?

A: Quite a lot, indirectly, like describing the outside of somewhere from the inside. Do experiments, think hard, and infer as much as you like about the outside, subject to a few residual uncertainties and the inevitably hypothetical nature of all specific claims to knowledge. That’s just science in action.

Dude: How can there be information and entropy before energy and matter?

A: Reasonable point – the current consensus is that they are all coeval. Somewhen in the first yoctosecond, all these things crystalized out of the conjectured perfectly symmetric singularity from which all things began.

Dude: Mathematical things and Platonic universals are not things, they are ideas.

A: No, this is the error argued by Husserl in his exchanges with Frege in the nineteenth century. Ideas are out of psychology, but mathematical entities (not things) are something beyond that. Perhaps they could be ideas for a transcendental psychology, but not for an empirical one based on brains and so on.

Dude: You could go so much further and to far greater heights if you would just concede that consciousness is an emergent by-product of energy/matter and not a prerequisite or corequisite of it.

A: Panpsychic consciousness (whatever that is) was approximately coeval with information and momenergy, if any of this blooming forth of categories from the big bang is to make any sense at all.

Dude: You may not accept the Christian idea of God, but don't fool yourself, a more acceptable idea of God doesn't take you any further forward from them, just sideways.

A: God outside the Abrahamic context is a term lacking a defined reference, perhaps a name for the divine mystery that remains whatever conceptual breakthroughs we achieve. The idea of progress at that level is illusory.

G. Spencer-Brown: We take as given the the idea of distinction and the idea of indication, and that we cannot make an indication without drawing a distinction. We take, therefore, the form of distinction for the form.
(from his book *Laws of Form*)

A: For me, the primordial distinction is between individual and universal, or, to put it more intelligibly, between spatiotemporal things (including fields and physical entities generally) and things analogous to mathematical forms, which for me includes not only virtual entities but also the basic structures of consciousness such as selves, which I cannot help but see as logical entities (or illogical, but at any rate entities to which logic may be fruitfully applied). Hence the link with information, despite the linking of that concept via entropy with the grubby world of physics, where we soon come back to momenergy in spacetime and confuse the whole picture.

Head: Perfection is a religious idea.

A: The striving for perfection in whatever form, be it female or artistic or technical or mathematical or divine, is what makes life worth living.

Stuart Kauffman: To believe that the biosphere came into being on its own, with no creator, and partially lawlessly, is a proposition so stunning, so worthy of awe and respect, that I am happy to accept this natural creativity in the universe as a reinvention of "God".

Head: I don't know about you, but I'm striving for ascent, not perfection. The sky's the limit with ascent.

A: Ascent is another way to get high. A good way to get high is to sit on a rocket. But then you'd better hope there were perfectionists in the dream team who put the rocket together. Apollo – the perfect high!

Matzo: I can prove theorems about perfect circles and other mathematical objects. I didn't say I could prove they existed, they are defined into existence mathematically.

A: Having tired of the century-old debate among logicists, formalists, and intuitionists, I hereby invent a new position – virtual realist. Mathematical entities are like the entities we invoke with bit code in our machines. Their effects are real, the logic of their interactions is inexorable, yet they are virtual. For me, virtuality is akin to universality. By playing with particulars (bit strings, pen and paper, whatever) we create a heaven of universals around us. The determinacy of this heaven reflects the freedom of our will as power to create.

Dude: Just read an interesting article in the latest *Scientific American* [June 2008] on Causal Dynamical Triangulation.

A: This is an exciting research program. I read the *Scientific American* article but was disappointed by its lack of substance. I am reading the CDT authors' arXiv articles (Ambjørn *et al.*).

Dude: Given your view of determinism and given that from the microscopic to the macroscopic a strict causality is required, how do you incorporate this into your world view?

A: The “Lollian” approach is to use a Feynman path integral to sum over all the ways the CDT simplexes can build up their 4D triangulation of the causal (light cone) nexus into a geometry. It turns out that all the wacky geometries (tend to) disappear in their Monte Carlo simulation of a summation and – lo and behold – a de Sitter universe emerges. Caution: I have not repeated their computations so my present impression is taken on faith.

I see no particular puzzle over determinacy here, any more than in any other quantum path integral calculation. The approach demands that causality (via light cones) be taken as primitive, but that's fine with me. You have to start somewhere. However, a causal nexus is arguably a shadow thrown by a primal cause or an agent – the Causal Ontic Driver – so there is scope for a panpsyche here. I sense the shadow of Boss (the background of spatio-temporal structures) in my Boss–Susie–Golf trichotomy (a.k.a. Trinity), where for the hard of acronymizing, Susie is the subject underlying the self of introspective experience and Golf is the god of living forms (which in turn is a Darwinianized successor to Goof, the Abrahamic god of our fathers).

Wimp: From what I gather so far, a property dualist interpretation of how the brain generates consciousness is not really falsifiable, since it would show no unique differences in the results of brain scanning from a purely physicalist approach.

A: Right, this is a philosophical position with no empirical falsifier, unless you count absence of a general sense of having a better grasp of the whole story as a falsifier. My aim is to dissolve the puzzlement often caused by the issue of self in the world, as a preparatory move to building a theory with empirical and perhaps even predictive content.

Wimp: From what we are learning about brain function, our sense of having a unity of consciousness and possessing an embodied self is just as much a construct of neural mapping as the neural interpretations of sensory information about the world around us. Those inner states of consciousness may be beautiful, but that does not mean that we can trust our interpretations of them.

A: I agree. For me, the states are just raw input for a model. If the model makes sense of why we feel them, good. That would be part of an accumulation of claims for the model as a whole.

Wimp: I'm still not willing to rule out panpsychism. The zombie arguments raise a good question about our sense of awareness: can we really explain our own sense of awareness by reducing it to inert physical processes, or as an epiphenomena of those unconscious forces?

A: It is a plain fact that the "I" accompanies all our awareness. However messy this "I" becomes on analysis (as in Dan Dennett's explanation, for example), the fact of its framing all our experience is the first axiom of panpsychism. All worlds have an "I" and all sum up in the great externality to create the big public world (with all its inner contradictions) that we inhabit and treat as our playground, as we are doing here.

Naturally, an envelope "I" for the big public world trails not far behind, and soon we are deep in my notorious acronym salad of spooks that defy banishment.

I would expect that we can explain our sense of awareness as we can explain any other physiological process, but that explanation fails to exterminate the spooks precisely because it provides a recipe for making them physical agents like ourselves.

Wimp: If conscious properties are part of the stuff that makes up the universe, a property dualist understanding of brain function would look the same as a physicalist interpretation.

A: This is where property dualism goes off the rails for me. A property of everything from this (always my own) perspective is ripe for reduction. Consciousness is just another name for the process of bringing the manifold of experience to (what Kant called) the synthetic unity of apperception. To make a world, the elements of experience must somehow come together. The simplest mathematical description I know for this is set theory, and on that basis one can build a fairly detailed theory of worlds.

A conscious entity inhabits a succession of worlds, like a string of beads in William James' image: "The axis of reality runs solely through the egotistic

places – they are strung upon it like so many beads ... The world of our present consciousness is only one out of many worlds of consciousness that exist.” (from his *Varieties of Religious Experience*). Worlds come in all sizes and overlap in all ways, to create all we know and all we imagine, including gods and other spooks.

Dude: The Sun, for example, is massive, so it should have a consciousness billions and billions of times greater than all things we call living combined.

A: Well perhaps, it does. We are solar-powered creatures. Perhaps we are marionettes pulled via photonic strings by angels who live on the Sun. These angels would be photonic creatures, sprites who dance on hot plasma and enjoy winding us up and watching our grindingly slow “Life on Earth” show some 500 seconds away from them on the cold surface of Rockball 3.

As a mathematical diversion, try calculating how many bits of vital information you could receive every day from the solar flux, then imagine how few it might take to give you your daily illusion of acting like a free agent and so on. The universe could contain a lot more “consciousness” than we think. We can only judge conscious at approximately our level. Both above and below us, we can be sure there are surprises galore – so invest in panpsychism now!

Wimp: The self-conscious awareness that we enjoy, which is generated by what neuroscientists tell us is the most complex physical structure in the known universe, certainly depends on complexity.

A: Defining the complexity of the brain in a satisfactory way here is harder than you might think. See, for example, the article by Giulio Tononi that follows the article he co-authored with Christof Koch in the *IEEE Spectrum* special issue on the Singularity (June 2008). One gets the distinct sense that the definition is tailored to reach the desired conclusion.

I would expect that the potential complexity of plasma configurations in stars, for example, could exceed the Tononi-tailored complexity of the human brain. We are only impressed by brains because we have them, hence we’ve studied them, and found – surprise! – that their complexity is a tad more than we can conveniently comprehend.

Wimp: But who’s to say that consciousness does not exist until a given level of complexity is arrived at where a living creature attains some level of self-awareness?

A: Well, indeed. It would hardly be surprising to find a few decades hence, after a suitably massive research effort, that consciousness is instantiated in a simpler way in relatively humble life forms.

Justin: Why read books and talk and think about consciousness when it is right here, right now? This is basic, experimental science. You don’t have to take someone else’s word about it because you have your own first-hand experience.

A: The science of breathing is not breathing. The science of quarks is not quarks. The science of breathing is a laboratory investigation informed by a detailed model of anatomy and organismic function. The science of quarks is a huge undertaking involving giant accelerators with superconducting magnets and petaflops computer networks.

The science of consciousness is in part neurophysics, as in the IBM Blue Brain project, partly disciplined thinking based on such work, as in the efforts of Christof Koch and Giulio Tononi published recently in *IEEE Spectrum*, and partly good old-fashioned lab work, as reported recently by Israel Rosenfield and Edward Ziff in the *New York Review*.

There are no short cuts here. If there were, we'd have found them already. Or rather, if you have discovered one, tell us about it. My guess is that you will find that writing about consciousness is not as easy as having it.

Dude: I don't see how you get from quantum path integral calculations to a non-deterministic mind.

A: What happens, happens. A path integral calculation is constrained by the need to reproduce the observed results. We tweak the boundary conditions and normalization factors and free parameters until we get the "right" answer. For example, in the de Sitter universe path integral we disallow loopy topologies. So any appearance of determinism in the calculated answer is misleading. As theorists, we are lucky if later results continue to conform to our answer. A believer in free will can say our freedom is best realized when we stay in harmony with the story so far (the calculated trajectory) but we reserve the right to junk it and start a new path. The sceptic will reply that the reserved right is illusory and the harmony is always preserved.

Dude: If you blew up a junk yard and all the parts randomly fell back to earth in the form of a complex pattern, good, but if you dictated where the parts fell that would make you God and take away the parts' freedom to fall where they may.

A: A dictator is not an interesting model for a concept of god. The harmony of creation, realized as the structured outcome of the relaxation of apparently independent pieces of junk into something more like thermodynamic equilibrium, is a better one.

The interdependence of all things finds its expression in physics in the theoretical framework, such as quantum field theory, with its path integrals and boundary conditions and so on. Within the picture, parts can achieve conditional freedom by incorporating internal mechanisms. For example, my car has the freedom to change gears by itself and hold a constant speed by itself, conditional upon my willed preparation of the appropriate prior state of free motion on a highway under engine power, with gas in the tank and so on. My freedom to do this is conditional on my good health, desire to go from A to B, possession of the relevant papers and so on. That overall state in turn is a free realization of the continuing smooth functioning of the global

economic machine, proteosynthesis from my DNA, terrestrial plate tectonics, solar thermonuclear fusion, and doubtless much more besides.

The exercise of freedom is not contradicted by the fact that its outcome falls under a description according to which that outcome fits harmoniously together with other events in an overarching theoretical framework, even if that description happens sometimes to be one uttered in imperative mode by a dictator. A dictator can fail to dictate, yet utter words that sometimes match events, just as a stopped clock can be right twice a day.

Things happen, and fall into patterns. The free realization of form in the natural flux is like a firework display, which is no less freely chosen for exemplifying a precise dynamics. If all were primal chaos, my freedom to shoot fireworks would be nugatory. To exercise freedom, we need enough determinism to be able to predict the relevant outcomes of our acts.

Bubbles

Christian de Quincey: *Reality bubbles* – Can we know anything about the physical world?

From Plato's *eidōs*, to Descartes' *cogito*, to Kant's *noumenon*, our understanding of reality has faltered at a seemingly impossible, double-edged, impasse. First, an ontological 'hard problem': If mind and matter are so radically different and separate, how do they ever interact? Second, a related epistemological conundrum: How is it possible for mind to ever know anything about matter – including whether it even exists? Then came Whitehead. By shifting the mind-matter relation from substances interacting in space to complementary phases in process, he offered a way through, or at least around, the Kantian impasse. His panpsychist ontology came hand-in-glove with an epistemology of intersubjectivity: We can know the objective physical world because the actual world is not just physical, and because it necessarily and intimately informs and constitutes our subjective experience.

Whitehead revolutionized metaphysics by proposing that reality is composed of enduring moments in process. ... Every actuality is an occasion or moment of experience. Every moment endures briefly as 'now' before it completes itself and expires to become a past moment. It is then immediately succeeded by a new moment of 'now'. Whitehead summed up this process in a memorable phrase: 'Now subject, then object.'

Think of reality as made up of countless gazillions of 'bubble moments,' where each bubble is both physical and mental – a bubble or quantum of sentient energy. ... Each bubble exists for a moment, then pops! and the resulting 'spray' is the objective 'stuff' that composes the physical pole of the next momentary bubble. Each bubble exists now, and it endures for a split moment until it, too, pops! The quantum of time between the formation of each new bubble and when it pops is the 'lifetime' of a moment of subjective experience. ... Each bubble, therefore, is both mental and physical—just as

panpsychism tells us. These oscillating poles of mental-physical-mental, leap-frogging each other through time, are the fundamental ingredients of reality: bubbles or quanta of sentient energy or purposeful action.

One of the attractions of Whitehead's panpsychist ontology is that it embraces the core insights of dualism, materialism, and idealism. ... Combining these multiple intuitions in an integrated process is the fundamental insight of panpsychism.

(Journal of Consciousness Studies, 2008)

A: Christian de Quincey is singing from my hymnal. I've been evangelizing for this view for years. I did it independently of Whitehead but I based it on set theory, as Whitehead did. My extra twist is to take the quantum metaphor literally, as the phenomenology of certain decahertz photons radiating from neural action.

Dude: We are contingent on the universe for existence. It is not contingent on us. Reality didn't arise from us, we arose out of it. Why do so many great minds seem to ignore this for some grander complex explanation?

A: The reality bubbles I live in are as contingent on me as I on them, by complementarity. The Kantian insight was to see that reality itself is unspeakable and we live in bubbles informed by what he called the categories. The asymmetry can only be asserted from within a bubble. The Whiteheadian insight was to see that subjectivity in some form goes all the way down. As humans we are mortal but as subject we are coeval with reality, by complementarity. The world-knot is subtler than we can grasp via naïve realism. The whole history of philosophy is an attempt to rise above naïveté and glimpse the deeper truth.

References

- Aczel, Amir D. (2001). *Entanglement: The greatest mystery in physics*. Four Walls Eight Windows.
- Adams, Douglas (1986). *The Hitch-Hiker's Guide to the Galaxy: A trilogy in four parts*. Heinemann.
- Albert, David Z. (2000). *Time and Chance*. Harvard University Press.
- Ambjørn, J., J. Jurkiewicz, R. Loll (2006). *The universe from scratch*. arXiv:hep-th/0509010v3
- Ambjørn, J., J. Jurkiewicz, R. Loll (2008). *The self-organized de Sitter universe*. arXiv:0806.0397v1
- Arntz, William, Betsy Chasse and Mark Vicente (2005). *What the Bleep Do We Know!? Discovering the endless possibilities for altering your everyday reality*. Deerfield Beach, FL: Health Communications.
- Barbour, Julian (1999). *The End of Time: The next revolution in our understanding of the universe*. London: Weidenfeld & Nicolson.
- Barnhart, Bruno (2000). *Bede Griffiths and the rebirth of Christian wisdom*. www.bedegriffiths.com/wisdom/bede-and-rebirth-of-christian-wisdom.htm
- Barrow, John D. and Frank J. Tipler (1986). *The Anthropic Cosmological Principle*. Oxford University Press.
- Bell, John S. (1987). *Speakable and Unspeakable in Quantum Mechanics: Collected papers on quantum philosophy*. Cambridge University Press.
- Berg, Yehuda (2002). *The Power of Kabbalah: This book contains the secrets of the universe and the meaning of our lives*. Yodere Group.
- Bloom, Harold, and David Rosenberg (1990). *The Book of J*. Random House.
- Bloom, Harold (1992). *The American Religion: The emergence of the post-Christian nation*. Simon & Schuster.
- Bloom, Howard (2000). *Global Brain: The evolution of mass mind from the big bang to the 21st century*. Wiley.
- Bohm, David, and Basil J. Hiley (1993). *The Undivided Universe: An ontological interpretation of quantum theory*. Routledge.
- Boyer, Pascal (2001). *Religion Explained: The human instincts that fashion gods, spirits and ancestors*. Heinemann.
- Buber, Martin (1923, translated by Walter Kaufmann 1970). *I and Thou*. Scribner.
- Chaitin, Gregory J. (1998). *The Limits of Mathematics: A course on information theory and the limits of formal reasoning*. Springer.
- Chalmers, David J. (1996). *The Conscious Mind: In search of a fundamental theory*. Oxford University Press.
- Chopra, Deepak (2000). *How to Know God: The soul's journey into the mystery of mysteries*. Harmony Books.

- Christian, Joy (2007). Disproof of Bell's theorem by Clifford algebra valued local variables. arXiv:quant-ph/0703179v2
- Clark, Gordon H. (1996). *The Philosophy of Science and Belief in God*. Trinity Foundation.
- Cohen, William S., and Janet Langhart Cohen (2007). *Love In Black and White: A memoir of race, religion and romance*. Rowman & Littlefield.
- Collins, Francis S. (2007). *The Language of God: A scientist presents evidence for belief*. Simon & Schuster.
- Cornwell, John (2007). *Darwin's Angel: An angelic riposte to The God Delusion*. Profile Books.
- Dalrymple, Theodore (2007). What the new atheists don't see. *City Journal*.
www.city-journal.org/html/17_4_oh_to_be.html
- Davies, Paul C. W. (ed. 1989). *The New Physics*. Cambridge University Press.
- Dawkins, Richard (1982). *The Extended Phenotype*. Freeman.
- Dawkins, Richard (2nd edn. 1990). *The Selfish Gene*. Oxford University Press.
- Dawkins, Richard (2006). *The God Delusion*. Houghton Mifflin.
- De Chardin, Pierre Teilhard (1959). *The Phenomenon of Man*. Collins.
- De Chardin, Pierre Teilhard (1960). *The Divine Milieu*. Collins.
- Dennett, Daniel C. (1991). *Consciousness Explained*. Little, Brown & Co.
- Dennett, Daniel C. (1995). *Darwin's Dangerous Idea: Evolution and the meanings of life*. Simon & Schuster.
- Dennett, Daniel C. (2006). *Breaking the Spell: Religion as a natural phenomenon*. Viking.
- Dennett, Daniel C. (2007). 'God' or 'Allah'?
http://newsweek.washingtonpost.com/onfaith/daniel_c_dennett/2007/01/god_or_allah_1.html
- De Quincey, Christian (2008). Reality bubbles: can we know anything about the physical world? *Journal of Consciousness Studies*, 15 (8), 94–101.
- Derbyshire, John (2008). *Toward a Science of Consciousness*. National Review Online, April 9–13.
- Deutsch, David (1997). *The Fabric of Reality*. Allen Lane.
- Duncan, Ronald (ed. 1971). *The Writings of Gandhi*. Collins.
- Einstein, Albert (1930). Article in *New York Times Magazine*.
<http://www.sacred-texts.com/aor/einstein/einsci.htm>
- Elitzur, A., S. Dolev, N. Kolenda (eds. 2005). *Quo Vadis Quantum Mechanics?* Springer.
- Feferman, Anita B., and Solomon Feferman (2004). *Alfred Tarski: Life and logic*. Cambridge University Press.
- Feynman, Richard P. (1985). *QED: The strange theory of light and matter*. Princeton University Press.

- Fraenkel, Abraham A., Yehoshua Bar-Hillel, and Azriel Lévy (1958, 2nd edn. 1973). *Foundations of Set Theory*. Amsterdam: North-Holland.
- Gaarder, Jostein (1996). *Sophie's World: A novel about the history of philosophy*. Phoenix.
- Goldstein, Rebecca (2005). *Incompleteness: The proof and paradox of Kurt Gödel*. Norton.
- Goswami, Amit (1993). *The Self-Aware Universe: How consciousness creates the material world*. Putnam.
- Grayling, A.C. (2007). *Against All Gods: Six polemics on religion and an essay on kindness*. Oberon Books.
- Greene, Brian (1999). *The Elegant Universe: Superstrings, hidden dimensions, and the quest for the ultimate theory*. Norton.
- Greene, Brian (2004). *The Fabric of the Cosmos: Space, time, and the texture of reality*. Knopf.
- Greenfield, Susan A. (1995). *Journey to the Centers of the Mind: Toward a science of consciousness*. Freeman.
- Griffiths, Bede (1954/1979). *The Golden String: An autobiography*. HarperCollins.
- Griffiths, Bede (1990). *A New Vision of Reality: Western science, eastern mysticism and Christian faith*. Templegate.
- Harris, Sam (2004). *The End of Faith: Religion, terror, and the future of reason*. Norton.
- Harris, Sam (2006a). *Letter to a Christian Nation*. Knopf.
- Harris, Sam (2006b). *Faith won't heal a divided world*.
http://newsweek.washingtonpost.com/onfaith/sam_harris/2006/11/faith_and_an_undivided_world.html
- Harris, Sam (2006c). *God's enemies are more honest than his friends*.
http://newsweek.washingtonpost.com/onfaith/sam_harris/2006/12/gods_enemies_are_more_honest_t_1.html
- Harris, Sam (2007a). *Selfless consciousness without faith*.
http://newsweek.washingtonpost.com/onfaith/sam_harris/2007/01/consciousness_without_faith_1.html
- Harris, Sam (2007b). *God's hostages*.
http://newsweek.washingtonpost.com/onfaith/sam_harris/2007/01/women_are_property_1.html
- Harris, Sam (2007c). *The empty wager*.
http://newsweek.washingtonpost.com/onfaith/sam_harris/2007/04/the_cost_of_betting_on_faith.html
- Harris, Sam (2007d). *The problem with atheism*.
http://newsweek.washingtonpost.com/onfaith/sam_harris/2007/10/the_problem_with_atheism.html
- Harvey, Andrew (1994). *The Way of Passion: A celebration of Rumi*. Frog.

- Harvey, Andrew (1998). *Son of Man: The mystical path to Christ*. Putnam.
- Harvey, Andrew (ed. 1998). *Teachings of the Christian Mystics*. Shambhala.
- Harvey, Andrew (2000). *The Direct Path: Creating a journey to the divine using the world's mystical traditions*. Broadway Books.
- Hegel, Georg Wilhelm Friedrich (1807). *Phänomenologie des Geistes*.
www.gutenberg.org/etext/6698
- Heidegger, Martin (1927). *Sein und Zeit*. Niemeyer.
- Hitchens, Christopher (2007). *God Is Not Great: The case against religion*. Atlantic Books.
- Hofstadter, Douglas R. (1979). *Gödel, Escher, Bach: An Eternal Golden Braid. A metaphorical fugue on minds and machines in the spirit of Lewis Carroll*. Basic Books.
- Hofstadter, Douglas R. and Daniel C. Dennett (eds. 1981). *The Mind's I: Fantasies and reflections on self and the soul*. Basic Books.
- Hofstadter, Douglas R. (2007). *I Am a Strange Loop*. Basic Books.
- Honderich, Ted (1993). *How Free Are You? The determinism problem*. Oxford University Press.
- Honderich, Ted (2001). *Philosopher: A kind of life*. Routledge.
- Hooft, Gerard 't (2006). *The mathematical basis for deterministic quantum mechanics*.
arXiv:quant-ph/0604008v2
- Horgan, John (2003). *Rational Mysticism: Dispatches from the border between science and spirituality*. Houghton Mifflin.
- Horn, Robert E. (1983). *Trialectics: Toward a Practical Logic of Unity*. Out of print.
- Inwood, Michael (1997). *Heidegger: A very short introduction*. Oxford University Press.
- James, William (1902). *The Varieties of Religious Experience*. Longman.
- Jaynes, Julian (1976). *The Origin of Consciousness in the Breakdown of the Bicameral Mind*. Houghton Mifflin.
- Joyce, James (1986). *Ulysses*. Random House.
- Kant, Immanuel (1781). *Kritik der reinen Vernunft*. www.gutenberg.org/etext/6342
- Kauffman, Stuart A. (1993). *The Origins of Order: Self-organization and selection in evolution*. Oxford University Press.
- Kauffman, Stuart A. (1995). *At Home in the Universe: The search for the laws of complexity*. Oxford University Press.
- Kauffman, Stuart (2008). *Reinventing the Sacred: A new view of science, reason, and religion*. Basic Books.
- Khatami, Mohammad (2006). *Absolute truth manifests itself in diverse ways*.
http://newsweek.washingtonpost.com/onfaith/mohammad_khatami/2006/11/absolute_truth_manifests_itself_1.html

- Koch, Christof, and Giulio Tononi (2008). Can machines be conscious? *IEEE Spectrum*. www.spectrum.ieee.org/jun08/6278
- Kripke, Saul A. (1980). *Naming and Necessity*. Blackwell.
- Kripke, Saul A. (1982). *Wittgenstein on Rules and Private Language: An elementary exposition*. Blackwell.
- Kuhn, Thomas (2nd edn. 1971). *The Structure of Scientific Revolutions*. University of Chicago Press.
- Kurzweil, Ray (2005). *The Singularity Is Near: When humans transcend biology*. Viking.
- LeDoux, Joseph E. (2002). *Synaptic Self: How our brains become who we are*. Viking.
- LeDoux, Joseph E., Jacek Debiec, and Henry Moss (eds. 2003). *The Self: From soul to brain*. *Annals of the New York Academy of Sciences*, 1001.
- Lenin, Vladimir (1914–1916). *Collected Works*, Vol. 38. www.marxists.org/archive/lenin/works/cw/volume38.htm
- Lennox, John C. (2007). *God's Undertaker: Has science buried God?* Lion Books.
- Lewis, C.S. (1943/1980). *Mere Christianity*. New York: Simon & Schuster.
- Libet, Benjamin (2004). *Mind Time: The temporal factor in consciousness*. Harvard University Press.
- Lilla, Mark (2007). *The Stillborn God: Religion, politics, and the modern west*. Knopf.
- Lindley, David (1996). *Where Does the Wierdness Go? Why quantum mechanics is strange, but not as strange as you think*. Basic Books.
- Lisi, Garrett (2007). *An exceptionally simple theory of everything*. arXiv:0711.0770v1
- Llinás, Rodolfo R. (2001). *I of the Vortex: From neurons to self*. MIT Press.
- Mann, Thomas (1933–1943). *Joseph and His Brothers*. Knopf.
- Mao Zedong (1937). *On contradiction*. www.etext.org/Politics/MIM/wim/oncontradict.html
- McFadden, Johnjoe (2000). *Quantum Evolution: Life in the multiverse*. HarperCollins.
- McFadden, Johnjoe (2002a). Synchronous firing and its influence on the brain's electromagnetic field: evidence for an electromagnetic field theory of consciousness. *Journal of Consciousness Studies*, 9 (4), 23–50.
- McFadden, Johnjoe (2002b). The conscious electromagnetic information (cemi) field theory: the hard problem made easy? *Journal of Consciousness Studies*, 9 (8), 45–60.
- McGinn, Colin (1999). *The Mysterious Flame – Conscious Minds in a Material World*. Basic Books.
- McGinn, Colin (2002). *The Making of a Philosopher – My Journey Through Twentieth-Century Philosophy*. HarperCollins.

- Meacham, Jon, and Sally Quinn (2007). On Faith, A conversation on religion, <http://newsweek.washingtonpost.com/onfaith/>
- Metzinger, Thomas (2003). *Being No-One: The self-model theory of subjectivity*. MIT Press.
- Nagel, Thomas (1989). *The View From Nowhere*. Oxford University Press.
- Nielsen, Michael A., and Isaac L. Chuang (2000). *Quantum Computation and Quantum Information*. Cambridge University Press.
- Nietzsche, Friedrich Wilhelm (1909). *Also sprach Zarathustra: Ein Buch für Alle und Keinen*. www.gutenberg.org/etext/7205
- Omnès, Roland (1999a). *Understanding Quantum Mechanics*. Princeton University Press.
- Omnès, Roland (1999b). *Quantum Philosophy: Understanding and interpreting contemporary science*. Princeton University Press.
- Penrose, Roger (1989). *The Emperor's New Mind: Concerning computers, minds, and the laws of physics*. Oxford University Press.
- Penrose, Roger (1994). *Shadows of the Mind: A Search for the Missing Science of Consciousness*. Oxford University Press.
- Penrose, Roger (1997). *The Large, the Small, and the Human Mind*. Cambridge University Press.
- Penrose, Roger (2004). *The Road to Reality: A Complete Guide to the Laws of the Universe*. Cape.
- Pinker, Steven (1997). *How the Mind Works*. Allen Lane.
- Popper, Karl R. (1959). *The Logic of Scientific Discovery*. Hutchinson.
- Popper, Karl R. (1972). *Objective Knowledge: An evolutionary approach*. Oxford University Press.
- Price, Lucien (ed. 1954). *Dialogues of Alfred North Whitehead*. Nonpareil.
- Quine, Willard Van Orman (1960). *Word and Object*. MIT Press.
- Quine, Willard Van Orman (1963, 2nd edn. 1969). *Set Theory and Its Logic*. Harvard University Press.
- Quinn, Daniel (1995). *Ishmael: An adventure of the mind and spirit*. Bantam.
- Ramachandran, V.S., and Sandra Blakeslee (1998). *Phantoms in the Brain: Human nature and the architecture of the mind*. Fourth Estate.
- Ratzinger, Joseph (2007). *Jesus von Nazareth*. Freiburg: Herder.
- Rosenfield, Israel, and Edward Ziff (2008). *How the mind works: revelations*. New York Review of Books, June 26.
- Ross, J. Andrew (1996). *Lifeball. Birth of a new god*. www.andyross.net
- Ross, J. Andrew (2002). First-person consciousness: Honderich and McGinn reviewed. *Journal of Consciousness Studies*, 9 (7), 55–82.
- Ross, J. Andrew (2003a). The self: from soul to brain. *Journal of Consciousness Studies*, 10 (2), 67–85.

- Ross, J. Andrew (2003b). Business at the speed of evolution. *Internal Auditing and Business Risk*, 27 (12), 12.
- Ross, J. Andrew (2004). *Mindworlds: Consciousness and related studies*.
www.andyross.net
- Ross, J. Andrew (2005). Roads to reality: Penrose and Wolfram compared. *Journal of Consciousness Studies*, 12 (2), 78–83.
- Ross, J. Andrew (2006). Will robots see humans as dinosaurs? *Journal of Consciousness Studies*, 13 (12), 97–104.
- Ross, J. Andrew (2008). Hitting on consciousness: Honderich versus McGinn. *Journal of Consciousness Studies*, 15 (1), 109–128.
- Ross, J. Andrew (2009). *SAP NetWeaver BI Accelerator*. Galileo Press.
- Russell, Bertrand A.W. (1957). *Why I Am Not a Christian*. Allen & Unwin.
- Russell, Bertrand A.W. (2nd edn. 1961). *History of Western Philosophy*. Allen & Unwin.
- Russell, Bertrand, and Alfred North Whitehead (1927). *Principia Mathematica*, Vols. I–III, 2nd edn. Cambridge University Press.
- Sacks, Oliver (2004). In the River of Consciousness. *The New York Review of Books*, LI (1), pp. 41–44.
- Sagan, Carl (1996). The Demon-Haunted World. Science as a candle in the dark. *Headline*.
- Satinover, Jeffrey (2001). *The Quantum Brain: The search for freedom and the next generation of man*. Wiley.
- Scholem, Gershom (1954). *Major Trends in Jewish Mysticism*. Schocken.
- Scholem, Gershom (ed. 1949). *Zohar: The book of splendor*. Schocken.
- Scott, Alwyn (1995). *Stairway to the Mind: The controversial new science of consciousness*. Copernicus.
- Scruton, Roger (2001). *Kant: A very short introduction*. Oxford University Press.
- Searle, John R. (1992). *The Rediscovery of the Mind*. MIT Press.
- Smolin, Lee (1997). *The Life of the Cosmos*. Oxford University Press.
- Smolin, Lee (2006). *The Trouble with Strings: The rise of string theory, the fall of a science, and what comes next*. Houghton Mifflin.
- Spencer-Brown, G. (1969). *Laws of Form*. Allen & Unwin.
- Spotts, Peter N. (2004). How quantum physicists ‘review’ the ‘Bleep’ movie. *The Christian Science Monitor*, October 14.
- Stapp, Henry (2007). *Mindful Universe: Quantum mechanics and the participating observer*. Springer.
- Strawson, Galen (2006). Panpsychism? *Journal of Consciousness Studies* 13 (10–11), 184–280.
- Taylor, Charles (1975). *Hegel*. Cambridge University Press.

- Tolle, Eckhart (1999). *The Power of Now: A guide to spiritual enlightenment*. New York: New World Library.
- Velmans, Max (2000). *Understanding Consciousness*. Routledge.
- Watson, Lyall (1974). *Supernature: A natural history of the supernatural*. Coronet.
- Wegner, Daniel M. (2002). *The Illusion of Conscious Will*. MIT Press.
- Wittgenstein, Ludwig (1922, translated by D.F. Pears and B.F. McGuinness 1961). *Tractatus Logico-Philosophicus*. Routledge and Kegan Paul.
- Wittgenstein, Ludwig (1953, translated by G.E.M. Anscombe 1958). *Philosophical Investigations*. Blackwell.
- Wolf, Fred Alan (1981). *Taking the Quantum Leap: The new physics for nonscientists*. Harper & Row.
- Wolfram, Stephen (2002). *A New Kind of Science*. Wolfram Media.
- Wright, Crispin (1980). *Wittgenstein on the Foundations of Mathematics*. Harvard University Press.
- Yourgrau, Palle (2005). *A World Without Time: The forgotten legacy of Gödel and Einstein*. Basic Books.
- Zeh, H.-Dieter (2nd edn. 1992). *The Physical Basis of the Direction of Time*. Springer.
- Zohar, Danah (1990). *The Quantum Self*. Bloomsbury.

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