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A Reflection on Ways of Thinking
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THE QUESTION

Bill McEachron, a trustee of the church and an engineer and geologist with Amoco Oil Company stopped me after a worship service and asked, “How can I work all week long as a modern-day scientist applying all the principles I know and then stand up in church to recite ancient creeds and sing antiquated hymns that contradict what I know to be true?”

JOHN WESLEY, AMATEUR SCIENTIST

John Wesley compiled over one thousand remedies and cures in his *Primitive Physick* because he thought it was the best scientific advice on health issues that he could find. He printed it in pamphlet form and gave it to his itinerant preachers to carry with them as the third essential book for their ministry, along with the Bible and the collection of hymns. He included advice on apoplexy (“fill the mouth with salt”), nose bleeds (“hold a red-hot poker under the nose”), breast cancer (“apply red poppy water, plantane and rose water, mixed with honey of roses” and “use a cold bath daily”), consumption (“every morning cut up a little turf of fresh earth, and lying down, breathe into the hole for a quarter of an hour”), hoarseness (“rub the soles of the feet before the fire, with

garlic and lard, well beaten together, overnight”), and old age (“be electrified daily”). It may not have been great science, but it was science, nonetheless.

Of course, he was ridiculed mercilessly. William Hawes, a London doctor, took great glee in condemning Wesley as a divine who had wandered out of his depth in an alien field and was, at best, a fool and, at worst, an impediment to someone getting real medical help. What did Dr. Hawes say about Wesley’s approach to asthma? “Of all of Mr. Wesley’s remedies for convulsive asthma, powder of toad is the most curious; but it is suited to the credulity of the frequenters of the Foundery.”¹

Wesley did better than recommending powdered toad when he critiqued other peoples’ writings. In 1782, he produced “Remarks on the Count de Buffon’s ‘Natural History,’” and in it he showed his capacity and willingness to think theoretically about the created world. He first comments on the Count’s geological theories – that the earth’s surface once was soft but has hardened over time, that the seas once covered the earth, that the motion of the water has created uneven surfaces on the sea bottom, and that mountains were formed by accumulation of sediment once carried by ocean waters. Wesley calls these theories “wild and whimsical,” but “innocent.”

But he parts company dramatically over the Count’s biological theories concerning the emergence of human life that levels “man not only with the beasts that perish, but with nettles and onions.”² The ideas are utterly inconsistent both with reason and scripture, Wesley concludes, that is, both with the way we construct truth and the way that truth is handed down to us. The irrational part is that the processes of reproduction that the Count describes are not observed in nature; the unfaithful part is

that the Count's version of nature leaves no room for a Creator. It is "Atheism barefaced."

Even better than his rejoinder to Count de Buffon is his enthusiastic engagement of natural science in his introduction to, and the conclusion of, his "Compendium of Natural Philosophy." To set the stage for his collection of works by others, Wesley promises to "ascend from the consideration of man through all the orders of things, as they are farther and farther removed from us, to God the center of all knowledge."³ His plan is to move speculatively upward from man to God and practically downward from God to man.

He then begins a joyful retelling of the history of scientific thinking, compressed into four paragraphs, especially celebrating Aristotle's rescue of human inquiry from barbarism by diligently cultivating "the knowledge of nature and searching out the properties of particular things."⁴ Here is the emergence of the scientific method, the process of experimentation and observation perfected, in Wesley's judgment, by Roger Bacon.

Next, Wesley exults over the recent discoveries in his own era concerning the human body – the intricacies of the circulatory system, the realization that all animals are generated from eggs, and the perfecting of procedures for the transfusion of blood. With exclamatory praise he celebrates the discoveries concerning both the human body and of other animals made possible by the discovery of the microscope.

He shows great interest in the new information about plants, stones, metals, minerals, and fossils. The art of chemistry has been cultivated to such an extent that we are learning with greater accuracy the properties of all things, he insists. But nothing,

Wesley asserts, is more important than the study of the lodestone. The charting of the magnetic field, first sensed by Pliny, led to the development of the compass, and now with careful study, he tells the reader, the needle seldom points due north but varies east or west “in a fixed and regular order.”⁵ The compass brought order into an uncertain world by helping humans to navigate on a global scale.

The making of glass, the discoveries about earth, water, fire, and air, the barometer, the thermometer, the air-pump -- all were miraculous discoveries that thrilled Wesley. He was curious about the new techniques to desalinate sea water, the development of gunpowder, and the light emitted by phosphorus.

And at the other end of the continuum from the internal workings of the body’s circulatory system was the beautiful simplicity of the universe. “The telescope (invented by Galileo) has discovered many stars unknown to the ancients, together with the nature and motion of the planets, both primary and secondary. By this also have been discovered the spots on the sun, the inequality of the surface of the moon, the nature of the galaxy, or milky way, and many other particulars relating to the heavens.”⁶

After all of this, Wesley raises a caution in his introduction to which he will return in the conclusion to his compendium. Given all of these great advances in science, the one area beyond reason and experimentation is the nature of God and the human soul. This can only be drawn from the oracles of God.

When Wesley begins his concluding chapter, he produces an enormous list of questions yet to be answered by science. Admitting the “littleness of human knowledge,” he wonders, how far does the universe extend? Where are the limits? What are comets? Of what does the sun consist? Is it fluid or solid? What is light? Does it flow in waves

like a river or is it like particles impelled by the sun? What is electricity? Is elasticity essential to air? What power is there in the evaporation of water?

After posing over one hundred questions, none of them rhetorical but all of them worthy of scientific inquiry, Wesley raises the question of the “soul.” First, he asks about animals. “If they are not mere machines, if they have either sensation, or knowledge, or memory, or a principle of self-motion, then they are not mere matter; they have in them an immaterial principle. But of what kind? Will it die with the body or not? Is it mortal or immortal?”

And then he brings it home to human beings. “Where is the soul lodged? In the pineal gland? The whole brain? In the heart? The blood? In any single part of the body? Or, is it all in all, in every part? How is it united to the body? What is the secret chain, what the bands, that couple them together?”⁷

After asking more questions about the body, Wesley asks, what is sleep? What is dreaming? What is death? When do we die? He concludes that God reveals to us as much as we need to know for our present or eternal happiness, but God withholds from us full knowledge, lest we be proud.

So, when Wesley insisted that reason must be a critical part of one’s faith and that all irrational religion is false religion⁸, he was speaking from his own immense curiosity about the world around him. To ask questions and to seek answers through observation and experimentation was not a threat to his faith, but rather a stimulus. He studied the discoveries of his day, tried to assimilate them, and sought to share with his Methodists, most of them unschooled, the best of current knowledge. Yet, he did not believe that everything could be defined and understood by the scientific method. There were truths

that the scripture contained that were beyond testing, there were verities preserved by tradition that ought not to be forgotten, and there were insights accessible only through Christian experience that must be honored.

THE DOMAINS OF THINKING

While John Wesley accepted scientific inquiry and theological reflection to be compatible, even mutually reinforcing when there were coincidental conclusions, he maintained the commonplace division of labor: science was to answer the question of “how,” religion the question of “why.”

This discreet separation of the domains of thinking remains a popular construct even today. Langdon Gilkey, who was a revered professor of theology at the Divinity School at the University of Chicago during the latter half of the 20th Century, put it this way when he appeared as an expert witness in the “Creationism Trial” in Little Rock, Arkansas, in 1981. “Science seeks to explain sensory experience, facts that can be shared by everyone anywhere or any place, facts available to anyone by ‘looking’ or observing – that is to say, objective, sharable, external, and repeatable facts or experiences. . . Religion is interested in a different level of experiences and in different sorts of facts: experiences of the world as a whole, its order or beauty, its meaning or lack of meaning.”⁹ Here he is claiming the “inner life” as religious territory – responsibility, conscience, right and wrong, guilt, anxiety, meaninglessness, despair, trust, new life, release, wholeness, centeredness, forgiveness, peace, and ecstasy. “Science moves entirely in the sphere of objective, public experience; religion is more apt to point to special, inward, unusual, shattering, or healing experiences.”¹⁰

Gilkey, with his hair in a ponytail, an earring in one ear, and a chain of wooden beads slung around his neck, looked a lot like Willie Nelson and often was mistaken for him in airports. He said that sometimes he would have to sing a few bars in order to persuade people that he was not the country singer. He looked even less likely as a key witness on the stand in the Arkansas courtroom. The fact that he was a theologian who sided with the American Civil Liberties Union against the creationists puzzled many who did not understand the landscape of religious thinking. If he was a Christian, the unknowing secularist concluded, then he must be for the teaching of the literal biblical rendering of creation as science in the public schools.

Even his son's teachers at the progressive Laboratory School at the university one day wrote a letter to advise him that they were about to teach the prevailing scientific views of the origins of life and that they hoped he would be tolerant. He wrote back a treatise on the complementarity of religion and science that the teachers found extraordinarily enlightening and encouraged him to publish it. He then had to school them on the liberal tradition of the Divinity School and that what he wrote had been published in a hundred variations before.

A great challenge for Christians in the United States today is to disabuse the skeptics and dismissive critics of the notion that Creationism and Intelligent Design are normative Christian beliefs. There is a peculiar gullibility among American Christians that makes these pseudo-sciences seem plausible, and there is an eager antagonism within the secular circles that leads to a quick rejection of the Church being relevant to anything, especially science.

So, it was important for Gilkey to testify on behalf of progressive religious thought, and part of his strategy was to invoke the separate domains of thinking, science asking “how,” religion asking “why.” He explained to the court, “Science and religion present to us very different forms of speaking or thinking, very different sorts of models or theories.” Science, in short, is secular, Gilkey said, and must, by definition, omit any references to a God or any divine being or intention. Such an omission is a concession on the part of science, he suggested, not a repudiation of religion. “The fact that science omits God is a result of the limitation of science, not its atheism: Science is limited to finite causes and cannot speak of God without making God into a finite cause.”¹¹

And it was on that point that he skewered the creationists for being heretics. The ACLU lawyer asked, “Professor Gilkey, the creator, you say, is necessarily God, can only be God – the God of the Bible, the God who loves us and saves us. Is there any point in these proceedings where you have seen this denied?”

“Oh, yes,” he replied. “Now mind you, I am sure that they have done it innocently, not knowing what their words mean. But the fact is, (the proponents of Creation Science) have in their presentation of the case come very close, yes, very close indeed, to the first, and worst, Christian heresy!” To which the lawyer responded in well-rehearsed horror, “My gracious, that’s awful! What do you mean, professor?”

Gilkey went on to explain that the creationists were trying to separate the “creator” of their theory from the religious being of the scriptures who made the covenant with Israel and later with Christians through Jesus Christ. In their attempt to make their theory non-religious they, in effect, were positing two gods, exactly what Marcion was doing in the late 2nd Century. And by doing that they have reduced the God of the

Christian faith to a finite cause.¹² It proved to be an awful moment, indeed, for the creationists, who ultimately lost their case.

A subsidiary conclusion that Gilkey drew from his Arkansas experience was that the expert scientific witnesses, almost to a person, lacked any sense of the history of their own discipline. The fact that someone can be trained in a narrow range of a scientific specialty, while assuming that the discipline is independent of the rest of the culture and is simply an accumulation of objective knowledge, leaves them vulnerable to becoming fundamentalists on their own way. Most of the scientists testifying on behalf of Creation Science, PhD's all, had no sense of the history of science. In contrast, theologians and clergy trained in seminaries have a much better sense of the history of religions and where their own traditions fit. It is not enough simply to know “the logic and assumptions of the scientific method but also the relation of scientific knowledge to other modes of knowing: to art, morals, social and psychological theories, philosophy, and religion.”¹³

Gilkey's retelling of the Arkansas trial of a quarter of a century ago is an excellent example of the “two domain” approach to relating science and religion. A recent expression of it came from Martin Nowak, Professor of Mathematics and Biology at Harvard, when he spoke at the Divinity School there as part of the Evolution and Theology of Cooperation project. He said, “Science is no replacement for religion because we are interested in many questions which are not scientific. For example, what is the purpose of my life? Where do I come from? Where will I go? Everybody has these questions either consciously or subconsciously.” The need for cooperation is evident. “Scientists should admit that science does not provide any evidence against

well-formulated theology. On the other hand, religion should not oppose scientific progress.”¹⁴

But, “not so fast,” says J. Robert Nelson. In fact, he and the World Council of Churches said it a few years before Gilkey’s presentation at the 1981 trial. “To say that science asks ‘how’ and religion asks ‘why’ is a misleading and erroneous simplification of their distinctiveness. To observe that science is the realm of reason and religion the attitude of nonreasoning belief is not only to distort reality but to deceive and fortify prejudices against one or the other.”¹⁵

Now, “nonreasoning belief” is not a fair description of the religious realm, but the admonition not to oversimplify the distinctiveness of these two domains of inquiry is useful. There are several ways of connecting the two beyond simply demarking “how” and “why.” At their 1979 conference on “Faith, Science, and the Future” those who gathered under the auspices of the World Council of Churches delineated five possible ways in which science and religion can relate: 1) mutual exclusion: dealing with separate dimensions of reality and experience; 2) mutual exclusion: seeing the same realities in different ways; 3) interacting approaches to the same realities; 4) mutual dialectical interaction: keeping separate identity; 5) possible integration: complementarity by absorption of higher synthesis.¹⁶ In a detailed description of each of these five possibilities, Nelson said that the “two domains” approach can fall into any of the first three ways described but that the study committee clearly preferred number 4 as the most promising position.

But the fifth position is vigorously being debated, at least among scientists. Stuart Kauffman, the theoretical biologist from the University of Calgary, in the same Harvard

project as Nowak, has begun to use God language because he sees evolutionary creativity and traditional sacred categories as naturally linked. “It is our choice whether we use the God word or not. I choose to. I do for simple reasons. I want to try to find a third way between atheism based on reductionism and religious fundamentalists.”¹⁷

Beyond baptizing current scientific theories with God’s name, Paul Davies is imagining a more complete synthesis. Davies, the British-born cosmologist who recently moved to Arizona State University to establish a research institute, believes that the search for a unifying law in physics is leading scientists into the area of addressing “why” questions. They are too important to leave to theologians. How did the laws of physics come to be? Are they the ultimate set of laws? Or are they just effective at low energies or in our region of the universe?

Davies acknowledges that there has been a separation of powers between science and religion, “non-overlapping magisterial,” to use Stephen Jay Gould’s phrase. “In the past, the underlying laws of the universe were regarded as simply off-limits as far as scientists were concerned. The job of the scientist was to discover what the laws were and work out their consequences, but not to ask questions like, why those laws rather than some others? But I think we’ve moved on since then. Are we to suppose that these laws were magically imprinted on the universe at the moment of the big bang for no particular reason and that the form they have has no explanation?”¹⁸

Davies is interested in leaving room for God in his thinking, but it is not a God that is recognizable from the scriptures or from traditional theology. It might turn out to be a better God, a more relevant God in our 21st Century scientific world, but it might turn out simply to be another form of an old heresy.

THE DIRECTIONS OF THINKING

When John Wesley introduces his “Compendium of Natural Philosophy” he says that he is thinking in two directions: ascending from humans to God and descending from God to humans. And throughout his practical ministry he did both. He championed the primary evidence of reason and experience, thinking upward from lived reality to an understanding of God. And he honored scripture and tradition as revealers of established truth, thinking downward from God’s decrees to human apprehension. However, it can be claimed that his bias was in favor of the former. Wesley’s core assumption was that we have no innate idea of God. We form our understanding of God indirectly, based on our experience of the world and human life.¹⁹ Randy Maddox summarizes, “(Wesley) repeatedly commented that the anthropomorphic descriptions of God in Scripture were metaphors, conforming to human limitation. When dealing with more central attributes like love and justice, he took up the language of analogy, for here there was a correspondence to human realities.”²⁰

In effect, the tension between thinking in two directions, upward and downward, lay behind Bill McEachron’s question, “How can I be a scientist and a confessing Christian?” His scientific discipline had required him to start down here where we live, observing, measuring, and hypothesizing. If he were to declare a truth beyond his verification, it would have to grow out of a logical extension of what he knew for sure. But the Church, in calling him to stand and recite “The Apostles’ Creed,” for instance, was asking him to profess something handed down “from on high,” disconnected from, and alien to, the conclusions he had reached on his own.

Do we think from lived reality toward belief, or do we think from received belief and conform reality to fit? Now, there is a danger in moving in either direction. There is a cartoon which shows two goldfish swimming in a bowl, and one says to the other, “Of course, there is a God. Who else do you think would change our water?” Perhaps a right conclusion - there is a God, but the evidence is too puny to support it. The danger in the other direction is what lies behind the falsehood of Creationism and Intelligent Design. If someone takes Chapter 1 of the Book of Genesis to be a literal, historical description of the creation of the world and the universe in which it exists, then all sorts of “facts” of life have to be altered to fit the conclusion. Geological evidence plainly seen in the Grand Canyon slice of the earth’s surface must be explained away. Dinosaurs must exist on earth simultaneously with humans and a theme park needs to be constructed to portray it (seeing is believing, in that case).

When God is projected as a loving God, then all sorts of bad things must be reinterpreted to fit the divine profile. And if part of that personality requires that sin be punished in demonstrable ways, then maladies in peoples’ lives most likely will be explained away as evil people getting what they deserve.

Certainly complicating the issue, and not a new question at all, is the basic issue, “What constitutes reality?” Is there an absolute, objective reality that is given to us and we are incrementally uncovering it as our scientific skills mature (the downward direction of thinking), or are there multiple realities from which we construct a realm of truth with which we can live and in which we find meaning (the upward direction of thinking)? Is God a given or a construction?

There is a post-modern take on reality that does not require objective truth in order to make sense of life. I talked with an architectural student who, when I asked him what he was studying currently, answered, “Deconstruction.” I asked him if in the architectural world that was tantamount to “demolition.” I would be wary of living in a building designed by a deconstructionist, but for him his work was very real.

The juxtaposition of different realities has been described dramatically by George Johnson in his book, *Fire in the Mind*. Johnson is the science writer for the New York Times, and he uses as his stage the land just north of Santa Fe, New Mexico. On the tabletop of the Pajarito Plateau stands Los Alamos. Here is the sacred shrine of Western physics, the home of the ghosts of Robert Oppenheimer, Hans Bethe, Edward Teller, Richard Feynman, Enrico Fermi, and Niels Bohr. Here a complete reality has been described, consisting of fission cross sections and the hydrodynamics of spherical imploding shock waves, says Johnson.²¹

In contrast, living at the bottom of the butte in the shadow of Los Alamos are the Tewa Indians, descendents of the lost tribes of Anasazi, in San Ildefonso Pueblo. This is the center of their universe, situated among the four sacred mountains demarcating the edges of the world in the four directions – Sandia Crest (Turtle Mountain) to the south, Chicoma Peak (Obsidian Covered Mountain) to the west, Canjilon Peak (Hazy Mountain) in the north, and Truchas Peak ((Stone Man Mountain) in the east. And according to their reality situated in this mountain-rimmed world, it is necessary for them to dance the world back into balance to guarantee the change of the seasons and the return of the sun.²²

Now, whose reality is “right,” and how do we know? Both are thinking upward, from experience to truth, but their starting and ending places are very different. Contradictory? Not necessarily. Compatible? Not if there is no common ground except the geographical proximity itself. Coexistent? Yes, obviously, that is Johnson’s story to tell.

But, lest we assign to the Tewa Indians an artful (yet fanciful) construction of reality and to the indigenous population of the laboratories at Los Alamos a more dependable reality based on “hard science,” Johnson claims that the particle physicists and cosmologists have created their own comforting creation myth. “Long ago, in the early moments of the big bang, temperatures were so high that all forces, all matter, blended into one. But then the universe cooled and the symmetry broke, the one superforce splintering, one by one, into four separate forces, each with its own quirks and idiosyncrasies. From a primordial gas of quarks, electrons, neutrinos, and photons more solid stuff formed: quarks congealing into protons and neutrons, which united to form atomic nuclei; electrons uniting with the nuclei to make hydrogen and helium atoms; the hydrogen and helium atoms combining to make stars, the generators of the heavier elements. Then atoms joined with other atoms to make molecules, and finally, at least in this corner of the universe, cells, organisms, and societies haphazardly evolved – more shattered symmetries, shards from the explosion of a perfect world.”

This creation myth may not have the majesty of Genesis 1 or the earthiness of Genesis 2, but it concludes with an almost “east of Eden” truth claim. If the creation had remained perfect, human life would not exist. An absolute balance between matter and antimatter would have left an undifferentiated world without us in it. But because of the

broken symmetry matter wins out, if only by a billion and one quarks to a billion quarks. A random fluctuation, the pure scientist must say, leads us to live not in a perfect garden (a perfection so hostile that it would not have supported life), but to live at all, even in this world of jeopardy.²³ To which Kauffman and Davies and others might respond, “A random fluctuation? Is there no meaning to be found in it?”

If we think from divine truth down to human circumstance, we must make everything fit within a closed system of belief. When we think from our lived experience up to overarching truth, we must test a multitude of realities, and sometimes hold more than one reality being true at the same time.

The “fire in the mind” of Johnson’s title? It is the “raging cerebral fire” to find order in the midst of chaos. To make sense of our world, to find meaning in our lives. Johnson draws this conclusion: “We perform these heroic feats of imagination to preserve what we believe in our heart of hearts to be true – that the universe is ultimately as symmetrical as the music we make, the diamonds we carve, something harmonious to the human mind. But when we look out on the messiness of creation, when we consider our limited vantage point, our blindered senses and brains, then this belief that we can penetrate the veil of contingency and happenstance and behold a crystalline perfection begins to seem like the deepest of faiths.”²⁴

THE LANGUAGES OF THINKING

I visited a colleague of mine in the Bahamas, and he drove me from the waterfront of Nassau over the bridge to Paradise Island. Philip pulled up to the toll booth on the far side of the bridge where there was a sign reading, “Cars \$2.00.” He rolled down the

window and said to the woman in the booth, “That’ll be fifty cents, right?” And she said, “Yes,” and took his coins and lifted the gate. Once we pulled away I said, “Philip, just what went on back there? The sign said two dollars, you offered fifty cents, and she took it and let you through.” Philip looked at me and said, “You have to realize that in the Bahamas sometimes there is more truth in poetry than precision.”

More truth in poetry than precision. When John Wesley said that all of our God language is either metaphor or analogy because our human comprehension is too limited to truly know God, he was saying the same thing as my host. All human language about that which is beyond our minds must be poetical.

In truth, we use many languages each day. We speak scientifically when we are use mathematical formulations to make our point, technically when we take our car in to be serviced, and poetically when we try to express our innermost feelings. We might speak in code if we are text-messaging or trying to keep our interchange inaccessible to outsiders. We “speak” non-verbal languages, too. Our body language sends messages, music conveys meaning that often goes beyond words, and touch, smell, and color all have ways of expressing what is on our minds.

And all forms of our multiple languages keep evolving, even scientific language, perhaps the most conservative of all. Werner Heisenberg wrote in 1958 about the inadequacy of the language of physics to express the new concepts that were emerging in the 20th Century. Once the theory of relativity threw out the conventional understandings of space and time, there was no new language accompanying it that could talk about the new situation. “The old language was based upon the old concept of space and time and this language offered only unambiguous means of communication about the setting up

and the results of measurements. Yet the experiments showed that the old concepts could not be applied everywhere.”²⁵

His answer was that scientists must resort to mathematics as the common language for expressing new ideas with complete precision. That, and also rigid forms of logic which, at their root, are mathematical constructs. Any information, he suggested, could be expressed in mathematical form.

But Ian Stewart, Professor of Mathematics at the University of Warwick, writing forty years later, is not so sure. In his book, *Nature's Numbers*, Stewart writes, “I don't want us to replace current scientific thinking, which has brought us a long, long way. I want to develop something that complements it. One of the most striking features of recent mathematics has been the emphasis on general principles and abstract structures – on the qualitative rather than the quantitative.”

He repeats Ernest Rutherford's observation that “qualitative is just poor quantitative,” wanting to be sure that mathematics does not become too soft-focus. But says Stewart, “We will never understand the growth of a tree or the dunes in the desert if we try to reduce all of nature's freedom to restrictive numerical schemes.”²⁶

What Stewart would like to see is a new kind of mathematics, one with intellectual rigor but also with more conceptual flexibility. How about a mathematical theory of form, perhaps called “morphomatics,” he suggests, something that would counteract the tendency these days to reduce all scientific language to some derivative of DNA descriptions?

Morphomatics? Stewart at least proves that theologians are not the only ones who come up with bad names for good ideas, but he also tells those of us residing outside the

scientific community that the language inside is changing as the discovered realities change. And so it is also with those within the religious community. As we employ the languages of our disciplines in order to think more clearly, we find that the thinking changes the languages we use.

The useful truth is that all of us are multilingual. When we want to describe a rose botanically, we talk about petals, pistils, stamens, and stems. When we want to rhapsodize about a rose we can recite that “a rose is a rose is a rose” (the logic being irrefutable but also irrelevant, in such a case). When we want to “say” something romantic we show up at the door with a dozen roses.

When James Cronin, the Nobel Prize-winning astrophysicist, toasted his daughter and son-in-law at their wedding reception, he did not fall back on mathematical formulas or intricate theories to express his joy. He lifted his champagne glass and began to talk about Cupid shooting an arrow into the air. In that grand moment poetry and mythology trumped science.

Martha Nussbaum, a professor of law and ethics at the University of Chicago, insists that storytelling is essential to the meting out of justice. She assigns her students to read Sophocles, Plato, Seneca, Dickens, Swift, and Whitman. A lack of sympathy in the courts is due, she argues, to “an excessive reliance on technical ways of modeling human behavior, especially those that derive from economic utilitarianism.”²⁷ The antidote? She draws an insight from Walt Whitman. “Storytelling and literary imagining are not opposed to rational argument, but can provide essential ingredients in a rational argument.” It is through storytelling that we can begin to imagine the situation of someone different from ourselves.²⁸

It is significant that the scriptures, as we have received them from the Jewish and Christian communities, contain at least four stories of creation, none of them scientific, all of them poetic, but each told from a very different viewpoint. In Genesis 1 we have the God's-eye view of what happened on each of the six days of creation, with humans, male and female together, created as God's crowning glory. It all is decreed as being very good. In Genesis 2 we get the down-to-earth story of Adam and Eve in the garden, with all of their faults, foibles, and pettiness. Here is a mundane explanation of our tribulations as humans, but there also is something comforting about knowing that we are made of the very stuff of the earth. Holding the two stories together, we learn that we are a little lower than the angels but that we have feet of clay.

A third story introduces a co-creator in the person of Sophia, a radical departure from the Hebrew myths. Proverbs 8 talks unashamedly about male and female partners who work conjointly to make the world come into being. And then the fourth story, the first chapter of the Gospel of John, takes flight in Grecian grandeur to express a cosmic view that brings to bear the revering of beauty inherent in that language.

Imagination, then, may be the common factor that holds all of our various languages together – scientific, technical, poetic, codified – verbal and non-verbal. For expressing ourselves and describing our world ultimately is an act of imagination. We can give voice to the many realities that we experience, but no one language will carry the full weight of human experience. Those devoted to the religious enterprise must know that they do not have privileged access to the truth of the world just by invoking God's name. Likewise, scientists cannot hoard the truth as if it were something to be

confined to a laboratory and parceled out only to the elite in small pieces wrapped in inscrutable equations.

THE ANSWER

So, Bill, your question is a good one, especially for a Wesleyan who can appreciate John Wesley's fascination with the scientific discoveries of his time. The fact that you are participating in the discoveries of our time ought to make his curiosity all the dearer. Your work during the week with Amoco and your worship life in church need not be separated. Though they are not predicated on the same questions and procedures, they are related. That especially is true if you see both enterprises as starting with you, here and now, and working toward what truths seem to hold constant, if not in all situations, then at least in most. And the glory of the tension between science and religion is that we are encouraged to learn new languages, several languages, all which give rise to new thoughts that far outstrip what we thought we knew. Imagination turns out to be a divine gift, not a flight of fancy but a flight heavenward. Enjoy the trip; it is as close as we are going to get to the truth in this life.

ENDNOTES

1. Heitzenrater, Richard P., *The Elusive Mr. Wesley*, vol.2, Nashville: Abingdon Press, p.131.
2. *The Works of John Wesley*, Third Edition, Grand Rapids, Michigan: Baker Book House, Reprinted 1978 from the 1872 edition, Vol. XIII, p.452.
3. *Ibid.*, p.482.
4. *Ibid.*, p.483
5. *Ibid.*, p.486
6. *Ibid.*, p.487
7. *Ibid.*, p.497
8. *The Works of John Wesley*, Vol. XIV, p.354.

9. Gilkey, Langdon, *Creationism on Trial: Evolution and God at Little Rock*, San Francisco: Harper & Row, Publishers, 1985, p.108-109.
10. Ibid., p. 109
11. Ibid., p.115
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