

The Narrative Form of Genesis 1: Cosmogonic, Yes; Scientific, No

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A basic mistake through much of the history of interpreting Genesis 1 is the failure to identify the type of literature and linguistic usage it represents. This has often led, in turn, to various attempts at bringing Genesis into harmony with the latest scientific theory or the latest scientific theory into harmony with Genesis. Such efforts might be valuable, and indeed essential, if it could first be demonstrated (rather than assumed) that the Genesis materials belonged to the same class of literature and linguistic usage as modern scientific discourse.

A careful examination of the 6-day account of creation, however, reveals that there is a serious category-mistake involved in these kinds of comparisons. The type of narrative form with which Genesis 1 is presented is not natural history but a cosmogony. It is like other ancient cosmogonies in the sense that its basic structure is that of movement from chaos to cosmos. Its logic, therefore, is not geological or biological but cosmological. On the other hand it is radically unlike other ancient cosmogonies in that it is a monotheistic cosmogony; indeed it is using the cosmogonic form to deny and dismiss all polytheistic cosmogonies and their attendant worship of the gods and goddesses of nature. In both form and content, then, Genesis I reveals that its basic purposes are religious and theological, not scientific or historical.

Different ages and different cultures have conceptually organized the cosmos in different ways. Even the history of science has offered many ways of organizing the universe, from Ptolemaic to Newtonian to Einsteinian. How the universe is conceptually organized is immaterial to the concerns of Genesis. The central point being made is that, however this vast array of phenomena is organized into regions and forms--and Genesis 1 has its own method of organization for its own purposes--all regions and forms are the objects of divine creation and sovereignty. Nothing outside this one Creator God is to be seen as independent or divine.

In one of the New Guinea tribes the entire universe of known phenomena is subdivided into two groupings: those things related to the red cockatoo, and those related to the white cockatoo. Since there are both red and white cockatoos in the region, these contrasting plumages have become the

focal points around which everything is conceptually organized. The religious message of Genesis relative to this "cockatoo-cosmos" would not be to challenge its scientific acceptability, but to affirm that all that is known as red cockatoo, and all that is known as white cockatoo, is created by the one true God.

Or, one may take a similar example from traditional China, where all phenomena have, from early antiquity, been divided up according to the principles of Yang and Yin. Yang

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is light; yin is darkness. Yang is heaven; yin is earth. Yang is sun; yin is moon. Yang is rock; yin is water. Yang is male; yin is female. It would be inappropriate to enter into a discussion of the scientific merits of the Chinese system relative to the organization of Genesis 1; for what Genesis, with its own categories, is affirming is that the totality of what the Chinese would call Yang and Yin forces are created by God who transcends and governs them all.

There are certain uniquenesses in the 6-day approach to organizing the cosmic totality, spacially and temporally, but the--point of these uniquenesses is not to provide better principles of organization, or a truer picture of the universe, in any scientific or historical sense. It is to provide a truer theological picture of the universe, and the respective places of nature, humanity and divinity within the religious order of things. In order to perform these theological and religious tasks, it was essential to use a form which would clearly affirm a monotheistic understanding of the whole of existence, and decisively eliminate any basis for a polytheistic understanding.

The Cosmogonic Form

The alternative to the "creation model" of Genesis was obviously not an "evolutionary model." Its competition, so to speak, in the ancient world was not a secular, scientific theory of any sort, but various religious myths of origin found among surrounding peoples: Egyptian, Canaanite, Hittite, Assyrian, Babylonian, to name the most prominent. The field of engagement, therefore, between Jewish-monotheism and the polytheism of other peoples was in no way the field of science or natural history. It was the field of cosmology which, in its ancient form, has some resemblances to science, but is nevertheless quite different.

Given this as the field of engagement, Genesis 1 is cast in *cosmological* form--though, of course, without the polytheistic content, and in fact over against it. What form could be more relevant to the situation, and the issues of idolatry and syncretism, than this form? Inasmuch as the passage is dealing specifically with origins, it may be said to be *cosmogonic*. Thus, in order to interpret its meaning properly, and to understand why its materials are organized in this particular way, one has to learn to think *cosmogonically*, not scientifically or, historically--just as in interpreting the parables of Jesus one has to learn to think parabolically. If one is especially attached to the word "literal," then Genesis 1

"literally" is *not* a scientific or historical statement, but is a cosmological and cosmogonic statement which is serving very basic theological purposes. To be faithful to it, and to faithfully interpret it, is to be faithful to what it literally is, not what people living in a later age assume or desire it to be.

Various patterns, themes and images used in Genesis 1 are familiar to the cosmogonic literatures of other ancient peoples. To point this out does not detract in the least from the integrity of Genesis. Rather, it helps considerably in understanding the peculiar character and concern of this kind of narrative literature. And it indicates more clearly where the bones of contention are to be located, and what the uniquenesses of the Genesis view of creation are.

The act of creation, for example, begins in Genesis 1:2 in a way that is very puzzling to modern interpreters, yet very natural to ancient cosmogonies: with a picture of primordial chaos. This chaos--consisting of darkness, watery deep and formless earth--is then formed, ordered, assigned its proper place and function, in short, cosmocized. Chaos is brought under control, and its positive features are made part of the cosmic totality.

If one is determined to interpret the account as a scientific statement, then one would need--to be consistent--to affirm several undesirable things. There is no scientific evidence whatsoever, whether from geology or astronomy, that the initial state of the universe was characterized by a great watery expanse, filling the universe. Nor is there any evidence that the existence of water precedes light (day 1) and sun, moon, and stars (day 4). Nor is there any evidence that the earth in a formless state precedes light (day 1), or sun, moon and stars (day 4). On the theological side, one would also be affirming--if this is to be taken completely literally--that water is co-eternal with God, since nowhere does the account specifically speak of God as creating water. Day 2 refers to water as being separated by the creation of the firmament, and Day 3 only speaks of water as being separated from the earth in order that the formless earth may appear as dry land.

The only viable alternative is to recognize that Genesis 1 is intentionally using a cosmogonic approach, and to reflect on

the logic of the account in its own cosmological terms--not in *geological* or *biological* or chronological terms. The account is not pre-scientific or un-scientific but non-scientific--as one may speak of poetry (unpoetically) as non-prose. This does not mean that the materials are in any sense irrational or illogical or fantastic. They are perfectly rational, and have a logic all their own. But that logic is *cosmological*, and in the service of affirmations that are *theological*.

So the issue is not at all, How is Genesis to be harmonized with modern science, or modern science harmonized with Genesis? That kind of question is beside the point, if by the question one is proposing to try to synchronize the Genesis materials with materials from the various fields of natural science: biology, geology, paleontology, astronomy, etc. That would presuppose that they are *comparable*--that they belong to the same type of literature, level of inquiry, and kind of concern. But they do not. Trying to compare them is not even like comparing oranges and apples. It is more like trying to compare oranges and orangutans.

The questions then, are: Why is this cosmogonic form being used, and how does a cosmogonic interpretation make sense of the passage?

Like anything else in biblical literature, the cosmogonic form was used because it was natural, normal and intelligible in that time period. For some, it has been an offense to call attention to ancient Near Eastern parallels of the Genesis materials. This approach has appeared to undermine acceptance of the Bible as a unique vehicle of divine revelation, Yet the Bible, obviously, does not speak with a divine language--which, to say the least, would be unintelligible to all. The biblical authors necessarily used the language forms and literary phrases immediately present and available in Israel, which included materials available through the long history of interaction with surrounding peoples. They did not use a whole new vocabulary, or fresh set of metaphors and symbols, suddenly coined for the purpose or revealed on the spot. When one speaks of the Word of God, one must be careful not to suggest by this term that what is being delivered is some sacred language, complete with heavenly thesaurus and handbook of divine phrases, specially parachuted from above.

Jewish scripture abounds in literary allusion and poetic usage which bear some relation, direct or indirect, to images and themes found among the peoples with which Israel was in

contact. An analogy may be drawn from contemporary English usage which contains innumerable traces of the languages and literatures, myths and legends, customs and beliefs, of a great many cultures and periods which have enriched its development. Thus one finds not only a considerable amount of terminology drawn from Greek, Latin, French, German, etc.--including the terms "term" and "terminology"--but references derived from the myths, legends, fables and fairy tales of many peoples: the Greek Fates, the Roman Fortune, the arrows of Cupid, Woden's day and Thor's day, and even Christmas and Easter.

The issue, then, is not where the language (Hebrew) and certain words and phrases came from, but the uses to which they are put, and the ways in which they are put differently. The cosmogonic form and imagery, in this case, is not chosen in order to espouse these other cosmogonies, or to copy them, or to ape them, or even to borrow from them, but precisely in order to deny them. Putting the issue in terms of "borrowing" or "influence" is to put matters in a misleading way. Various familiar motifs and phrasings to be found in surrounding polytheistic systems are being used, but in such a way as to give radical affirmation to faith in one God, a God who transcends and creates and governs all that which surrounding peoples worship as "god."

Such a God, furthermore, is not only transcendent but immanent in a way that the gods and goddesses could not be. These divinities were neither fully transcendent nor fully immanent, for all were finite, limited, and localized, being associated with one aspect and region of nature. The gods and goddesses of light and darkness, sky and water, earth and vegetation, sun, moon and stars, each had their own particular abode and sphere of power. One or another divinity, such as Marduk of Babylon or Re of Egypt, might rise to supremacy in the pantheon and be exalted above every other name. But they were still restricted and circumscribed in their presence, power and authority.

The biblical affirmation of One God is decisively different from all finite and parochial attributions of divinity. In the words of the Apostle Paul, this God is "above all and through all and in all" (Ephesians 4:6). The very fact that God is "above all" makes possible a God who is at the same time "through all and in all." Radical immanence presupposes

radical transcendence. At the same time all things are in God, for apart from God they have no being; they do not exist. As Paul also says, citing a Greek poet: "He is not far from each one of us, for 'In him we live and move and have our being' (Acts 17:28).

Genesis 1 is, thus, a cosmogony to end all (polytheistic) cosmogonies. It has entered, as it were, the playing field of these venerable systems, engaging them on their own turf, with the result that they are soundly defeated. And that victory has prevailed, first in Israel, then in Christianity, and also Islam. and thence through most of subsequent Western civilization, including the development of Western science. Despite the awesome splendor and power of the great

empires that successively dominated Israel and the Near East--Egypt, Assyria, Babylon, Persia, Greece and Rome--and despite the immediate influence of the divinities in whose names they conquered, these gods and goddesses have long since faded into oblivion, except for archeological, antiquarian or romantic interests. This victory belongs, in large part, to the sweeping and decisive manner with which the Genesis account applied prophetic monotheism to the cosmogonic question.

The Plan of Genesis 1

How, then, does an understanding of this cosmogonic form--as radically reinterpreted in Genesis--help in understanding the organization and movement of the passage?

The emphasis in a cosmogony is on the establishment of order (cosmos), and the maintenance of that order, and therefore upon the ultimate sources of power and authority. Given these concerns, there are three amorphous realities that are seen as especially threatening to order: the watery "deep," darkness, and the formless earth ("waste" and "void"). These potentially chaotic realities must be cosmologized. They are not, however, simply threatening or demonic, but rather ambiguous. They have a potential for good as well as evil, if controlled and placed in an orderly context. The particular organization and movement of Genesis 1 is readily intelligible when this cosmological problem, with which the account begins, is kept clearly in mind.

Water, for example, has no shape of its own. And, unchecked or uncontained, as in flood or storm or raging sea, water can destroy that which has form. Darkness, also, in itself has no form, and is dissolvent of form. Only with the addition of light can shapes and boundaries and delineations appear. Similarly, earth is basically formless--whether as sand, dust, dirt or clay. And it is doubly formless when engulfed by formless and form--destroying water and darkness.

These fundamental problems confronting the establishment and maintenance of an orderly cosmos, therefore, in the logic of the account, need to be confronted and accommodated first. The amorphousness and ambiguousness of water, darkness and formless earth must be dealt with in such a way as to restrain their negative potential and unleash their positive potential. Otherwise, it would be like building a house without giving careful consideration to potential threats in the region, such as the adjacent floodplain, or shifting sand.

The structure of the account, then, is that of beginning with a description of a three-fold problem (the chaotic potential of darkness, water and earth) which is given a solution in the first three days of creation. The first day takes care of the problem of darkness through the creation of light. The second day takes care of the problem of water through the creation of a firmament in the sky to separate the water into the waters above (rain, snow, hail) and the waters below (sea, rivers, subterranean streams). The third day takes care of the problem of the formless earth by freeing earth from water and darkness, and assigning it to a middle region between light and darkness, sky and underworld.

This then readies the cosmos for populating these various realms in the next three days, like a house which has been readied for its inhabitants. In fact, the third day also takes care of providing food for its forthcoming residents through the creation of vegetation. We thus observe a symmetrical division of the account into three movements (Problem, Preparation, Population), each with three elements. The account could be read as if written in three parallel columns as shown in Table 1.

The problem of the three "chaotic" forces is resolved in the first three days by circumscribing their negative potential and making use of their positive potential. As a result a harmonious context is established in preparation for the population of these three regions. Darkness is contained and counterbalanced by light; water is separated and confined to its proper spheres by the firmament; and the earth is demarcated from the waters, allowing dry land and vegetation to appear.

Thus, with everything readied and in order, the inhabitants of these three cosmicized regions are created and invited to

Problem (vs. 2)	Preparation (days 1-3)	Population (days 4-6)
Darkness	1a Creation of light (Day) b Separation from Darkness (Night)	4a Creation of Sun b Creation of Moon, Stars
Watery Abyss	2a Creation of Firmament b Separation of Waters above from Waters below	5a Creation of Birds b Creation of Fish
Formless Earth	3a Separation of Earth from Sea b Creation of Vegetation	6a Creation of Land Animals b Creation of Humans

take their proper places. The light and darkness of day one are populated by the sun, moon and stars of day four. The sky and waters of day two are populated by the birds and fish of day five. The earth and vegetation of day three make possible a population by the land animals and human beings of day six.

In this way of reading the account, the dilemmas that arise for a literalist (i.e., scientific and historical) interpretation disappear. The three problems, which are envisioned as difficulties for cosmicizing, are dealt with first, followed by a sketch of the way in which these cosmocized regions are then inhabited. This is the logic of the account. It is not chronological, scientific or historical. It is cosmological.

The procedure is not unlike that of a landscape painter, who first sketches in with broad strokes the background of the painting: its regions of light and darkness, of sky and water, and of earth and vegetation. Then within this context are painted birds and fish, land animals and human figures. It would be quite inappropriate for anyone to try to defend the artistic merit and meaning of the painting by attempting to show that the order in which the painting was developed was scientifically and historically "correct." That order is irrelevant to the significance of the painting as a whole and the attribution of its authorship. It is a painting of the totality. And the critical concern is to sketch in all the major regions and types of creatures, so as to leave no quarter that has not been emptied of its resident divinity, and no elements that have not been placed under the lordship of the Creator.

The Numerology of Genesis 1

In this way of organizing the material, Genesis has used a numerological structure built around the number three—a hallowed number, as is apparent in the sacred formula, "Holy, holy, holy." Three is the first number to symbolize completeness and wholeness, for which neither number one nor two is suitable. Three also symbolizes mediation and synthesis, as the third term in a triad "unites" the other two. These symbolic uses of three are evident in the way in which phenomena are organized in terms of two sets of opposite forms which are separated from one another (days 1 and 2, 4 and 5), then completed and mediated by days 3 and 6. Light

and darkness of day 1, and sky above and waters below of day 2, are completed and mediated by the earth and vegetation of day 3. The triadic movement is then repeated as the first three days are populated by the second three: the sun, moon (and stars) of the day and night skies (day 4), and the birds of the air and fish of the sea (day 5), are completed and mediated by the land animals and humans of day 6.

The ultimate mediation is then given to human beings who, while belonging to the earth and with the animals (and therefore in the "image" of the earth and the "likeness" of animals), are also created in the "image and likeness" of God. Humanity is thus placed midway between God and Nature--which has now become nature by being emptied of any intrinsic divinity. Hence the traditional theological phrasing of "Nature, Man and God." As the Psalmist in a parallel passage put it with enthusiastic exclamation:

Thou has made him little less than God
and dost crown him with glory and honor.
Thou hast given him dominion over the works of thy hands;
then has put all things under his feet,
all sheep and oxen,
and also the birds of the air, and the fish of the sea,
whatever passes along the paths of the sea.

Psalm 8:5-8

This triadic structure of three sets of three points up another problem with a literal reading of the account. Literalism presumes that the numbering of days is to be understood in an arithmetical sense, whether as actual days or as epochs. This is certainly the way in which numbers are used in science, history and mathematics--and in practically all areas of modern life. But the use of numbers in ancient religious texts was often numerological rather than numerical. That is, their symbolic value was the basis and purpose for their use, not their secular value as counters. While the conversion of numerology to arithmetic was essential for the rise of modern science, historiography and mathematics, the result is that numerological symbols are reduced to signs. Numbers had to be neutralized and secularized, and com-

pletely stripped of any symbolic suggestion, in order to be utilized as digits. The principal surviving exception to this is the negative symbolism attached to the number 13, which still holds a strange power over Fridays, and over the listing of floors in hotels and high rises.

In the literal treatment of the six days of creation, a modern, arithmetical reading is substituted for the original symbolic one. This results, unwittingly, in a secular rather than religious interpretation. Not only are the symbolic associations and meanings of the text lost in the process, but the text is needlessly placed in conflict with scientific and historical readings of origins.

In order to understand the use of the imagery of days, and the numbering scheme employed, one has to think, not only cosmologically, but numerologically. One of the religious considerations involved in numbering is to make certain that any schema works out numerologically: that is, that it uses, and adds up to, the right numbers symbolically. This is distinctively different from a secular use of numbers in which the overriding concern is that numbers add up to the correct total numerically.

In this case, one of the obvious interests of the Genesis account is to correlate the grand theme of the divine work in creation with the six days of work and seventh day of rest in the Jewish week. If the Hebrews had had a five-day or a seven-day work week, the account would have read differently in a corresponding manner. Seven was a basic unit of time among West Semitic peoples, and goes back to the division of the lunar month into 4 periods of 7 days each. By the time Genesis was written, the 7-day week and the sabbath observance had been long established. Since what is being affirmed in the text is the *creative work* of God, it was quite natural to use the imagery of 6 days of work, with a 7th day of rest. It would surely have seemed inappropriate and jarring to have depicted the divine creative effort in a schema of, say, 5 days or 11 days.

It was important for religious reasons, not secular ones, to use a schema of seven days, and to have the work of creation completed by the end of the sixth day. "And God ceased on the seventh day from all work which he had done" (Genesis 2:2). The word "ceased" is *shabat*, a cognate of the term *shabbat*, *sabbath*. The "creation model" being used here is thus in no sense a scientific model, but a liturgical-calendrical model based on the sacred division of the week and the observance of *sabbath*. This is the religious form within which the subject of work is to be treated, even the subject of divine work.

The seven-day structure is also being used for another, not unrelated, reason. The number 7 has the numerological meaning of wholeness, plenitude, completeness. This symbolism is derived, in part, from the combination of the three major zones of the cosmos as seen vertically (heaven, earth, underworld) and the four quarters and directions of the cosmos as seen horizontally. Both the numbers 3 and 4 in themselves often function as symbols of totality, for these and other reasons. Geometrically speaking, 3 is the triangular symbol of totality, and 4 is the rectangular symbol (in its perfect form as the square). But what would be more "total" would be to combine the vertical and horizontal planes. Thus the number 7 (adding 3 and 4) and the number 12 (multiplying them) are recurrent biblical symbols of fullness and perfection: 7 golden candlesticks, 7 spirits, 7 words of praise, 7

churches, the 7th year, the 49th year, the 70 elders, forgiveness 70 times 7, etc. Even Leviathan, that dread dragon of the abyss, was represented in Canaanite myth as having 7 heads--the "complete" monster.

Such positive meanings are now being applied by Genesis to a celebration of the whole of creation, and of the parenthesis of sabbath rest. The liturgically repeated phrase "And God saw that it was good," which appears after each day of creation, and the final capping phrase "And behold it was very good," are paralleled and underlined by being placed in a structure that is climaxed by a 7th day. The 7th day itself symbolizes its completeness and "very-goodness."

The account also makes use of the corresponding symbol of wholeness and totality: 12. Two sets of phenomena are assigned to each of the 6 days of creation, thus totalling 12. In this manner the numerological symbolism of completion and fulfillment is associated with the work of creation, as well as the rest from it on the 7th day. The totality of nature is created by God, is good, and is to be celebrated both daily and in special acts of worship and praise on the Sabbath day. The words "six" and "seven" are themselves words of praise: six expressing praise for creation and work; seven for sabbath and rest.

Uses of the number 12, like 7, abound throughout the Bible. Not only is there a miscellany of references to 12 pillars, 12 springs, 12 precious stones, 12 gates, 12 fruits, 12 pearls, etc., but it was important also to identify 12 tribes of Israel, as well as 12 tribes of Ishmael, and later the 12 districts of Solomon, as well as Jesus' 12 disciples.

Though in the modern world numbers have become almost completely secularized, in antiquity they could function as significant vehicles of meaning and power. It was important to associate the right numbers with one's life and activity, and to avoid the wrong numbers. To do so was to surround and fill one's existence with the positive meanings and powers which numbers such as 3, 4, 7 and 12 conveyed. In this way one gave religious significance to life, and placed one's existence in harmony with the divine order of the cosmos. By aligning and synchronizing the microcosm of one's individual and family life, and the mesocosm of one's society and state, with the macrocosm itself, life was tuned to the larger rhythms of this sacred order.

For twentieth century, western societies the overriding consideration in the use of numbers is their secular value in addition, subtraction, division and multiplication. We must therefore have numbers that are completely devoid of all symbolic associations. Numbers such as 7 and 12 do not make our calculators or computers function any better, nor does the number 13 make them any less efficient. Our numbers are uniform, value-neutral "meaningless" and "powerless." What is critical to modern consciousness is to have the right numbers in the sense of having the right figures and right count. This sense, of course, was also present in the ancient world: in commerce, in construction, in military affairs, in taxation. But there was also a higher, symbolic use of numbers. In a religious context, it was more important to have the right numbers in a sacred rather than profane sense. While we give the highest value, and nearly exclusive value, to

numbers as carriers of arithmetic "facts," in religious texts and rituals the highest value was often given to numbers as carriers of ultimate truth and reality.

Those, therefore, who would attempt to impose a literal reading of numbers upon Genesis, as if the sequence of days was of the same order as counting sheep or merchandise or money, are offering a modern, secular interpretation of a sacred text--in the name of religion. And, as if this were not distortion enough, they proceed to place this secular reading of origins in competition with other secular readings and secular literatures: scientific, historical, mathematical, technological. Extended footnotes are appended to the biblical texts on such extraneous subjects as the Second Law of Thermodynamics, radiometric dating, paleontology, sedimentation, hydrology, etc. These are hardly the issues with which Genesis is concerning itself, or is exercised over.

Phenomenal Language

Since Genesis is teaching creation over against procreation, and monotheism over against polytheism, it cannot be said to be teaching science, or any one form of science over against any other. Insofar as Genesis deals with relationships within nature, it does so in a phenomenal manner: as things appear to ordinary observation. Genesis is not in the business of teaching a "young earth" theory of sudden creation in 6 literal 24-hour days. Nor is it teaching some form of "progressive creation" with a mix of fiat creation and epochs of gradual development. Nor is it teaching "theistic evolution" or "pantheistic evolution" or "panentheistic evolution." It does not teach any of these views of science and natural history because it is not using language in that way, for that purpose, or out of that concern.

If scientists wish to take such positions on their own, it is certainly within their province and right as scientists to do so, and to debate such positions within scientific forums. But it should not be done for religious reasons, or motivated by a supposed greater fidelity to the Bible. Nor should anyone presume that such efforts in any way confirm or deny biblical teaching. It is a linguistic confusion to try to argue that any of these scientific positions, or any other scientific positions, past, present or forthcoming, represent the biblical position, and can therefore be questioned by science, verified by science, or falsified by science.

A prime example of this confusion is the energy expended by certain biologists in construing the frequent reference to

reproducing "each according to its kind" as a statement concerning biological species and speciation. The phrasing is repeated 10 times in Genesis 1 with reference to vegetation, birds, sea creatures and land animals. If one may take this to be a biological statement, then it would be appropriate to introduce extended discussion of fixity of species, genetic mutations, natural selection, missing links, stratigraphic evidence, and the like. If not, then the discussion, however interesting and important, is beside the point. And it is not. The repeated stress upon "kinds" is not a biological or genetic statement. It is a cosmological statement. While that may appear to modern interpreters very much like a biological statement, it is actually a different "species" of statement that cannot be "cross-bred" with scientific statements. The type of species-confusion involved here is not that of biological species but linguistic species!

Since cosmologies are concerned with the establishment and maintenance of order in the cosmos, central to the achievement of order is the act of separating things from one another. Without acts of separation, one would have chaos. Thus ancient cosmologies commonly begin with a depiction of a chaotic state, where there are no clear lines of demarcation, and then proceed to indicate ways in which the present world-order (cosmos) with its lines of demarcation has been organized. In other cultures this was achieved by divine births, wars, etc. Here cosmos is accomplished by separating things out from one another, and by creating other things (e.g., light or firmament) that aid in the separation. Everything is thus assigned its proper region, allowing it to have its own identity, place and function in the overall scheme. The imagery used in Genesis 1, in fact, is drawn largely from the political sphere. It is that of a divine sovereign, issuing commands, organizing territories, and governing the cosmic kingdom.

In Genesis 1 the inanimate features of the first four days are achieved by being "separated" or "gathered together." On the first day "God separated the light from the darkness." On the second day "God made the firmament and separated the waters which were under the firmament from the waters which were above the firmament." On the third day God said, "Let the waters under the heavens be gathered together into one place, and let the dry land appear." And on the fourth day God said, "Let there be lights in the firmament of the heavens to separate the day from the night." The same theme is then pursued on the third, fifth and

sixth days in dealing with plant and animal life. "Each according to its kind" is a continuation on the animate level of the acts of separation on the inanimate level. The process is then climaxed by the creation of human beings who are granted their unique place in the cosmos by being separated from the rest of the animals by virtue of being in the image and likeness of God, yet at the same time separated from God as creatures of divine creation.

Beyond this general cosmological concern to attribute all types of beings, and all types of order, to the creation and control of God, there is no specific interest in or reference to what we might recognize as a biological statement on species, genera, phyla, etc., or a geological statement on the history of water and earth, or an astronomical statement on the relationship between sun, moon, stars and earth. The language used is phenomenal and popular, not scientific and technical. As John Calvin wisely noted, early in the growing controversies over religion and science: "Nothing is here treated of but the visible form of the world. He who would learn astronomy and the other recondite arts, let him go elsewhere."¹

This observation on biblical usage is very important for the doctrine of revelation. The biblical message offers itself as a universal message. It is addressed to all human beings, whatever their knowledge or lack of it. It is therefore couched in a form that employs the universal appearances of things

which anyone anywhere can identify with. As Calvin also states: "Moses does not speak with philosophical (i.e., scientific) acuteness on occult mysteries, but states those things which are everywhere observed, even by the uncultivated, and which are in common use."² Thus when Genesis 1 discusses the "separating" or "gathering" of inanimate forces, these are not astronomical or geological terms, but cosmological ones, which draw upon everyday observations of nature. Similarly, the word "kind" (*min*) is not functioning as a genetic term, but describes the animate order as it is perceived in ordinary experience. Biblical statements in all these areas are the equivalent of phenomenal statements still commonly in use, despite centuries of astronomy, such as "sunrise" and "sunset."

Calvin pointed out, for example, that the biblical statement--if construed as a scientific statement--that the sun and moon are the two great lights of the heavens, cannot be reconciled with astronomy, since "the star of Saturn, which, on account of its great distance, appears the least of all, is greater than the moon."³ And, as we now know, there are many suns greater than our sun. But, Calvin insisted, "Moses wrote in a popular style things which, without instruction, all ordinary persons, endued with common sense, are able to understand."⁴ Similarly, in his commentary on the reference to the two "great lights" in Psalm 136, Calvin affirmed that "the Holy Spirit had no intention to teach astronomy; and in proposing instruction meant to be common to the simplest and most uneducated persons, he made use by Moses and the other prophets of popular language that none might shelter himself under the pretext of obscurity."⁵

As Francis Bacon perceptively argued in 1605, addressing the apparent flat earth teaching of the Bible, there are two books of God: "the book of God's Word" and "the book of God's Works." These books, however, must not be confused in their nature, language and purpose. We must not, Bacon warned, "unwisely mingle or confound these learnings together." Religion and science are not necessarily running a collision course along the same track, except when someone mistakenly switches them onto the same track. Religious language and scientific language intersect at many points, to be sure, as they touch upon many of the same issues and realities. But they do not move along the same plane of

inquiry and discourse. They intersect at something more like right angles.

Science, as it were, moves along a horizontal plane, with its steadfast attention to immediate causes and naturalistic explanations for phenomena. Religion moves along a vertical plane that intersects this horizontal plane from beginning to end-and not just in certain "gaps" which are defended so as to make room for God at intermittent points along the line. Science, with its eyes focussed on the dimensions of the horizontal plane, tends to have a naturalistic bias, and to see all experience and knowing, and all affirmation, as reducible to this plane. Religion, however, adds another dimension, a supernatural dimension, which it insists intersects this horizontal plane at every moment, and in fact is the ultimate source of its being, meaning and direction. It is a dimension which, along its vertical axis, is both transcendent and immanent. It is simultaneously present with the natural, and without it the natural does not exist. But it is not reducible to the natural, nor is language about it reducible to natural forms.

If one wishes to argue for deeper meanings and mysteries in scripture, they are certainly there. But they are not scientific in character. They are theological and spiritual. They are not meanings and mysteries hidden from the ancients, but now revealed to 20th century scientists, which lie along the horizontal plane. They are rather inexhaustible depths of meaning and mystery which lie along the vertical plane. "O the depth of the riches and wisdom and knowledge of God! How unsearchable are his judgments and how inscrutable his ways.... For from him and through him and to him are all things" (Romans 11:33, 36).

NOTES

1. John Calvin, *Commentaries on the Book of Genesis*, ed. John King (Grand Rapids: Eerdmans, 1981), pp. 184-5.
2. *Ibid.*, p. 84.
3. *Ibid.*, p. 85.
4. *Ibid.*, p. 86.
5. John Calvin, *Commentary on Psalms*, vol. V (Grand Rapids: Eerdmans, 1981), pp. 184-5.
6. For an excellent discussion of Bacon and Calvin, see Roland Mushat Frye, "The Two Books of God," *Theology Today* (October, 1982), pp. 260-266. science, or falsified by science.

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