

Science, Ethics, and Praxis: Getting it All Together

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It was late evening and some students approached me with a question. They had heard my lecture earlier that day at the symposium on *God, the Environment, and the Good Life* at the University of New Hampshire. "How do you as a scientist, a student of the Scriptures, and someone directly involved in town politics, put it all together?" We moved to a table, talking. I reached for a napkin on which I sketched a triangle.

Science and Ethics

Since my youth I have kept my science and theology together. The main reason was that, in the Reformed Tradition, I had not only learned that study of science and theology was respectable and legitimate, but also that science and our religious faith were compatible. Science was esteemed, as were the arts, politics, and the trades. Also esteemed was our "rule of faith and practice" -- the Bible-- and the theological research and scholarship that enriched our understanding of Scripture. Integrity was the mark of both the Creation and the Word, and also of the relation between them, the reason being that both shared the same Author-- the Author who was persistently just and perpetually consistent.

In my youth I learned that there is great concordance between the world of nature and the Bible-- the two great books enjoyed by my culture. How the natural world works (studied by science) was in accord with what is right (studied by theology and illuminated by the Bible). And so for these students, I wrote "Science" at one corner of my triangle, and "Ethics" at another. Parenthetically, under "Science" I added the explanatory question, "(How does the world work?)," and under "Ethics," "(What is right?)."

As a child I developed a deep interest in reptiles-- an interest that continued through my teens and on into my graduate studies. And it was from experience gained while researching the physiology and behavior of reptiles on the desert of southern California that the label I would now write for the third point of the triangle began to emerge. I was doing my work for my doctorate in zoology at The University of Michigan which brought me to the desert in search of my subject, the Desert Iguana. It was on the desert that I learned something about our species that previously had not struck me: we have immense capacity for taking action on things and in areas we know next to nothing about. Uninformed by science and ethics, or even eschewing scientific and ethical knowledge, we can and do act upon the world in ways that have great consequence, and often do so not only in ignorance, but also in cultured ignorance.

I had selected a site for study of the environmental physiology of Desert Iguanas on the alluvial fan at the mouth of Deep Canyon-- a dry river delta-- several miles to the east of Palm Springs. Once in a century or so, this canyon would discharge floodwaters from torrential rains in the San Jacinto Mountains, spouting them onto this delta which fanned the waters out to the desert beyond. However, almost always it was as we observed it then: a quiet, dry, gently sloping plain, overlooking the desert below. Its infrequent deluges were mutely announced by an Indian village whose remains rested high and off to one edge out of flood's reach-- a proclamation of the wisdom of an earlier people. Water's arid absence here did not diminish the ominous reality displayed in this sloping plain. Had a torrential rain dumped onto the mountains above, we might have been swept off our study site by its floodwaters.

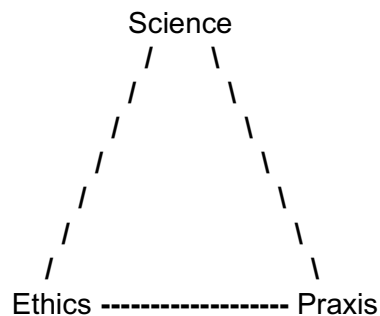
As my wife and I studied how the Desert Iguana survived on this hot dry delta, we were startled one day by jobbers who parked their tank truck near us, sprinkled water on the desert for a few days, laid down a concrete slab on the wet soil, and built a house on it. It was one of many buildings that would be placed on this plain. House would be added to house, and lot to lot, until the city of Palm Desert would cover most of the sloping delta. At some point during the next few decades my study site would become the approach lane to a drive-in bank and, unfortunately the abundant population of Desert Iguanas there would be reduced to a single example, housed in the local zoo.

Below my study site toward Palm Springs, a second surprise of similar nature came when men and machines arrived and leveled some shifting sand dunes. The areas they flattened were sprinkled from tank trucks, followed by a similar slab-laying and house-building sequence. The flattened dunes had been subdivided by lines scribed on a plat map and were transformed into a housing "development" that was acclaimed by a leading national magazine. Driving my car through drifting sand on paved streets I had come upon a brand new ranch-style house, cracked in the middle with one end hanging downward into a wind-scoured hole. At a nearby residence a neighbor complained that Riverside County did not send plow trucks frequently enough to keep streets clear of drifting sand. People settling there acted as though they did not know where they had chosen to live. Their subdivision stood in blowing winds and the shifting dunes of the open desert. In their air-conditioned oblivion did not know where they lived.

Human knowledge about how the world works (science), and about what is right (ethics), had little effect on what people did there in the desert. The dune levelers had transformed dirt-cheap land into high-priced lots. Human settlers to whom they sold knew nothing of shifting dunes or alluvial fans. Neither did their interior quarters of house and cars permit them to know the desert's searing heat. The "developed" landscape stood in mute testimony to cultured ignorance of these home bodies. Living there, they did not know where they lived. Desert residents, they knew nothing of the science and ethics of desert life. Their praxis was divorced from desert knowledge and wisdom.

The Science-Ethics-Praxis Triad

On third corner of the napkin I wrote "Praxis," adding beneath it the parenthetical question, "(What then must we do?)." Now completed, the triangle's corners were occupied by "Science," "Ethics," and "Praxis." This triad would provide the framework for addressing the students' question.



Today, as I write, I am not in the desert of southern California nor in the beech-maple forest of New Hampshire, but on a glacial drumlin in Waubesa Wetlands-- a large marsh 4 miles south of Madison, Wisconsin. Here we have our home, and here I study creatures whose watery habitats I and my neighbors have worked to save. While my lizard study site now is covered by a city where people live alone in the land-- absent the desert creatures-- my wetland study site remains occupied by all kinds of native wetland creatures. Surrounding it is my Town of Dunn,

whose land stewardship plan helps people understand, serve, and keep this and other wetland ecosystems. The town stewardship plan encourages restoration of the landscape, protects agricultural lands, and strives to transmit an intergenerational heritage of homes and habitats for the animals, plants, and people that live here. We live largely in accord.

While house-building on slabs poured onto desert sands alerted me to the question of praxis, it mainly was service to my wetland and my town that brought the third point to that napkin. As organizer and steward of the Waubesa Wetlands Scientific and Agricultural Preserve, and as Supervisor and later as Chair of the Town of Dunn, I came to realize that science and ethics do no earthly good unless put into practice. I also came to realize there what I had learned on the desert: praxis uninformed by science and ethics usually creates more problems than are solved.

The science-ethics-praxis triad depicts a way of thinking, with each of its three points illuminating and illuminated by the other two. It represents a way of life in which accomplishment is sought in the company of scientific and ethical knowledge. It pictures a sustained and dynamic interaction among science, ethics and praxis as requisite for integrity in individual lives, in community, and in the wider world. While partly achievable at each corner of the triad, integrity is not fully achievable apart from the dynamic interaction of all three. Pursuit of integrity through this dynamic interaction enables development of a worldview that degrades neither us nor the world-- a worldview that can achieve and sustain quality in land and life.

But WILL these three operate in dynamic interaction? Will they interact in ways that will preserve and achieve integrity of human life and environment? That all depends upon what we know and understand and know about ourselves and the world (science), what we believe we should do (ethics), and what we in fact do and how we respond to our successes and failures (praxis). Beyond this, it also depends upon our will. Will we, if given the opportunity, strive for a quality world?¹ If so, what enables or motivates us to do so? What would make us strive relentlessly for integrity in land and in life?

Taking Actions on Things for Which There is No Theory

While having operated in ways consonant with this science-ethics-praxis triad for decades, I had not articulated it until that meeting around a table in New Hampshire. Having acted upon it for decades, it was only then I became aware of how to represent what I had been doing. Thus, this experience not only provided a framework, but also taught me that I had been engaged for a long time in something I have not previously articulated-- something for which I did not have a framework or theory.

Operating without a framework or theory was something about which I became even more aware following a lecture I gave to the Land Resources class at Au Sable Institute on the Town of Dunn in 1995. I had told the class how when, as Town Chair, I and my fellow citizens had developed and implemented a land stewardship plan, and how after a couple of decades of work our town was granted the *Renew America* Award for growth management in 1995. Earlier that summer at Au Sable I had presented a series of ethical principles in my opening stewardship address based on research into biblical texts. I had presented these principles as basic for developing a responsible caring for the land and its life.

And now, following my lecture on the Town of Dunn, I was being asked by the Land Resources class, "How were you able to implement these obviously biblical principles in the public square-- in your Town of Dunn?" I was surprised by my answer, and so was my audience. I told them that when I held town office, I had not yet articulated these principles. They had not occurred to me and I had not sought to discover them. I explained that it was only after concluding my terms of political office in Dunn that I spelled out these principles, not before. In exploring my surprising answer, I also observed that what we did in the Town of Dunn, however, nevertheless was fully consistent with the principles that I had not then articulated.

As I answered the questions from this class, I recalled the comment made to me by a pastor friend a few years earlier, "Cal, you are doing things for which we do not yet have a theory." He had told me then what I was better coming to realize now. I had been operating more out of who I was rather than from any systematized body of knowledge. Of course, this again raises the question of how we can act upon something we have not articulated.

A Matrix of Telling Stories and Singing Songs

The answer lies largely, but not exclusively, in storytelling and songsinging. It is as much the story telling and song singing, as it is analytical scientist, that provides the explanation. My youth was immersed in story-telling and song-singing, but not merely this. The stories we were told and the songs we sung were all tied together to form a system of remarkable consistency and integrity. Nearly every story and song was consistent with every other. All had their interconnections with other stories and songs. Story-telling and song-singing, with cross-referencing integrity, formed a major part of the matrix from which my work developed then and continues to do even now. Theory and framework, when they come, frequently follow praxis, not the other way around.

Beyond these stories and songs was their exposition. It was exposition by my elders, and it took two forms: word and deed. Accompanying the stories and songs were expository sermons-- scholarly analyses in which the content and meaning of these songs and stories were unpacked, elaborated, analyzed, explained. For me there were 1000 of these from ages 6 to 16, all delivered with deliberate consistency and integrity. Stories and songs there were but explained and elaborated in every scholarly way. Beyond oral exposition was exposition in deed: the expository lives of people had developed and grown from the matrix to publish in land and life. These people themselves became living stories and songs: lives to be told and work to be sung. They lived their lives as psalms.

Stories, songs, and their exposition in word and deed-- these, interactively and with consistent mutual integrity, formed the matrix from which we grew our lives. It was from this matrix that praxis emerged for me. Beginning in the confined world of my childhood home, it gradually extended outward to neighborhood children and families, customers on my newspaper route, activities at church and school, and the work of learning and teaching in the university. From there, the matrix fed and nourished my praxis in the Town of Dunn and into the wider world.

How can one practice things for which one does not yet have a theory? From a consistent and integrated matrix of stories and songs and their scholarly and practical exposition.

Of course, in discovering this, I have come to wonder as a scientist, "What is the nature of this system of stories and songs? What is the nature of their scholarly and practical exposition?" In attempting to answer these questions, I come to a difficulty that is particularly troublesome. How I describe, in our time, what I believe, without being misunderstood or thought to be freakish? Shouldn't we simply leave matters of belief undiscussed in our pluralistic society? Should I take the risks associated with describing something of the matrix from which I have developed?

The Problem with Religion, Birthplaces, and Birthdays

My colleague at the University of Wisconsin-Madison, Raymond Kessel, has helped me here very much, unbeknown to him. He is a geneticist, and also counsellor in human genetics. In a seminar we presented together some years back, he told the audience that understanding genetics helps greatly to reduce and remove prejudice among people. Explaining what he meant, he told us that knowing how a person's genetic blueprint was responsible for their form, the shape of their ears, the color of their skin, and so forth, that one would understand much of how people look and act and through this also discover that it is no one's fault that they looked ugly or beautiful, were tall or short, yellow or black. None of us is able to select our parents or

our genetics. And so we find it possible not to blame people for their looks and form, but can appreciate and respect them for what they are.

His observation is important to us here because our cultural inheritance is in many ways similar to our genetic inheritance. As for our genetics, who and where our parents were when we were born, whether they were rich or poor, Buddhist or Hindu, bond or free. Each of us comes with a genetic and cultural heritage we ourselves have not selected. Each of us enters the stream of life when and where we enter it and each of us stands at a different point in this stream, having entered at a different time and place through no decision of our own. So none of us need be ashamed of where we entered. Thus it is not our doing that the family into which we are born is religious or irreligious, Islamic or Christian. Respecting this fact helps very much in our listening and learning. We learn from this why people can not be like we are. It enables us to develop understanding rather than prejudice.

It is with these considerations that I open the topic of religion. We know that the word, "religion," has come into disfavor in many quarters with good reason. We associate it today with murderous cults, bigotry, brutal warfare, oppression, and doctrinaire imposition. "If that is religion," we say, "we will have nothing to do with it." But, nevertheless, we might well have been brought up within a religious family and through them have gained a religious heritage. Rather than immediately judging those whose upbringing has been different from our own, we can, given our understanding of the nature of genetic and cultural heritage, we can move to understand what we see, and the people of various faith and nonfaith we meet. In the process we will come to wonder about the very word itself, the word, "religion."

Religion and Ties that Bind

Etymologically, this word means something quite different than what is implied by the troubling associations that circumstances have compelled us to attach to it. Apparently derived from the Latin, *religio*, it has to do with tying things together. A religion is a system whose components are tied together to form some kind of consistent integral whole. Religions, of course, may differ significantly one from another in kind and in quality. This Huston Smith recognizes in his scholarly comparative study of religions. A low quality religion, for example, might degrade both its adherents and the world in which they live. An example is one that might exterminate their own members in the name of their religion. Yet a child born into such a religion must still be appreciated. By contrast, a high quality religion is a system of thought and action in which everything is held together in some kind of consistency and integrity for the purpose of helping people live rightly in the world. And a child born into such a situation also must be appreciated. As people grow up and mature they may shift from low to high quality, or vice versa, for various reasons. But no matter, each kind and quality of religion affects how one lives in the world. None must be discounted.

Religion is not something irrelevant to human life-- no matter what its label or whether it even is given the label, "religion." More than being relevant, physicist Max Planck would say that it is necessary. In his 1937 essay on religion and science he writes, "People need science in order to know; religion in order to act." He explains that in everyday life that "our decisions, made by our will, cannot afford to wait until we gain complete knowledge or become omniscient. Instead, "We need a basis for acting in the world." As we "...stand in the stream of life, surrounded by a multitude of demands and needs" he reminds us that we often must "make quick decisions or immediately implement certain plans."

Secular philosopher, Max Oelschlaeger, supports Planck's assertion when he writes: "I think of religion... as being more important in the effort to conserve life on earth than all the politicians and experts put together... My conjecture is this: *There are no solutions for the systemic causes of ecocrisis, at least in democratic societies, apart from religious narrative.*"²

Now it may be true that some among us would prefer not to identify our system of beliefs as

"religion," but that does not diminish the claim that it is our system of beliefs that enable us to act. No matter what name we apply to it, not many would deny the need for "a system of thought and action in which everything is held together in some kind of consistency and integrity for the purpose of helping people live rightly in the world." And this of course will soon bring us back to one such system-- the one that was my own cultural inheritance. But before it does, we must enter briefly the world of paradigms.

Paradigms as Examples

It was immediately following an oral examination of a graduate student that I found another way to get at the interesting idea of acting on things before one has a theory. The candidate had been asked to define the word, "paradigm." His answer raised additional questions that drove me to pick up my copy of Thomas Kuhn's *Structure of Scientific Revolutions* when I returned home, and there to find the author responding, in the second edition, to the criticism that he had used the word, "paradigm" in the first edition 22 different ways. While not agreeing with all 22, Kuhn nevertheless affirmed that he had used the word in several different ways. There was the definition that sees it as a kind of mindset out of which a culture operates-- the definition we use when talking about "paradigm shifts." But there also is the definition in which "paradigm" is seen as "an example"-- an example from which theory can be developed-- an example for which there might yet be no theory.

My immediate response to this finding, in December and January, 1995-1996 to begin writing a book on *The Dunn Paradigm*. In it I told a number of stories based upon my experience in Town office. Following each, I mined each for their lessons and principles. But now I can take this further. I now feel enabled to investigate the matrix within which my life is rooted and has developed as a paradigm-- as an example from which principles can be identified and theory be constructed.

My attempt to distill and systematize the principles out of which I believe I operate may of course be counterproductive in the sense that those who do not take seriously the belief system from which I have been operating might cast off the principles I will articulate. But before doing so, the wise reader will recognize not only that every one of us operates out of some kind of matrix-- identified or not-- and that the stories and songs from which these principles are distilled are themselves likely to be far more universal than a particular tradition. If such stories and songs are derived from the common quest of all human beings to discover how the world works, what is right and what must be done, then principles expressed in the words of one belief system cannot simply be put aside because of their mode of presentation. Underlying the matrices there likely are truths greater than the forms available for their expression.

A Matrix of Stories, Songs, and Exposition

The matrix of story, song, and exposition with which I entered the stream of life was one that respected science heartily, yet did not hold up science as arbiter of absolute truth. It promulgated a system of ethics, yet continuously reformed this system as knowledge from the Word and the world increased and was clarified.³ It sought to bring goodness and integrity to human life, yet did not pursue happiness or other possible by-products of goodness and integrity for their own sakes. It sought wholeness and care for Creation, yet was not afraid to take from Creation what was needed to sustain life and achieve contentment.

In time, I found this matrix of story, song, and exposition consistent with what is socially and ecologically necessary to live rightly on earth. Moreover, I also found that it contained the resources necessary for developing new insights for unanticipated conditions in the world and human society. I also learned that much of this is consistent with Judaic and Islamic belief systems and other monotheistic traditions that respect the biblical heritage. That is all to the good of course and even to be expected, since religions should in many ways be consistent with the way the world works.

What then is the nature of this system of stories and songs? In my tradition, it is a system whose primary source of stories and songs is the Bible, comprised of the Hebrew Bible (or Old Testament) and the New Testament. It is a compilation of 66 books the set of which has been broadly identified as authoritative over the centuries. One of these is the book of Psalms-- a collection of 150 songs to be sung-- a song book that sometimes is published separately as a "Psalter" translated from the good Hebrew poetry in which it has been written into good poetry in English and hundreds of other languages, and accompanied by music. Being models of biblical concreteness and exemplary poetry, the Psalms usually are accompanied by other songs from across the ages, that "in spirit, form, and content" are positive expressions of "Scripturally religious thought and feeling" and represent "the full range of the revelation of God."⁴ Most of the other 65 books are story books that report historical events in the life of the early Jewish people and during the early years of Christianity, through which an understanding of what is necessary for living rightly in society and the wider Creation are conveyed. Besides stories the collection includes the wisdom literature, of which the Book of Proverbs is perhaps best known, a set of New Testament letters to new Christian churches, and at the start of the collection, the five books of Moses-- the Torah, or Law-- that put forth in story form God's expectations for the early Hebrew people and their successors.

The scholarly exposition of these stories and songs, and of the other books, is a highly disciplined matter, conducted by highly educated scholars who are governed by the discipline of hermeneutics-- rigorous methods of interpretation befitting a collection of books that most biblical scholars treat as holy and inspired by God.⁵ The practical exposition of these stories and songs in my youth came from the lives of the people around me, many of which were exemplary in putting into practice upgrading the poor, visiting the sick, rehabilitating prostitutes, singing in prisons, doing honest work, and tending the land.⁶

Derivatives from the Matrix

What comprises the matrix of stories, songs, and their expositions with which I entered the stream of life? What principles can be derived from it? How does it motivate people to strive for a quality world? In exploring these questions, we can use this matrix as a paradigm-- in the sense of its being an example-- and work to derive from it some general teachings and principles. In so doing, I run the risk of misidentifying what these principles are. Nevertheless, here are the principles I believe can be derived from the matrix.

Authorship and Integrity of the Cosmos.-- There is but a single just and loving Author of all--that-is, including temporality and chance, who creates all creatures good and declares all creatures good.⁷ This means that (1) all things are consistent, justly ordered, and have integrity, whether apparent or not. This is captured by Einstein, for example, in his exclamation, "Raffiniert ist der Herrgott, aber boshaft ist er nicht!"⁸ This also means that (2) the just and discoverable consistency within the world makes science possible, including description of principles and laws.

The Creation and all the Creatures Belong their Creator.-- Neither the Creation, nor any of its creatures belong to human beings, but to their Creator, who cares for all of it. The earth is the Lord's and everything in it; the sea belongs to God together with all the creatures it contains.⁹ Thus, (3) the things of the land and things of the sea are held in trust and must be treated with respect and cared for. Beyond the other creatures, we also belong to God, who cares for us and thus, (4) we need not be anxious about our lives or sustenance.

Intrinsic Worth of the Creatures.-- The divine authorship of all things means that (5) creation and all its constituents have intrinsic worth apart from their utility or perceived pleasantness, and thus the whole Creation and every creature must be respected.¹⁰ God loves the world and cares for it,¹¹ and imaging God, (6) we must love the world and take care of it. This also means that (7) while we may make responsible use of the fruits of Creation we may not destroy its fruitfulness. Thus, (8) the prerogative of destruction and extinction lies only with the Creator,

not with people.¹² And, (9) while we may employ creatures in responsible ways, we must not press them relentlessly;¹³ (10) we must assure repeated opportunity for the creatures of earth to enjoy their rest and Creation's blessings.

Human Beings as Part of Creation.-- Because we also are creatures, (11) we human beings do not stand apart from "environment" but are part and parcel of the whole.¹⁴ The whole is sometimes identified as the Creation. The integrity of the whole Creation must be upheld and cherished, not just some favorite "parts." Furthermore, (12) as the rest of Creation serves us so should we serve the rest of Creation.¹⁵ Con-service and con-servation is the rule.

Human Beings as Imagers of God.-- Yet, (13) as con-servants, human beings have a special honor not shared with any other creature, of imaging God's love to the world.¹⁶ It is a special honor with special responsibility. God is love; and we should image God's love. Imaging the Creator's love and care for the creatures prevents us from abusing them, compels us to have concern for the biosphere, and brings us to protect and conserve it. Thus, (14) human beings are called to be earth keepers.¹⁷ Earthkeeping is an important way of imaging God's love for the world.

Penalty for Eschewing our Reflection of God's love.-- While expected to image God's love for the world out of love and gratitude to God, (15) people who despise God's laws and destroy the earth, themselves will be destroyed.¹⁸ Yet (16) people who believably practice God's love for the world will have everlasting life.¹⁹

Creation is a Powerful Teacher.-- The just and discoverable consistency of Creation is rooted in God's order and thus (17) for those who study the works of Creation, Creation is a powerful teacher. Thus, (18) having been created justly and rightly by God, the Creation is in many ways normative, and its normativity can inform its observers not only how the world works, but also how the world ought to work.²⁰ For example, the Creation teaches in many ways that biological death is basic to life, contrary to what one might surmise if they separated themselves from observing natural ecosystems function.

Mindless Selection Should be Constrained in Mindful Society.-- Darwinian principles may operate creatively and thoughtlessly in the biotic world. However, (19) when thoughtless Darwinian principles are found to operate in the thoughtful world of human beings, they must be constrained and even countered in order to assure sustainability of human society and the Creation.²¹ Thus, (20) fitness of human culture comes not from seeking the supremacy of the individual, race, nationality, sex, or economic status but from service to Creation and human community. Self-interest is always secondary to seeking God's rule. Therefore (21) whatever benefits accrue to one's self come as by-products of seeking the integrity of the whole Creation.²²

Contentment Rather than Maximization is a Worthy Goal.-- Given God's ownership of all things, and human responsibility to God, (22) the aim of human beings and human societies should be contentment, not the maximization of things, or pleasure, or accomplishments.²³ Thus, (23) whatever things we hold in trust, whatever joy we experience, and whatever accomplishments we achieve should come as by-products of our loving and self-giving service. Contentment is worth far more than money, possessions, wealth, or fame-- to us and to the rest of Creation.

Truth Must Always be Sought.-- In whatever human beings do or say, in whatever they learn and teach about the world and how things ought to be, and in whatever actions they take in the world, (24) human beings must consistently be truthful and seek the truth, never misrepresenting the world nor what is happening within and to the world.²⁴ Thus, (25) when there is danger people must sound the alarm;²⁵ when there is no danger they must not be alarmist. When there is need for prophets they should prophesy; (26) when corrective actions result from the warning of prophets, the prophets should rejoice and not grumble.²⁶ Moreover,

(27) when there is need to know people should seek to find out. And, (28) when there is confusion people should seek to clarify. Thus, (29) truth must be defended and consistently be sought.

The Whole Creation Praises its Creator.-- Finally, (30) the whole Creation gives testimony to God's divinity and everlasting power.²⁷ Thus, (31) in our life and work we should help others share in receiving Creation's testimony and (32) we should assure that the testimony of the creatures and of Creation to their Creator is not diminished or extinguished.

Striving for a Quality World

Early on we asked, "If given the opportunity, would we strive for a quality world? If so, what is it that would enable or motivate us to engage and persist in such seeking? What would make us strive relentlessly for integrity in land and in life? The answer to this basic question is implicit in my "derivatives from the matrix" set forth above. Yes, we would strive for a quality world if, among other things we believed that we should be about imaging God's love for the world in our life and work. Our motivation would come from pursuing and restoring the integrity in response to its Author, whose integrity we wish to image with our own. We would strive for this integrity out of gratitude to the Author and Finisher of our own worthfulness. We would do so in order to return to our Creator the worth-ship that flows from our God-given worthfulness. Striving for a quality world would for us be a kind of grateful worship.

Getting it All Together

"How do you as a scientist, a student of the Scriptures, and someone directly involved in town politics, put it all together?" the students had asked me. With a triangle sketched on a napkin, with the words "Science," "Ethics," and "Praxis" written on its corners, I explained how I kept science, ethics, and praxis in dynamic interaction. Action flowed from combining scientific and ethical knowledge. With this sketch I had begun an heuristic exercise that did not end that evening but would continue to what I would articulate here: my own development grows from a matrix of story telling and song singing that, together with their expository proclamation in word and deed, provided the basis for action-- action that could be taken even when there was yet no framework or theory. Thus my science does not operate on its own, but in tandem with what I have described here as quality Religion, defined as a system of thought and action in which everything is held together in some kind of consistency and integrity for the purpose of helping people live rightly in the world. High quality religion, so defined, is not only relevant, but necessary for living rightly on earth. Quality *religio* is needed for "getting it all together."

Endnotes

1. I am reminded here of what a colleague of mine recently said: "I sure am glad I was not a friend of Jesus Christ. I have no doubt he was a very good person, who did everything as it should be done. And that is just my problem. If I were his friend I just could not have the fun I am having now."
2. Oelschlaeger, p. 5.
3. A phrase I learned in my youth that expresses this is *Ecclesia reformata semper reformandum est* -- "the reformed church is ever reforming."

4. Statement of Principle for Music in the Church, In: *Psalter Hymnal*. Grand Rapids, Michigan: Board of Publications of the Christian Reformed Church, 1976, p. v.
5. An illustration of the level of scholarship involved here is my discovery only in his recent obituary that the pastor of my youth had his Doctorate of Theology from the Free University of Amsterdam. As a youth I had never known this, but his expository sermons, with their rich reference to Hebrew and Greek texts (as well as to Dutch) said as much.
6. See for example the article on Neerlandia ****
7. Genesis 1; Apostles' Creed; Nicene Creed; Athanasian Creed; Belgic Confession, Article II. See *Psalter Hymnal: Doctrinal Standards and Liturgy of the Christian Reformed Church*, Grand Rapids, Michigan: Board of Publications of the Christian Reformed Church, or Philip Schaff, 1931, *The Creeds of Christendom*, Grand Rapids, Michigan: Baker. "Beautiful Savior" *Psalter Hymnal* No. 373; "Hallelujah, Praise Jehovah" *Psalter Hymnal* No. 304.
8. "Subtle is the Lord, but malicious is he not." For further insight on this, see the frontispiece in the book by Abraham Pais, *'Subtle is the Lord' The Science and Life of Albert Einstein* (Oxford: Oxford University Press).
9. Psalm 24:1; Contemporary Testimony. "This is My Father's World" *Psalter Hymnal* No. 374; "The Earth and the Fullness with Which it is Stored" *Psalter Hymnal* No. 41.
10. Cf. Job 38-40; Psalm 104. "Hallelujah, Praise Jehovah" *Psalter Hymnal* No. 304.
11. John 3:16; Psalm 104; "My Soul, Bless the Lord!" *Psalter Hymnal* No. 206; "Hallelujah, Praise Jehovah" *Psalter Hymnal* No. 301; "Joy to the World" *Psalter Hymnal* No. 337.
12. Cf. Job 40:19.
13. Cf. Exodus 20:10; Deuteronomy 5:14.
14. Genesis 2:7. "The Tender Love a Father Has" *Psalter Hymnal* No. 205.
15. Genesis 2:15.
16. Genesis 1:27.
17. Genesis 2:15.
18. Revelation 11:18.
19. John 3:16.
20. Gordon Spykman, *Reformational Theology: A New Paradigm for Doing Dogmatics*.
21. Cf. Matthew 6:33.
22. The word sometimes used for the wholeness and integrity that should be sought is "the Kingdom of God," and has its expression, for example, in Matthew 6:33.
23. I Timothy 6:6-21. "On the Good and Faithful" *Psalter Hymnal* No. 7.

24. Proverbs 14:5; John 8:31ff. "Who, O Lord, with Thee Abiding" *Psalter Hymnal* No. 20; "Grace and Truth Shall Mark the Way" *Psalter Hymnal* No. 45; "Be Thou My Judge" *Psalter Hymnal* No. 47.

25. Ezekiel 33:1-6.

26. Jonah 3-4.

27. Psalm 19:1; Acts 14:17; Romans 1:20. "O Lord, Our Lord, in All the Earth" *Psalter Hymnal* No. 12; "The Spacious Heavens Declare" *Psalter Hymnal* No. 28; "The Heavens Declare Thy Glory" *Psalter Hymnal* No. 31; "Sing a New Song to Jehovah" *Psalter Hymnal* No. 190; "Unto Go Our Savior" *Psalter Hymnal* No. 192; "Exalt the Lord, His Praise Proclaim" *Psalter Hymnal* No. 282; "Give Thanks to God for Good is He" *Psalter Hymnal* No. 284; "Great is Thy Faithfulness" *Psalter Hymnal* No. 408.