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## Science and Faith - A Personal View

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**Biographical Notes:** Bill Newsome received a Bachelor of Science degree in physics from Stetson University in DeLand, Florida, and a Ph.D. in biological sciences from the California Institute of Technology. He is currently Professor of Neurobiology at the Stanford University School of Medicine, and is an Investigator of the Howard Hughes Medical Institute. Dr. Newsome is an international leader in the fields of sensory and cognitive neuroscience. He has made fundamental contributions to our understanding of how the primate brain mediates visual perception, and is currently attempting to unravel the neural mechanisms underlying simple decision processes within the cerebral cortex. The high quality of his research has been recognized by several awards and prestigious lectureships, including the Rank Prize for Optoelectronics in 1992 and the Spencer Award for Highly Original Contributions to Neurobiology in 1994, and the King Solomon Lectures in Animal Behavior at Hebrew University of Jerusalem in 1996.

It is a privilege to contribute to this volume of the *Ellul Studies Forum*. Preparing this paper has "pushed" me more than any of the 80 or so papers I have published in my professional life, precisely because I have never before written for a public, academic readership on any aspect of religious faith. I do not, however, come to the topic completely unprepared. Across 25 or so years of adult life, I have tried to discern for myself whether there is anything in the universe worth having faith in, what it means for me personally to live in faith, and how my faith is related to all other facets of my life, including the science that I do. In a sense, then, my search for an authentic faith is as much a part of me as eating, sleeping and breathing, and it is certainly a more essential part of who I am than is the science I do.

I wish to begin with a disclaimer. I consider myself to be an expert, in the academic sense, only on the neurophysiology of visual perception, and I will have *nothing at all* to say about visual perception in this paper. My topic demands, however, that I consider the nature of reality, the nature of meaning, ways of knowing, and the foundations of ethics—and I state openly that I am an expert in *none* of these subjects. While I have little formal training in philosophical analysis, I am a philosopher in the sense that every one of us is a philosopher—in the sense that we all must get out of the bed every morning and *act* in numerous situations throughout each day. I believe that every action we take, and every decision we make, form a living philosophy in the sense that our actions imply certain beliefs about what is real and about our ultimate sources of meaning and value. This is the spirit in which I write, and this spirit is

reflected in the title I chose for this paper, "Science and Faith: A Personal View". I readily acknowledge that many readers have pondered these matters longer and more searchingly than I have. I am not writing to *instruct* anyone. Rather, I want only to share my own experience and reflections concerning the life of faith in a secular academic setting.

Many readers of this volume are probably Christians or perhaps theists of other stripes. Others are likely to be agnostic, perhaps tending toward atheism, simply because you have not been able to see your way to any form of faith that is both reasonable and nurturing in a deeply personal sense. A few readers may be strongly convinced atheists. My remarks are aimed predominantly toward that middle group—most of whom are authentic seekers—because this is the group that I seem to encounter most often in private conversations within the academic community.

I want to relate one such conversation because it captures the essence of many others I have had over the past couple of decades. When I was a junior faculty member at SUNY Stony Brook, my wife and I invited a young couple over for dinner at our house. Karen and Dan were both postdoctoral fellows in other neurobiology labs, but they loved children and did some baby-sitting for us on occasion. Karen and Dan were aware that Zondra and I were members of a local Presbyterian Church. Vaguely religious topics had cropped up in conversation among us on previous occasions, mostly concerning childhood religious backgrounds, as I recall. As fate would have it, religious matters came up during after-dinner conversation on this particular evening, and Karen finally blurted out, rather indelicately, "I don't understand how a smart guy

like you can believe in all that stuff!" Perhaps this unusually candid declaration was facilitated by the wine we had consumed during dinner, I don't know. But I relate this story because Karen's reaction is fairly common even though it is rarely expressed so straightforwardly. More often it is conveyed merely by a raised eyebrow or by a vaguely embarrassed or surprised facial expression when a friend discovers that I—a respected scientist (in some circles, at least)—am a Christian. What I would like to do in this paper is to answer Karen's question as straightforwardly as I know how, because it is fair, it is authentic, and it arises so often.

Karen's question can be answered on a number of levels. At one obvious level, I am a Christian today because I was born in the United States of America rather than in a Moslem or Hindu country. Yet many native born Americans are not Christians, so this cannot be the entire explanation. At another level, one might say that I am a Christian because I was raised in a deeply religious family. I am the son and grandson of Southern Baptist ministers, and thus am a conspicuous outlier in the community of academic scientists. Obviously, my family milieu played an important role in my spiritual development, but neither is this a completely determinative factor. The stereotype of the rebellious "preacher's kid", in fact, might lead one to expect the opposite outcome. People raised in deeply religious families go on to a wide variety of lifestyles and belief systems as adults.

Historical factors—biological, cultural and familial—influence all of us profoundly, but any of us with two wits to rub together will (or should, at least) examine and question these influences critically at some point in our lives. To some

extent then, I am a Christian today because I consciously *choose* to be. For me, the simplest answer to Karen's question is that I am a Christian because my life makes more sense to me with my faith than without it. Now I would be the first to admit that there are times when my life doesn't seem to make much sense from any point of view. But on the whole, I have not found any other system of belief—or disbelief—that accounts as well or as consistently for the world as I experience it, from deeply personal matters of ethics and hunger for meaning to my sense of awe at the physical universe.

Before getting to the heart of my remarks, I would like to clear away a bit of underbrush. When I speak with academic friends about religious faith, I often find that they have certain mental blocks that prevent them from taking the Christian faith seriously, and many of these obstacles appear to me unnecessary because they can be dealt with fairly straightforwardly. I want to mention four of them briefly, simply because I encounter them so frequently. I will not deal with any one in depth, but I hope merely to point toward ways of thinking that can perhaps defuse these issues a bit.

- 1) One obstacle is the perception that Christians, and evangelical Christians in particular, are intolerant. Claims for possession of ultimate truth are generally viewed with suspicion in academia, and attempts to make converts on this basis are viewed even more harshly. Let me state plainly that I believe in evangelism, but my model of evangelism differs importantly from other commonly encountered models. As anyone who knows me realizes, I am not out to beat anyone over the head concerning matters

of faith. On the contrary, I am actually fairly private about my faith. To use a metaphor (not original with me), evangelism, properly understood, is simply “one bum telling another bum where he can find some food”. For me, the achingly good news of God's love is most effectively offered out of a very deep sense of humility, within a relationship, and to a demonstrated need. From this perspective, faith is communicated in dialogue, arising from a sense of common humanity, not from a sense of arrogance or triumphalism. I have no problem with this sort of evangelism, either as a human being or as an academic. But let me say something further about intolerance. To some extent intolerance is a virtue. If we are *tolerant* of everything, then we *stand* for nothing. For example, Stanford University, where I am employed, has values that it espouses, including academic freedom, dialogue by reasoned discourse, and mutual respect for the diverse members of the university community, and Stanford is properly intolerant of gross violations of those values. If nothing else, the modern university is intolerant simply of intolerance! So it should not be surprising that Christians, or feminists, or scientists, or environmental greenies, to name just a few, have certain bedrock values that they refuse to compromise. All such groups are entitled to a voice in our academic communities as long as they abide by the basic rules of reasoned discourse and respect for others.<sup>1</sup>

2) A second obstacle is the perception that in terms of moral conduct, people inside the Christian community are no better, and may be worse in some respects, than people outside the community. For a community whose basic *raison d'être* is to be the hands,

the feet, and the voice of Christ in the world, this perception can be particularly damaging. I think about this issue on two levels. First, realize that Christians make no claim to be different at a fundamental human level than anyone else. We are all needy. We have all experienced the brokenness of this world in the pain that we inevitably inflict on others and the pain that is inflicted on us. Most of us have experienced despair at the way small people are damaged by the frenetic thrashings of our political and economic culture. Christians are simply a subset of ordinary people who have found a beacon of hope and light in a world that is all too often bleak. In the words of an apt but somewhat cliché-ed slogan, then, we should view the church as a "hospital for sinners, not as a hotel for saints." At a second level, however, the expectation of moral growth and leadership in the Christian community is entirely justified; most Christians I know would certainly affirm a desire to become more Christ-like as their journey of faith progresses, and that something is wrong if this is not happening, at least in some feeble way. As C.S. Lewis<sup>2</sup> has pointed out, however, the key issue is not whether some large collection of Christians is morally superior to a similar collection of non-believers. The key issue is whether each individual believer is growing in moral stature *more* than if he or she were a non-believer, and whether each individual non-believer *could grow more surely* if he or she were a believer. I am certain that the positive moral influence of my faith is real for myself and for my wife and for most of my close friends who are believers; one can only make that judgment for oneself by trying, I think. In statistics, of course, the concept I am driving at is "partial correlation", and for

those of you who speak statistical lingo, I am convinced that this effect is highly significant.

3) A third obstacle that I want to mention is the perception that the things that go on in churches are simply irrelevant to modern life, even if one is sympathetic in principle to some form of religious faith. Church gatherings are frequently perceived as little more than events for forming social and business contacts, and the forms of worship are sometimes perceived as outmoded relics of another age. While these criticisms have some truth to them, I can say emphatically that my primary experience of church is positive and is directly relevant to the cutting edge of life. The best times are usually in small group gatherings or in retreat settings. At these times I see couples on the edge of divorce, humbling themselves before God and before each other, asking for forgiveness, and seeking to heal relationships and to keep families intact. I see single mothers or single fathers trying to keep their values straight, and trying to manage disastrously demanding schedules, so that they have time and energy to be present in supportive ways for their children. I see people struggling with grievous loss or impending loss, searching with each other for strength to continue the journey, optimistically and in faith. I experience in these settings, and in corporate worship as well, clarion calls to remember who I really am, to constantly refresh my moral priorities, to be attentive to my highest intuitions, to be a servant as well as I can to my family and to those I work with each day. This is indeed food for the soul. Where do you go to get yours? I don't know how I could live without it.

4) A fourth obstacle is the perception that Christians are anti-science, and I must admit that there is some justification for this view. Every Christian should study the history of the Church's interaction with Copernicus and Galileo in the 16th and 17th centuries. As most of us know, Galileo provided the first compelling evidence that the celestial bodies in our solar system revolve around the sun rather than around the earth. While some of Galileo's difficulties arose more from palace intrigue than from theological considerations, he was nevertheless brought before the Church's Inquisition and forced to recant his beliefs, and remained essentially under house arrest for the rest of his life. It is the textbook example of how one of the greatest intellectual achievements in history was suppressed, the scientist himself persecuted, and the entire process rationalized religiously by narrow, very literal interpretations of specific passages of scripture. In our own age, a vocal segment of Christianity flirts dangerously with the same mistake by engaging in knee-jerk denunciations of biological evolution without open-minded consideration of the scientific evidence. Most Christians, however, value science deeply. One of the foremost achievements of liberal Protestantism in the United States was the establishment of our great research universities, including Stanford, and the nurture of the spirit of free inquiry that drives science today<sup>3</sup>. The founders of our great universities realized that Christians should have no fear of truth from any source. We believe that there is only one author of truth, and that is God. All truth is a gift from God. Unlike some segments of academia, however, Christians realize that the truth offered by science is limited and cannot speak to our deepest questions and hungers

concerning value, purpose and meaning. We believe in science, yes, but we believe in much more than science. Which brings me to the issues at the core of this paper: what are the proper roles of science and faith in my life or in anyone else's life? And where does the power of one end and the power of the other begin?

It seems to me that we should make at least two major distinctions in thinking about the proper roles of science and religious faith. First, I think, we should realize that science aims primarily to answer questions about *mechanism*, whereas religious faith seeks answers to questions about *purpose, meaning and value*.<sup>4</sup> Much confusion arises when we look to science for ultimate answers to our quest for meaning and value, and I will have more to say about this shortly. Similarly, painful confusion arises if we look to religion for answers about mechanism—we need only look at the example of Galileo to see this. I believe that there is no necessary conflict between the two; I view mechanism and purpose as complementing each other, not as exclusive of each other. A balanced view of the world will realize the importance of both mechanism and purpose in almost every realm of endeavor. Many readers of this paper are deeply interested in mechanistic issues. For example, we wonder how physiological events within the brain give rise to perception, memory, and learning. We are curious about the fundamental forces that bind all matter together. We ask what molecular events turn a normal cell into a cancerous one. We seek to understand how macroeconomic phenomena arise from countless microeconomic decisions made by individuals. But all of us, I think, care deeply about issues of purpose and value as well. For example, is

there any *absolute* difference between Hitler and Ghandi, or were their differences simply a matter of taste, or perhaps a matter of different gene pools competing for survival? Should our country's relationship with any other country be governed more by economic and military considerations, or by issues of human rights and social justice? What *is* justice anyway? Do the countless ethical decisions that I make during a given year have any ultimate significance, or are they essentially hollow and transient?

I can illustrate this difference between mechanism and purpose with a simple, almost trivial, example. Someone who has never before seen a computer might rightly be amazed that the letter "a" appears on the video monitor when the matching letter "a" is pressed on the keyboard. If our observer is the curious type, she would want to know all about this spectacular phenomenon. Now I could offer her two types of explanation. A mechanistic explanation would talk about the key press closing a switch, which sends a particular voltage into the CPU over a particular input line, which exerts multiple effects on myriad transistors, flip-flops, etc, and eventually causes the monitor's electron beam to excite R, B & G phosphors at specific pixel locations to create a replica of the letter "a". A purposeful account, on the other hand, would simply note that the computer is a powerful machine that can perform remarkable services for the user, but only if the user has a way to communicate effectively with the computer. The keyboard/monitor system was designed to accomplish that communication. Now these are very different accounts, but both are obviously true. One concentrates on mechanism; the other on purpose. The levels of explanation do not compete with each

other; they are complementary. The key question in any given situation is, what kind of truth are we looking for?

My point, of course, is that all of us have a stake in both kinds of questions—those of mechanism and those of purpose. We should not parse ourselves into scientific and religious communities who believe that truth lies substantially in one or the other camp. Rather, we should be clear about what kind of truth we are searching for when we ask a particular question, and then search for it in the proper place.

An important corollary to this distinction between mechanism and purpose or value, is that science cannot provide adequate grounds for ethics. Science can tell us how to build nuclear weapons, but there is no experiment I can do in a laboratory that will tell us unequivocally whether it is ever right to use them. Science can tell us how to clone an organism from one of its cells, but cannot define for us when it is right to do so. Science can show us how to create pregnancies for infertile couples, and it can show us how to terminate pregnancies. But it cannot tell us when we should or should not do either. Anyone who seeks to act ethically in the world, or to influence our political and economic culture in an ethical manner, must obviously look beyond science for guidance.

The second major distinction we should make is that science is primarily concerned with public, repeatable events whereas religious faith is often most concerned with unique events. The phenomena that science likes best are those that occur reliably given a specific set of initial conditions, and can therefore be repeated

again and again with various subtle but enlightening twists. Religious communities, on the other hand, are frequently concerned with *unique*, life-changing events that occur in the lives of individual believers, whose initial conditions can never again be replicated. Christianity, in particular, is concerned with unique events that happened 2000 years ago in the life of Jesus of Nazareth. I would argue once again that these realms of experience are not in competition, but that all of us have a stake in both. If we want to know precisely what makes a normal cell cancerous, and what we might ultimately do about it, then we have a stake in the public, repeatable world of scientific investigation. We want as many bright young people as possible manipulating cells in all conceivable ways to discern the complex chains of molecular events that lead to uncontrolled cell division. But all of us have an overwhelming interest in unique events as well. Anyone who has been a parent, especially of teenagers, knows all too well the excruciating decisions that must be made on the basis of very limited data. And once the moment of decision is past, we can never return to it. We can never start again at the same place, make a different decision, and see how it comes out. In scientific parlance, we can never do the control experiment. Although I used parenting as a specific example, anyone in an intimate relationship will find her or himself in the same boat. Decisions must be made and actions taken, on the basis of woefully incomplete knowledge— incomplete knowledge of our partner, of ourselves, and of the deepest sources of behavior of either party. We are all afloat on a sea of unique events, and we must all try to discern deep patterns and truths that lie beneath the ever-changing surface of events.

All of us have a stake in any source of wisdom, religious or otherwise, that will help us discern those truths and steer a stable course through the sea of events.

From these remarks, it should be obvious that I perceive no necessary conflict between science and faith. Science, rightly understood, has no quarrel with religious faith unless religious authorities attempt to establish by fiat "facts" concerning mechanism that are properly in the domain of scientific investigation. Similarly, religion, rightly understood, has no quarrel with science itself. Religion does, however, have a major quarrel with the many attempts in our century to establish—in our universities in particular—a specific materialistic "faith" under the guise of science. Various forms of this faith have dominated the intellectual ethos of our major research universities for half a century at least. The core tenets of this faith, or world-view, are several-fold:

1) The universe and all that is in it works entirely by blind, cause-and-effect mechanism.

2) Mechanistic explanations, based on reductionist analysis, are the surest and perhaps only road to truth.

3) Phenomena which cannot be studied and verified by scientific means are either not real, or not meaningful, or simply not worth worrying about. (As Frederick Buechner has pointed out, this seems a bit like a blind man who believes that anything that cannot be heard, touched, tasted or smelled is a figment of the imagination.<sup>5</sup>)

4) Attempts to fashion a personal life in this world must be based, in the eloquent words of Bertrand Russell, on the foundation of unyielding despair.

5) (...this one is going out of vogue faster than the rest) Advances in scientific understanding are the best hope for addressing the world's many ills.

As should be obvious by now, I have many misgivings about this particular world-view, but I will try to restrict myself to a few key observations. First, we should all acknowledge that this world-view is not science or a necessary result of science. It is indeed a specific faith, a specific interpretation of reality, arrived at by a segment of people. There is no experiment that one can do in a laboratory, and no unequivocal chain of reasoning, that can demonstrate any of these tenets to be true. Adherents to this world-view cling to it, I suppose, because it accounts for their experience of the world better than any alternative they have found. Or perhaps many cling to it simply because it represents a modern intellectual consensus, just as many academics in previous centuries adhered uncritically to theistic points of view that formed the intellectual consensus then.

My problem, of course, is that this materialistic faith does NOT account well for my experience of the world. The most deeply meaningful issues of my existence cannot be addressed on mechanistic grounds or by reductionist analysis. To give one outstanding example, how does one design a reductionist approach to the question: "Is it better to live or to die?" This is likely to be a live issue for some readers of this journal, or for some among their loved ones. I would argue that it is one of the most important questions a person can ask. Or how do we address a question that is surely a

live one for many readers: "Should I marry this person? Do we have what it takes to form a life-long bond that can endure through severe difficulties?" Or how about the question asked by many bright but disaffected high school students: "Do I want to buy in to this society and its educational, political and economic values? Is there another way?" Such questions can certainly be reasoned about, but they cannot in the end be answered by scientific method. In contrast to the materialist ethos, I would argue that the importance of any question is in general inversely proportional to the certainty with which it can be answered. Bertrand Russell urges us to address such questions of meaning from the foundation of unyielding despair. But will this really do? Or will it simply lead, in the words chosen by the organizers of the Veritas Forum at Harvard University, to more banality, more suicide, more homicide, more racial divisions and more broken relationships?

Let us make no mistake about it: the central crisis of our culture is a crisis of meaning<sup>6</sup>, and the dominant intellectual ethos of our academic communities does a paltry job of addressing the crisis. The world hungers for meaning, and our intellectual communities offer the spiritual equivalent of a stone. We need only consult many of our best scientists for confirmation of this critique. The astronomer, Stephen Weinberg, closed his widely read book, The First Three Minutes, with the observation that "The more the universe seems comprehensible, the more it also seems pointless."<sup>7</sup> In his highly acclaimed book, The Selfish Gene, the Oxford biologist Richard Dawkins concludes that all of the living, striving, loving and valuing of any human being serves only to abet one set of DNA molecules in its competition with other sets of DNA

molecules.<sup>8</sup> That's the whole ball of wax! This is the faith that is frequently presented under the guise of science; it is a faith that does not sustain, uplift or ennoble; it is a faith that I resist, both within the academy and without.<sup>9</sup>

So what does Christianity offer as an alternative? A retreat to a discredited if more cozy past? An opiate to ameliorate our pain? An altar upon which to abandon our minds in favor of dogma? A lifetime of boring church services and stifling piety? I don't think so. These certainly are traps that can be fallen into, but they can be avoided with reasonable judgment.

At its best, Christianity offers a balanced, holistic view of the universe in general, and each of our individual existences in particular. It offers a sense of awe at the majesty and intricacy of God's creation in the physical universe. It provides a deep appreciation of scientific inquiry (in one of Einstein's most memorable phrases, the process of scientific discovery is learning to think God's thoughts after him). Christianity points the way toward an ecologically sound ethic: this is not our world, it is God's—we are only stewards. It provides perhaps the best, most saving personal news that we can ever hear: that we are known and loved deeply and fully, that our highest values and intuitions are not a farce, but rather point more or less faithfully toward the essential core of reality. It frankly acknowledges the brokenness of our self-centered psyches, but offers us forgiveness and healing. It does not shrink from the pain of our existence, but points toward a man on a cross and says that no horror, however black, cannot yield some good. It offers as much challenge for the future as

any human being can embrace—to become as fully Christ-like in the time we are allotted on earth as God gives us the grace to be. It is a coherent view of existence that tolls the depths of our being, that calls out from us the very best that we have to offer. It reveals to us a world that is permeated with holiness at every turn, if only we have eyes to see it.

Charles Birch, an Australian biologist, has captured much of this vision in a memorable reflection on the book of Job.<sup>10</sup> Job, as most readers will recall, was a righteous man who lost all that he had—wealth, family, health—but sought to remain faithful to God. In the end, broken and embittered, he lashed out at God with great anger and frustration. In a dramatic passage, the Almighty finally responds to Job's ranting, confronting him with his own finitude:

Who is this obscuring my designs  
with his empty headed words?  
Brace yourself like a fighter;  
now it is my turn to ask questions and you to inform me.  
Where were you when I laid the foundations of the earth?  
Tell me, since you are so well-informed!  
Who decided the dimensions of it, do you know?  
Have you journeyed all the way to the sources of the sea,  
or walked where the Abyss is deepest?  
Have you been shown the gates of Death  
or met the janitors of Shadowland?  
Have you an inkling of the extent of the earth?  
Tell me all about it if you have!  
Who carves a channel for the downpour,  
and hacks a way for the rolling thunder,  
so that rain may fall on lands where no one lives,  
and the deserts void of human dwelling,  
giving drink to lonely wastes,  
and making grass spring where everything was dry?

Who gave the Ibis wisdom  
and endowed the cock with foreknowledge?  
Does the hawk take flight on your advice  
when he spreads his wings to travel south?  
Does the eagle soar at your command  
to make the eyrie in the heights?"

Job 38 & 39, Jerusalem Bible

In reflecting on this passage, Birch says:

Some of these questions are still questions to us, though not all. For we have more than an inkling of the extent of the earth, even of the universe. Someone has calculated the number of electrons in the universe and has come up with the round figure of  $10^{80}$ ! We have journeyed all the way to the sources of the sea and beyond to the moon. We have walked where the abyss of the sea is deepest and now we plan to dig it up. We know something of how the Ibis got its wisdom and the cock foreknowledge. We think we know something about the beginnings of the universe and the beginnings of life. But our dominant scientific-technological world view provides no framework within which we can find comprehensible answers to questions of point and purpose.

Birch then tries to imagine what God would say to the modern questioner:

Who is this obscuring my designs with his mechanistic models of the universe so that there is room neither for purpose, mind nor consciousness?  
Brace yourself like a fighter, for now it is my turn to ask questions and yours to inform me.  
Where were you at the big bang?  
How is it that out of a universe of pure hydrogen you have come into existence?  
Did life begin when the first cell came into existence or do elements of life exist in the foundations of the universe?  
How can you be so sure that all is contrivance? How can mind grow from no-mind? How can life grow from the non-living?  
Do people grow from blind mechanism? Is not a universe which

grows human beings as much a human or humanizing universe  
as a tree which grows apples is an apple tree?  
Or do you think that figs grow on thistles and grapes on thorns?  
Does not the life of Jesus tell you something about the life of the  
universe? Was he not there in some sense from the foundations  
of it all?  
You who live in rich countries, can you not see how every increase in  
your standard of living reduces that of someone in a poor  
country now, as well as threatening the survival of future  
generations?  
Who is madly Christian enough among you to cut his standard of  
living by a third for the sake of the poor?  
Do you think the world and all that is in it is simply for your use? Has  
it no other value?  
Because there are accidents and chance in the world, why do you think  
there is therefore no room for purpose? Can you not have  
both?  
And when you have analyzed life down to its molecular building  
blocks in DNA, why do you think you have discovered the  
secret of life when you have not yet discovered the source of  
love and all feeling?  
And why do you want to make of me either an all-powerful engineer  
or an impotent non-entity when I am neither?

To all of which we can only reply as Job replied:

"I have been holding forth on matters I cannot understand,  
on matters beyond me and my knowledge.  
I knew you then only by hearsay;  
but now, having seen you with my own eyes,  
I retract all that I have said,  
and in dust and ashes I repent."

Job 42, Jerusalem Bible

I hope that by now everyone is beginning to see the shape of my answer to Karen's question - "How can a smart guy like you believe in all that stuff?" I write in one sense as a successful, middle-aged neuroscientist. But in a more profound sense, I am a simple and needy human being who, like most other human beings, is trying to

figure out, in a semi-bewildered way, what sort of mess I have landed in. I am convinced—most of the time—that it is a holy mess. I struggle for coherence and consistency, and this holy view of existence is the one that accounts best for life as I experience it, both with my mind and with my heart.

One of the saints in my personal pantheon is the Christian writer and minister, Frederick Buechner. Buechner gets to the essence of this holy world-view in a memorable reflection on the creation story in the first chapter of Genesis:<sup>11</sup>

"Who knows what I have in me of the [woman and the man] who in their heyday begot me? Who knows what all of us have in us not just of our parents but of their parents before them and so on back beyond any names we know or any faces we would recognize... Who knows what we carry in us, either, from those unspeaking, unthinking creatures that slithered and crept their way through the millennia until they turned into the likes of you and me and who have never stopped speaking and thinking since? And you can carry it back farther even than that to whatever unimaginable event took place in one instant of time to bring time itself into being, and space itself, and that basic matter of which you and I and the star of Aldebaran and the tooth of the great white shark and the petal of the rose are all composed. As individuals, as a species, as a world, our origins are lost in mystery.

The passage from Genesis points to a mystery greater still. It says that we come from farther away than space and longer ago than time. It says that evolution and genetics and environment explain a lot about us but they don't explain all about us or even the most important thing about us. It says that though we live in the world, we can never be entirely at home in the world. It says in short not only that we were created by God but also that we were created in God's image and likeness. We have something of God within us the way we have something of the stars.

....I believe that what Genesis suggests is that this original self, with the print of God's thumb still upon it, is the most essential part of who we are and is buried deep in all of us as a source of wisdom and strength and healing which we can draw upon, or with our terrible freedom, not draw upon as we choose. I think among other things that all real art comes from that deepest self... I think that our truest prayers come from there

too, the often unspoken, unbidden prayers that can rise out of the lives of unbelievers as well as believers whether they recognize them as prayers or not. And I think that from there also come our best dreams and our times of gladdest playing and taking it easy and all those moments when we find ourselves being better or stronger or braver or wiser than we are."

I share Buechner's belief here, and I say this acknowledging fully the peculiar nature of religious belief, which for me at least is always composed of roughly equal parts of cognitive assent, intuition and unspeakable yearning, leavened with a dash or three of doubt. We are all probing at the edges of a very great mystery, or perhaps the best way to say it is that *we are being probed* by the greatest of mysteries. To paraphrase the Apostle Paul, now we see through the glass darkly, but we hope for a day when we see face to face.

I would like to conclude by saying to those who are trying to walk in Christian faith, I think you are on the right track, that the path you are following is the path that leads *home* in the truest sense of the word. For those who are interested skeptics—and believe me, that is all of us some of the time—I would encourage you simply to try this path and see where it leads. It can be a tough road to go alone, and finding (or forming!) a small group of like-minded travelers to share the journey is a tremendous gift. For those who disagree with everything I have said and are searching for answers to ultimate questions elsewhere, I can only say in the parlance of my teen-age sons: "Hey, that's cool, Dude!" I certainly admit that in the end, you may be right and I may be wrong. I would urge you, however, to attend closely to your "best dreams, times of gladdest playing, and those moments when you find yourself being better, stronger,

braver or wiser than you are.” The voice that rises up within us in those moments, I think, is an eternal voice that beckons us to our truest being, our most joyous selves, our ultimate destiny. And I would also ask, if you reach a point in life where the way is dark and the spiritual hunger overwhelming, remember that there is a place where you can find some food.

The path of Christ *is* a living option.

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## Footnotes

<sup>1</sup> This point is argued at length in G.M. Marsden, The Outrageous Idea of Christian Scholarship, New York: Oxford University Press. 1997.

<sup>2</sup> C.S. Lewis, Mere Christianity, New York: Macmillan Publishing. 1952.

<sup>3</sup> G.M. Marsden, The Soul of the American University, New York: Oxford University Press. 1994.

<sup>4</sup> I realize that the distinction between mechanism and purpose is not a black-and-white cleavage. Upon scrutiny, neither mechanism nor purpose is likely to remain tidily contained in its separate box. The evolutionary idea of a “niche”, for example, reaches outside the confines of “mechanism” into some aspects of “purpose”. Nevertheless, the distinction that I am making is fundamental, and it captures substantial truth about the relationship between science and religion. For present purposes, it is most important to get the primary distinctions clear; extended analysis of exceptions is beyond the scope of this paper. The view of complementarity between science and religion along the

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lines of mechanism and purpose is, of course, not remotely original with me. I follow in the footsteps of a host of others, including recently, S.J. Gould, Rocks of Ages: Science and Religion in the Fulness of Life, New York: Ballantine Publishing Group, 1999.

<sup>5</sup> F. Buechner, Wishful Thinking, New York: HarperCollins Publishers, 1973.

<sup>6</sup> See, for example, V. Frankel, Man's Search for Meaning: An Introduction to Logotherapy, New York: Simon and Schuster, 1984.

<sup>7</sup> S. Weinberg, The First Three Minutes, New York, Basic Books Inc., 1977.

<sup>8</sup> R. Dawkins, The Selfish Gene, Oxford: Oxford University Press, 1976.

<sup>9</sup> I argue vehemently here against a particular materialistic philosophy, substantially devoid of meaning, that is peddled on our campuses and in popular culture as a "scientific" world view. In so arguing, I do not mean to neglect or denigrate the many reflective academics who are sensitive to the transcendent dimension of life but are seeking patterns of meaning outside the usual religious traditions. A recent example is Ursula Goodenough's book, The Sacred Depths of Nature (New York: Oxford University Press, 1998). Ursula, in fact, has gently chided me for the "caricature" of a scientific world view presented in this paragraph. In response, I can only say that this "caricature" is very much alive and well in the corner of academia that I inhabit. I

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recently spoke with a faculty colleague at Stanford who declared his (hyperbolic) desire to “bomb” Memorial Church (a campus landmark established by the Stanford family) because it is a “monument to irrationality.” More importantly, I frequently speak with Stanford students who are grappling with this materialistic world view as the received wisdom of our academic culture; they are usually amazed and gratified to find a Stanford faculty member who will argue strongly what they already suspect – that this particular emperor is short on clothing.

<sup>10</sup> Quoted from L. Charles Birch, "Nature, Humanity and God in Ecological Perspective". Address delivered at the Conference on Faith, Science and the Future, sponsored by the World Council of Churches. Boston, MA, July, 1979.

<sup>11</sup> F. Buechner, Telling Secrets, New York: HarperCollins Publishers, 1991.