WHAT BIBLE-SCIENTISTS CAN LEARN FROM BIBLE-SCIENCE

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This article is a philosophical inquiry into the way in which Bible-science or creation-science is conducted, and into the status of terms such as "conceptual framework," "model," and "paradigm," which are often used in Bible-science writings. The ways in which Bible-science differs from other science are considered, and some suggestions are made which may help writers on Bible-science to improve their clarity. Also, similarities to, and differences from, some other particular scientific viewpoints are noted.

This paper is about (among other things) three terms: "conceptual framework," "paradigm," and "model," and how each of these terms can be used to label different aspects of Bible-science. This paper is about getting workable definitions, so that our labels make things clearer than they were before they were labelled. Because many Bible-scientists in the past twenty years have used terminology developed by theoreticians such as Norwood Hanson, Sir Karl Popper, Imre Lakatos, and Thomas Kuhn, and by epistemologists such as Clarence Irving Lewis, Robin Collingwood, and H. N. Lee, I will try to be guided by these philosophers where I find their thinking intelligible and applicable. However, since Bible-scientists in actual practice have frequently reinterpreted this terminology (as others, too, have done), I will also try to guide myself by the intent of Bible-scientists as far as I understand it.

I want to sharpen three key terms so that we know to what they apply and for what they can be used. By so doing I hope to make more cogent certain aspects of the Bible-science enterprise.

For some people the Bible provides a point of view that determines what they see and how they will describe to others what they have seen. For some people, such as many with a formal education in science and a religious background in American Protestant fundamentalism, the Biblical point of view has been conjoined with a scientific one. As philosopher H. N. Lee has noted: ". . . religion yields perhaps the most characteristic example of a complex set of inter-related beliefs. In this case the set of beliefs can become the controlling factor in one's whole attitude toward the world . . . even of what the person who holds it is willing to call knowledge." Lee goes on to cite William Jennings Bryan, the great Fundamentalist and prosecuting attorney at the Scopes trial, as an example of how a Bible-oriented outlook relates to one's view of science.[1]

That which results from the conjunction of such a religious viewpoint and science is an all-encompassing *conceptual framework* that generates Bible-science research about major issues in biology, geology, astronomy, physics, etc. Bible-science is a way of looking at the world. It is a complete conceptual framework in the sense that everything — data, concepts, theories, and methodologies — gets filtered through it. What will be called a "fact" will be determined by the conceptual framework; that which will be accepted as a theory will be determined by the conceptual framework. And Bible-scientists of the calibre of Leonard Brand, Biology Department chairman at Loma Linda University, clearly understand the far-reaching effects of conceptual frameworks:

> In the study of science, as in the study of religion, we receive new information only through our senses, and the scientist, as well as the religionist, has a "filter" in his mind, with a feedback mechanism. The concepts developed in his mind determine what observations the filter will allow, and what observations will be filtered out because they are not relevant.[2]

The Bible-science framework generates paradigms for the various areas of science. Since Thomas Kuhn's employment of "paradigm" as a technical term in *The Structure of Scientific Revolutions*, the word has been worked, re-worked, and over-worked. In spite of Margaret Masterman's claim in *The Nature of a Paradigm* that Kuhn gives twenty-one different senses to his term, it is still found useful as a classificatory concept by scientists, historians, anthropologists, aestheticians, and epistemologists. The popular press is dependent on the term. In a recent *New York Times* article "The Other Darwin: Scientist as Moral Man," Bruce Mazlich, professor of history at MIT, writes: "To judge him (Darwin) by our knowledge and sensibilities would be to expect that he could have transcended the assumptions and paradigms of his time." And the same need to use the term is found in Bible-science literature. In a review in *Bible-Science Newsletter* (July '82), editor Paul Bartz freely uses "paradigm."

Generally, the formation for one area of science of a well-articulated program of research, which will include among other things theory and observation, constitutes a paradigm of scientific thinking in that area of science. Not only in biology and geology are there Bible-science paradigms, but also in astronomy, astrophysics, physics, genetics, and various social sciences. And the paradigm determines what we shall perceive as sensible research, admissible data, and worthy conclusions; or in the words of psychologist Edwin G. Boring, "A paradigm is a way of perceiving nature, and, as in all perception, the shift from one hypothesis to another is all-or-none. . . . The camel in the field suddenly is seen for what it is, a pile of stones."[3]

In turn, some paradigms require a *model* to explain what is beyond observation. Where no one can give an eye-witness account, imagined models serve graphically to explain the unobservable (or unobserved) event or object. Good examples of this are the Bohr model of the atom, or the picturing of electricity running through a wire like water running through a pipe.

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The word "model," if not the actual role of models in science, has given Bible-scientists some difficulty. "Model" in Bible-science literature sometimes has the meaning "physical object used to represent something else,"[4] sometimes, "a conceptual pattern involving listed statements about imaginary objects,"[5] or, "a temporary plan,"[6] or; "A 'model' is a conceptual framework, an orderly system of thought, within which one tries to correlate observable data and even to predict data."[7]

Since these definitions are neither identical nor sharp, I believe we would do well to distinguish two features found in them. One feature is the notion of "theory," which philosophers of science frequently define as "a non-contradictory listing of primary and essential principles explaining some important occurrence." The second feature deals with "model," which might best be limited to what I stated above, "an imagined event or object offered so that we may graphically explain or picture some supposed unobservable phenomenon." Given this distinction between theory and model, we can now say that in many areas of science, Bible-science suggests a theoretical explanation that employs a model of how unobservable or unobserved events or things are imagined to be or to have been. Of course theories and models are generated by a paradigm which is ultimately generated by an over-arching conceptual framework.

One Bible-science paradigm deals with the creation and continued support of the heavens and earth. This is part of Bible-science astronomy and astrophysics, and the paradigm, "creation and maintenance by Divine fiat," contends that the universe was created *ex nihilo* by a Creator Who even today keeps this creation going.

A second Bible-science paradigm is a certain view of the creation, generation, and maintenance of plants and animals. This is Bible-science biology, and the paradigm entails a model picturing non-evolving *baramins* (literally, created kinds; the term is now in fairly common use).

A third Bible-science paradigm implies specific occurrences in regard to the formation of geological features. This is Bible-science geology, or Deluge geology, with its Canopy theory, held by many, and the hypotheses of ecological zonation and hydrodynamical selectivity also often proposed. In light of Genesis a model is proposed, featuring an antedeluvian world destroyed by a vast Noachian flood.

"Creation" is the common thread that runs through these paradigms, and Bible-scientists have been most concerned with the creation of the physical and biological universe. This is the reason why Bible-scientists are accustomed to describing themselves as doing "creation-science," and speaking of the "creation-model (paradigm) of the universe." However, as can be seen by the enumeration of the above distinct areas, Bible-science is dealing with more than just origins, with more than just one kind of origination, and with more than just one paradigm or model. R. Daniel Shaw's claims in *Fossil Man: Ancestor or Descendant of Adam?* is a good example of this. While in explaining his correlation between Biblical history and fossil record, he says, "Coupled with this dispersion-degeneration model. . . ." Here is really not an all-encompassing "creation-model," but more a model for geological dating.

It is instructive also to consider what is sometimes viewed as a confrontation: Bible-science or creation-science versus evolution-science — one kind of research, one model, one paradigm, pitted against another. Raymond F. Surburg, in his Bible-science essay, *The Influence of Darwinism,* is certainly correct in saying, "These new concepts of the evolutionary process eventually affected ideas concerning the nature of reality, the nature of knowledge, and the nature of morals."[8] But there is no such one thing as evolution-science. As for evolutionism as philosophy, for instance, the synthetic philosophy of the nineteenth century thinker Herbert Spencer, it has been discarded,[9] (although some may be unaware of that), while pragmatism, which Surburg correctly identifies as having been strongly influenced by Darwinism, has gone on to develop a theory of knowledge that, as I will show later, might surprise the Bible-scientist.

Evolution, if we mean by that (neo-) Darwinian evolution, is a theory (for Kuhn and the contemporary Bible-scientist, paradigm) in biology. Unfortunately many people have linked this biological concept with the geological concept that the earth changes, that it "evolves." Often Bible-scientists expand the application of this biological concept even further: John Moore writes, "Nevertheless, in this context evolution is understood to mean 'molecules to man,' to use one textbook subtitle expression. . . . Actually the 'molecules to man' thesis of modern evolutionists involves stellar evolution, molecular evolution, organic evolution, and social (societal) evolution. . . ."[10] But to do this to the word "evolution" is to treat it metaphorically, and so broadly that all worthwhile meaning is stripped from it.

The Bible-scientist, maybe in an effort to make clear to his readers what he considers to be the issue, creation-science versus evolution-science, often uses "evolution" in just such a broad and metaphorical fashion. By doing this the fundamentalist and Bible-literalist can see in all of science a conflict between two competing systems.

Let me suggest that what actually exists is what Kuhn has called "normal science," which is the standard, accepted way of doing things. Normal science is the normal way of doing science — the way the overwhelming number of scientists work, what fills science journals, and what gets grants from the National Science Foundation and the Pentagon. And normal scientists work in a hundred different areas as do Bible-scientists.

What I have attempted to demonstrate so far is that the content of each Bible-science paradigm is as diverse as the areas of research in which it is found, even though the paradigm is a direct result of the single Bible-science conceptual framework. I have attempted to show this by making clear the usage of such terms as "conceptual framework," "paradigm," and "model." However, more still needs to be said in regard to their specific application to Bible-science and the role of scientific methodology in all this.

What all Bible-science areas of science share is a way of geting things done — each area of science assumes the same methodology, a methodology generated by the Bible-science conceptual framework. To illustrate:

When Copernicus put forward his heliocentric paradigm to replace Ptolemy's geocentric one, Copernicus' paradigm was restricted to astronomy; it did not apply to biology for example, and therefore was not in any real sense a vast, all-encompassing conceptual framework. However, the Copernican way of doing astronomy — one might say a solid Baconian modernism — was applicable to all areas of science. In other words, though the change of paradigm was restricted to astronomy, Copernicus's new methodology could apply not only to astronomy, but also to mechanics, physics, chemistry, etc.[11]

This distinction between the content of scientific areas and the methodology employed is an important one. There is one all-inclusive methodology for normal science as there is one all-inclusive methodology for Bible-science. It is a distinction that Bible-scientists have not as yet made much of, and it may be worth their consideration.

In many respects Bible-science methodology is similar to that of normal science. Bible-science accepts the usefulness of field research, laboratory experimentation, the process of replication, and statistical analysis. Where hypotheses are open to falsifiability, Bible-scientists often pay more than lip service to this principle.

Yet in four important ways the method of Bible-science is different from normal science's methods The first is that observation and experimentation are viewed as limited devices. Secondly, the supernatural is figured as an explanatory principle. Thirdly, science is, among other things, a moral enterprise. And lastly, and somewhat paradoxically, as will appear, is the acceptance of the Bible's testimony as indisputable fact. We will look at each of these four points in more detail.

1. A radical empiricism constitutes the first tenet of Bible-science methodology; it is the empiricism of Sir Francis Bacon pushed to its furthest extreme. What can be known with certainty is what can be gained through direct observation and experimentation, here and now, which, accordingly, only provide data about the here and now. As the Bible-science textbook, *Biology: A Search for Order in Complexity*, remarks:

> Also, experimentation is limited in time and space. It can be used only with phenomena on our time level (the present) and with phenomena that can be examined within the limitations of the laboratory. It is impossible to conduct controlled experiments regarding the past. This is true also of direct observation. There are areas, such as the makeup of the atom or studies of the past, in which little direct observation can be carried out.[12]

Therefore, any inference made about some other time and place must always remain conjectural. Data derived from experiment or observation have only limited circumstantial use in regard to claims about events that are beyond immediate observation. As Dr. John N. Moore notes, "Thus conclusions that some geologists reach about events that occurred on the surface of the earth in the past are based on circumstantial evidence — evidence that cannot be repeated."[13] Model-building now becomes essential for the Bible-scientist, since the model must convey all that cannot be observed. Since no human observed the origin of the planet a model is required so that we may picture this event and understand a certain paradigm of astronomical creation. (The assertion by fundamentalists that the Bible is or contains, an eyewitness report of creation events obviously has great Bible-science utility, and this issue will be addressed later in this paper.)

In geology, Bible-scientists use this strictly delimited conception of observation and experimentation to attack what they call the principle of uniformitarianism: the principle that geological change occurs in a uniform fashion throughout time. Bible-scientists suggest in its stead that great catastrophies such as the Edenic curse and Noachian flood changed the entire world very rapidly.

The Bible-scientist, by limiting observation and experimentation, is not only following Bacon, but is also walking in the footsteps of philosopher David Hume. Hume held that simply because Y is observed to follow X today, there is no guarantee it will do so tomorrow or has done so, unobserved, in the past. There is no guarantee that the experimental result of today would hold six thousand years ago or at some time in the future. Thus "uniformitarianism" as a principle in geology actually becomes a discarded, or at least breakable, principle of scientific methodology.

Though the Bible-scientists wish to discard the geological principle of uniformity in its more extreme form, some are aware that it would be dangerous completely to do away with the principle as a methodological tenet. If the methodological tenet is done away with there really would be no point in doing experiments, or probably doing anything for that matter. What the Bible-scientist does, therefore, is to use uniformity in a guarded fashion: he uses uniformity unless it contradicts Bible testimony or is overruled by the occurrence of a *bona fide* miracle.

2. The second unique tenet of Bible-science methodology is the inclusion of the supernatural as a scientific explanation. Where normal science limits itself to natural phenomena and events, Bible-science uses both nature and the supernatural. It makes sense to the Bible-scientist, therefore, to claim that men are distinct from apes because the Creator made man in His image, but did not choose to do anything of the sort with apes. This tenet of explanation might run into problems with principles of verification, but the Bible-scientist has frequently countered that many things in normal science run into the same problem.

This second tenet of methodology, the use of the supernatural as an element of explanation, has a second important implication for Bible-science. Using an appeal to supernatural intervention in natural events serves not only as an explanation for prior causes for some event, but also for final, purposive causes. Bible-science is therefore teleological and not simply mechanistic. As the textbook, *Physical Science for Chris-*

tian Schools reports: "Creationist scientists often speak about teleology . . . It means *purposiveness* or *design in nature*. The Christian man of science, in studying an object or an event in nature, will try to understand God's purpose behind it."[14] Things happen not only because of mechanically prior causes, but also because they serve some final purpose. This is very similar to the position Aristotle took in what Kuhn has pointed to as a viable scientific procedure.

3. The third tenet of Bible-science methodology is that science, besides being a discoverer of facts, may also be the bearer of morality — commonly fundamentalist Christian morality. At least, it should not go counter to morality. Bible-science is not a morally, socially, or religiously neutral enterprise. Bible-science is fact-discovery, but it may be also a way to moral edification. Hence, the first and second laws of thermodynamics (what is created is created — no increase and nothing new under the sun; and, things tend to run down and go to disorder) not only disprove evolution, but also demonstrate that the world is decaying, it is running down.

Because Bible-science develops facts and values, it makes sense to the Bible-scientist to criticize Darwinian evolution on moral grounds as well as factual grounds. As understood through the Bible-science framework, scientists while doing science are not amoral or engaged in an amoral, value-less, enterprise. Hence for Bible-scientist William Tinkle, it is a matter of science to observe that:

> the theory of evolution by natural selection encourages selfish aggression and violence. It not only condones selfishness; it is founded upon it. The animal which asserts itself and overcomes its fellows is supposed to do so because it has superior genes. It therefore leaves more descendants than the average; and, thus, in time a superior strain is built up, and later, an improved species. But if a human being follows this example — asserting himself and disregarding the rights of others — we say that he is immoral.[15]

The Bible-scientist is saying what some philosophers have long held — science is not a value-neutral enterprise.

4. The last tenet of Bible-science methodology is somewhat paradoxical, and one is a bit puzzled as to how to treat it. The Bible-scientist accepts the Old and New Testament as inerrant and as the Word of God. This means that the Bible is the ultimate authority on scientific truth; and, therefore, in matters with which it deals, there is really only one set of facts and only one set of correct models of the universe. The Bible, in good Baconian fashion, is a text of divinely accurate observations. As one high school text informs students, "The facts about the manner and order of creation that God has choosen to reveal to us in the Bible are all we (including the scientist) can know with certainty about the beginning."[16]

What seems paradoxical is this. Much Bible-science literature speaks of the two-model approach: creation-science and evolution-science. The Bible-scientist seems here to be allowing two models (competing conceptual frameworks and paradigms), although he knows that only one of them is true. Bible-scientists might perhaps make their position, and their reason for taking it, clearer here.

Now there is a secular (often) philosophical theory which adopts a similar position: the theory of conceptual relativism. This theory would claim that competing paradigms are really never right or wrong, true or false, but rather more or less useful. We are dealing with a relativity based on workability, not absolutes based on eternal truth. Brand, writing as a Bible-scientist, takes the same position: "Eventually it ("theory"-paradigm) will succeed only if it stands the test of time and criticism. In other words a theory (paradigm) will succeed if the practical world of research shows that it works."[17] Conceptual frameworks and paradigms determine and organize experience; and such classificatory devices can be more or less useful. These devices are not eternal verities. This is the position not only of Kuhn, but also of a long line of epistemologists such as Lewis, Collingwood, Whorf, and Lee.

So here is a rather curious position. The whole scheme of conceptual frameworks, paradigms, and models is part of pragmatism, a philosophy wihch denies the possibility of absolute truth. For pragmatism, truth is a function of conceptual interpretations which evolve due to man's constant interaction with the world.

Many Bible-scientists have pointed to pragmatism as an offspring of evolutionism, and a bad thing. Surburg, for instance, blamed John Dewey for holding such a philosophy: "Dewey ignored or forwent all efforts to describe what is Absolute Reality, Absolute Truth, and Absolute Goodness."[18]

For some decades, Bible-science methodology was strictly Baconian. Then, in the mid-1960's, Bible-scientists took up frameworks and paradigms, the paraphernalia of conceptual relativism. This seems an abrupt change of stance.

In conclusion, then, the four procedural tenets just considered constitute the essential differences between Bible-science and normal science methodology. We may say that the Bible-science conceptual framework, being an all-encompassing view of the scientific enterprise, determines a methodology which constitutes the accepted procedure in all Bible-science areas.

I have attempted to relate the terms "conceptual framework," "paradigm," and "model" to specific aspects of Bible-science. In some cases I have adjusted these terms to satisfy the needs of Bible-scientists, and (I hope) clarified these terms if their meanings were vague or ambiguous. I hope that this exercise in definition will help to make both the writings of philosophers like Kuhn and those of Bible-scientists more comprehensible.

References

[1]Lee, Harold Newton, 1973. Percepts, concepts, and theoretic knowledge. Memphis State University Press. P. 144. See also Gillespie, Neal, 1973. Charles Darwin and the problem of creation. University of Chicago Press. He notes (p. 3) the same thing about Bible-science in the nineteenth century: "The creationist . . . saw the world and everything in it as being the result of direct or indirect divine activity. His science was inseperable from his theology."

[2]Brand, Leonard, 1974. A philosophic rationale for the Creation-Flood model. *Origins* 1, 73-82.

[3]Boring, Edwin G., 1964. Cognitive dissonance: its uses in science. *Science* 145(3633):681-685.

[4]Moore, John, 1976. Questions and answers on creation/evolution. Baker Book House, Grand Rapids. P. 104. (This quotation has been paraphrased somewhat.)

[5]*Ibid.*

[6]Bliss, Richard, 1976. Origins: two models: evolution/creation. Creation-Life Publishers, San Diego. P. 2.

[7]Morris, Henry M., 1974. Scientific creationism. Creation-Life Publishers, San Diego. P. 9.

[8]Surburg, Raymond F., 1959. The influence of Darwinism. (in) Darwin, evolution, and creation. Concordia Publishing House, St. Louis. Pp. 177 & 178.

[9]This is realized by some, but not by all. See Davidheiser, Bolton, 1971. Social Darwinism (in) Scientific Studies in special creation. Baker Book House, Grand Rapids. Pp. 338-343. Cf. LaHaye, Tim, 1980. The battle for the mind. Fleming H. Revell Co., Old Tappan, New Jersey.

[10]Reference 4, p. 24. The term "molecules to man" had been used earlier in a textbook wihch deals only with issues in biology: Biological science: molecules to man, the B.S.S.C. blue version, published in 1963.

[11]Aristotle's *Organon* was replaced by Bacon's *Novum Organum*, literally a "new tool" for doing science.

[12]More, John, and Harold Slusher, eds., 1971. Biology: a search for order in complexity. Zondervan Publishing House, Grand Rapids. P. 9.

[13]Reference 4, p. 18.

[14]Williams, Emmett L., and George Mulfinger, 1974. Physical science for Christian schools. Bob Jones University Press, Greenville, South Carolina. P. 15.

[15]Tinkle, William J., 1971. Immorality in natural selection (in) Scientific studies in special creation. Baker Book House, Grand Rapids. P. 230.

[16]Steele, DeWitt, 1981. Science: matter and motion. A Beka Book Publications, Pensacola, Florida. P. 495.

[17]Reference 2, p. 82.

[18]Reference 8, p. 181.

[19]The reader may find it interesting to compare these conclusions with those reached in Berkeley's Principles of human knowledge, which may be found in any collection of his works.

BOOK REVIEW

The Rise of the Evolution Fraud, by M. Bowden, 1982. Sovereign Publications, P.O. Box 88, Bromley, Kent, BR2 9PF, England, and Creation-Life Publishers, San Diego, California. (£3.90 or $7.95)
Reviewed by David J. Tyler*

Readers of *Ape-men: Fact or Fallacy?* by Malcolm Bowden will be interested to learn of a companion volume. In the new publication, attention is focussed on the men who were responsible for promoting the Darwinian theory of evolution by natural selection. As he traces the history of evolutionary thinking, Bowden provides an original and challenging account of the way Darwin, Lyell, Huxley and others went about their work.

After consulting the text of Darwin's original manuscripts and letters, Bowden has some radical comments to make about the development of his ideas. Towards the end of his life, when Darwin was writing for public consumption, he stated that he "worked on true Baconian principles, and without any theory collected facts on a wholesale scale . . ." Bowden's probing analysis makes it obvious that this claim is quite absurd. Chapter 16, entitled 'A critical review of "Origins",' is also an important section of the book: the reviewer has not before read such an incisive assessment of Darwin's *magnum opus*. Bowden's comments on Darwin's poor health show similar radical departures from tradition. During the centenary year of Darwin's death, one of his biographers claimed that Darwin suffered from psychosomatically induced illnesses brought about by "the bile of abuse and calumny relentlessly poured upon his peace-loving head." Bowden also thinks that Darwin's poor health was linked with his writing about evolution. However, he suggests that "the root cause of Darwin's illness was the stress generated in him when he was writing about a theory *which he knew was basically false.*" (p. 87) There are problems with all historical studies because there is often insufficient information to come to firm conclusions. Nevertheless, the reader is invited to examine Bowden's work, to assess whether there are reasonable grounds for his suggestion.

The image of Lyell is probably the one which is in most need of revision — if Bowden is right in his analysis. Lyell is generally recognized as a founding father of modern geology. His ideas on uniformitarianism have dominated the thinking of generations of geologists. Yet, Lyell is also described as an opponent of evolution — at least until Darwin's theory of evolution by natural selection had become widely accepted. Bowden paints quite a different picture: there is evidence to show that Lyell had a long-standing hostility to biblical revelation and that he actively encouraged the dissemination of views which undermined the authority of the Bible.

Bowden traces the way Darwinistic thinking became the new orthodoxy. Perceptive comments are made on the 1860 British Association meeting, and on the 'overlooking' of Mendel's findings. Bowden documents some of the more recent problems creationists have found in presenting views which are at variance with the evolutionary scientific establishment.

The reviewer has found Bowden's book stimulating to read and considers it a welcome addition to the literature. There are some weaknesses which deserve brief comment here. First, Bowden makes Flood geology the accepted view of the first half of the Nine-

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