Studies in Creation

A General Introduction to the Creation/Evolution Debate

John W. Klotz

Publishing House
St. Louis

Library of Congress Cataloging in Publication Data

Klotz, John W. (John William), 1918-
Studies in Creation.
1. Creation. 2. Evolution. 3. Religion and science—1946- . I. Title.
BS651.K58 1985 231.7'65 84-27440

ISBN 978-0-7586-1851-1

To Florence,
my wife, companion, and fellow traveler,
who with me has retraced the footsteps
of Charles Darwin.

Contents

Preface

The theory of evolution is once more a matter of intense public and scientific interest and controversy. For one thing, there is the ongoing debate between creationists and evolutionists resulting in a number of court cases in California, Texas, Indiana, Arkansas, and Louisiana. But the scientific community itself is also in ferment regarding the theory of evolution. While there continues to be general acceptance of evolution, Darwinism has come under increasing attack. If the ideas of Gould and Eldredge prevail, Darwinism may well become as much a museum piece as phlogiston, luminiferous ether, and body humors.

Why should the current controversy between the creationists and the evolutionists be such an emotional one, as is evident from discussion in the public press and in the court cases? Is it not a case of pitting faith against facts? No, it is not, for there is much faith in the acceptance of the theory of evolution. Because it deals only with those things that can be observed and measured, science excludes from its consideration what many regard as one aspect of reality, the supernatural. Morever, it is based on acceptance of a series of assumptions. It makes a number of these and accepts a chain of presuppositions; many of these are in agreement with Scripture and are part of our Judeo-Christian heritage. But being assumptions and presuppositions, they are as much matters of faith as is acceptance of the Biblical creation account.

It is significant that in many ways the evolutionist does indeed have a god, even though he seeks to exclude the supernatural from scientific discussions. That god is the god of chance. And in a real sense it requires more faith to believe that he could accomplish the vast changes that evolution demands than to believe they have been brought about by the wisdom and planning of a supernatural being.

The history of the so-called "warfare of science and theology" suggests that we will have to expect a great deal of emotion. It is not surprising that evolutionists frequently charge creationists with ignoring evidence in favor of an unsubstantiated Biblical account. Many creationists may indeed have reevaluated the facts because they have accepted the Scriptural account. Yet that they should have begun with an acceptance of the Scriptural account is really irrelevant to the argument, since the facts should speak for themselves. But this is not really possible even for evolutionists. Because of the paucity of facts it is quite clear that there is as much faith and perhaps even more faith involved in accepting the theory of evolution than in accepting the Scriptural account.

In this controversy charges and countercharges of dishonesty are not helpful. In general, we must agree that the scientific community has developed high ethical standards. It may indeed be true that some members of that community have with revivalistic fervor sought to

manipulate the facts and to deceive. But these are certainly the exception, and the scientific community has been eager to expose such frauds. Scientists are as much committed to the pursuit of truth as are churchmen.

The present book is an attempt to understand the nature of science and to explain some of the tensions which exist between the scientific community and the evangelical community. The theory of evolution is discussed in considerable detail. Evidences suggesting a great deal of change within living things are evaluated, as are the series of evidences which are difficult to reconcile with the idea of such a vast change as evolution demands.

The author hopes that this book will be a contribution to an understanding of the current controversy.

John W. Klotz
St. Louis, Mo.
July, 1984

1
Science and the Scientific Method

There is no doubt that many of the blessings that God has bestowed on those of us living at the end of the 20th century and the beginning of the 21st century have come as a result of science and the scientific method. The Lord has literally opened the windows of heaven to us and has showered His blessing upon us. He has enabled us to learn much of the ways in which He governs the universe. He has given us a measure of control over our environment. Tremendous progress has been made in medicine, so that in the western world the average life span is the proverbial three score and 10 or four score years of Psalm 90. Moreover, we are able to alleviate and ameliorate much of the pain and suffering that come from disease and disability.

The Lord has also permitted us to utilize the sources of energy which He created. At one time the only energy available came from the muscles of animals and the muscles of human beings, including slaves. Then God permitted us to discover the energy stored in coal. This was followed by our discovery of the energy stored in oil and natural gas. Now we have learned to use the energy stored in the atom. In one sense slavery is no longer necessary because we have discovered abundant sources of energy about us.

There is no doubt that there were brilliant men in past societies. It is quite possible that the I.Q. of Greek intellectuals exceeded the I. Q. of men today. We marvel at the engineering projects of past societies, the blocks of stone at Stone Henge, the pyramids of Egypt, the temples and astronomical observatories of the Incas and the Mayas.

The Greeks were geniuses at rationalization, but unfortunately they failed to appreciate the importance of manual manipulation involved in the experimental method, so much a part of the scientific method today. Indeed, they despised manual manipulation and regarded it as the work of a slave on a much lower level than the rationalization they themselves practiced. Consequently, they did not make the progress we have made.

Today the scientist works with two "things." He works with facts, and he works with explanations for those facts, the theories and hypotheses of modern science. The facts he gains through his sense organs. The sense organs are the tools God has given us to keep in touch with our environment. The scientist gathers his observations made with his eyes, ears, and chemical senses. It is here that he uses the experimental method.

The tool by which he constructs his explanations is his mind. He reasons inductively and deductively to explain the observations he makes with his sense organs.

Thus, it should be noted that there are two sorts of "things" that the scientist is working with. These dare not be confused. An explanation cannot become a "fact"; it always remains a mental construct.

This is not to suggest that theories and hypotheses are unimportant. They are extremely important because they guide practiced activities. George Washington probably died because of the application of a wrong theory. In his day it was believed that disease was due to an imbalance in the body humors; specifically, that disease was frequently the result of "bad blood." It followed logically that if you believe disease was due to bad blood, you ought to remove some of the offending fluid. This led to the practice of bleeding, and there is little doubt that Washington's demise was at least hastened by the bleeding to which he was subjected when he became ill.

Our theories are equally important today. They mold and direct much of our thinking. It is for that reason that evolution cannot be dismissed with the judgment that it is "only a theory." It has a great many practical applications and has had these in the past century. One of these is secular humanism. There is good reason for the concern that continues to be expressed over the fact that it has become the teaching of the public schools, to the exclusion of crucial parts of our heritage.

Assumptions

It should also be pointed out that the scientist makes a great many common sense assumptions. There is nothing esoteric about these assumptions, nor is there anything esoteric about the scientific method. The scientist, for example, assumes the existence of other people. He assumes that space is three-dimensional even though the image that falls on his retina is two-dimensional. He assumes that the existence of objects is independent of the presence of the observer. And, most importantly, he assumes the orderliness and uniformity of the universe in which he lives—something which follows from the Biblical teaching that God is a God of order.

It should be very evident that modern science could only have developed in the environment of the Judeo-Christian emphasis on the orderliness of creation. The gods of many religions are erratic. They play "cat and mouse" games with man. They tantalize him and change the rules. Their actions are not predictable, and consequently the universe is not regular and predictable.

From time to time the scientist does make other assumptions, which may or may not be true. Assumptions are matters of faith; by their very nature they cannot be proven. If accepted, they may lead to wrong or meaningless conclusions. For that reason assumptions always deserve examination. Ernst Mayr is quoted as saying, "Two years ago I saw a paper in the *Proceedings of the National Academy of Sciences*, and the author wrote, 'Let's assume the gene has a constant selective value; let's assume there is no gene flow from any other population.' He made about five such assumptions, each of which was equally unrealistic, and then he went on to prove something very beautiful mathematically, but it was meaningless."[1]

Common Sense

At the same time it should be noted that modern science has tended to move away from "common sense" theories and assumptions. When they are carefully studied, things are not what they appear to be. The Ptolemaic theory is a common sense theory; the Copernican theory is an abstract theory. "Anyone can see that the earth does not move and that the sun,

moon, and stars revolve around the earth." Yet today there is almost universal agreement among astronomers that the sun is the center of the solar system and that the earth moves around the sun.

Our modern theory of the nature of matter is an abstract one. Try to convince an aborigine who has not had the benefit of a modern scientific education that a table is mostly empty space and that it is made up of particles in constant motion. He will tell you that you are crazy.

In mathematics, non-euclidean geometry, with its concept of curved space, is an abstract theory. In physics, relativity is an abstract as opposed to a common sense theory. Quantum mechanics is highly abstract. It and relativity "lead to realities beyond our common experience that cannot be rejected."[2] The reality of the common experience in the classical world is believed by some to be "only a small part of what there is."[3] The tendency in science throughout its history has been to move from common sense to abstract explanations.

This has some relevance when it is argued that common sense tells you that fossils are related by descent, and that anyone can see that "substantial changes have occurred" over the period of the earth's history.

The scientist moves back and forth between the study of facts and the development of explanations for those observations that he makes. He may collect a great many data (facts) and proceed by mental processes to sort them out, to classify, and to correlate them. He then may develop an explanation for them and from his explanation deduce the consequences of his explanation. Both these latter procedures are mental processes. He very likely will then proceed to test the correctness of his explanation by making additional observations. Thus, he moves back and forth between facts and explanations.

It should also be noted that one of the criteria for a scientific theory is that it must be testable. It must be possible to deduce the consequences from a theory or hypothesis, to predict and thus test the consequences of the theory or hypothesis. In evolution, little testing is possible by virtue of the very nature of the problem. It is not possible to test the changes that should take place as a consequence of the theory of evolution.

The Scientific Method

There are many scientific methods. The scientist is helped a great deal when he has clear-cut theories and hypotheses, and therefore he has a real incentive to develop these. If he does not have a clear-cut operational definition expressed in an adequate theory or hypothesis, he must operate with fuzzy ideas. This is the situation in the infancy of any science. Trial and error are necessary but are certainly wasteful. Medicine is a good example of this type of trial and error procedure. We may shudder at the practices of the past and thank God that we have been called into time in the last part of the 20th century. Yet the fact of the matter is that this trial and error procedure was necessary for progress in medicine, the benefits of which we enjoy. In 1860 Oliver Wendall Holmes, the dean of American medicine, said, "I firmly believe that if the whole *materia medica* as now used could be sunk to the bottom of the sea it would be all the better for man—and all the worse for the fishes."

The whole purpose of science, then, is to develop more acceptable explanations which it is hoped will more adequately describe reality.

One question that arises is the reliability of our sense organs. Can we count on the data which they gain for us and which we regard as "facts"? We are all familiar with mirages and optical illusions. We also know that our senses can sometimes deceive us. For example, something that is very hot may momentarily appear cold, and that which is very cold may "burn." The fact of the matter is that our sense organs are reasonably reliable and that the

data they gather for us is reasonably dependable. These sense organs are the gift of God intended by Him to enable us to keep in touch with our environment. As such, they are "good" (Gen. 1:31).

Mental processes are less dependable. As we have pointed out, things are not always what they appear to be. There are inadequacies in both the inductive and in the deductive methods. It is apparent that man's mental processes have been more affected by the fall than have been his sense organs. Explanations must be corrected and evaluated more often than observations, though, of course, it is quite possible to be in error in the observations one makes.

One very important consideration is the fact, as hard as it may be to accept, that the human mind is limited. We are an arrogant generation; we insist on building intellectual towers that will reach to the skies. God has indeed permitted us to learn much about the nature of the universe and how it operates. Yet there may be things which because of the limitations of the human mind we cannot understand. It is certainly in order to explore these and to seek to understand them, but we need to recognize that some may be beyond our comprehension. Moreover, we need to recognize that things may not be what they appear to be. Witness the movement of scientific theories from common sense to abstract theories and the current discussions of quantum mechanics. Einstein is often quoted as saying that the Lord may be subtle, but He is not malicious. There is a third possibility. Perhaps some of our problems are due to our inability to discover His subtleties. Fifty million scientists, unlike 50 million Frenchmen, *can* be wrong. Phlogiston and luminiferous ether, which once had universal scientific acceptance, are now only historical curiosities.

The Experimental Method

The genius of modern science is the use of the experimental method. It has been by using this method that much of the tremendous progress made by modern science has been possible. The Greeks probably inadvertently limited their scientific progress by despising the experimental and overemphasizing the importance of the rational. The emphasis on the inductive method and the development of principles of inductive reasoning, especially by Mill, has made possible much of the progress of modern science.

An experiment is simply an observation made under controlled conditions. What is often not realized is that there are many situations in which experimentation is not possible. To begin with—and this is critical for a consideration of creation—the experimental method can be used only to study phenomena on our time level. It cannot be used to study the phenomena of the past or phenomena of the future. Consider for a moment the various predictions that are made of life a decade, a half-century, or a century in the future. Compare the predictions that were made of life in 1980 10 years prior to that time, in 1970. You will find that life in 1980 was far different from that envisioned just a decade prior to that time, and it is already quite apparent that life in 1990 and in the year 2000 will be different from that which was anticipated and predicted in 1980. The reason for this inadequacy is quite simple: the genius of the scientific method, controlled experimentation, cannot be employed. An illustration of the problem is the conflict between *Global 2000* and *Global Future: A Time to Act*. Both seek to describe the world of the year 2000, now less than two decades away. The former presents a very pessimistic picture, with vastly increased populations, more pollution, and an increasing gap between the "haves" and the "have nots." The latter predicts a world that will be less crowded, less polluted, more stable ecologically, and less vulnerable to resource-supply disruption. The authors and contributors to both reports are competent, highly respected individuals, but the pictures they draw are sharply contrasting predictions.[4]

The same thing is true of the past. It is simply impossible to reconstruct the environment of the past and to determine what effect it would have on living things. We cannot use the experimental method to study the changes from one life form to another, which are reported to have occurred in the past. We cannot determine the cause of the extinction of various forms.

All this does not mean that speculation regarding the past or the future is useless. It has its place and its value. But scientific reconstructions of the past or scientific predictions of the future do not have the validity and reliability of scientific conclusions regarding phenomena on our time level. The explanation is quite simple: the scientist does not have access to his most effective tool—controlled experimentation—when he deals with the past or with the future.

There are other areas, too, where experimentation is difficult or impossible. This is certainly true of such fields as astronomy and astrophysics. Sometimes the multiplicity of causes creates problems. In physics and chemistry we usually have one or a few causes for the effect we are studying. In biology we have what one scientist has called "a whole hatful." This is true to some extent of such fields as ecology, where today the role of interspecific competition is being debated.[5,6]

It is interesting that this debate should center on the role of competition, one of the cornerstones of Darwinism, and that one of the participants in the debate should charge that current ecological theory emphasizing the role of competition "has caused a generation of ecologists to waste a monumental amount of time."[7]

Indeed, there are problems even when the scientist seeks to apply the experimental method on our time level. To be valid an experiment must involve both the test and a control. These must be as similar as possible in order to eliminate differences and to establish that the difference in results is due to the difference in treatment of the test and the control. The ideal subjects for experimentation in man are identical twins. Their identical background eliminates genetic differences as the cause for the difference in the results.

Obviously, an adequate number of identical twins is rarely available, and the scientist usually solves this problem through a process of randomization. By choosing subjects at random and by using enough of them, he believes that he can eliminate differences which may result from causes other than the one he is testing.

But there are other problems as well. One of these is the possibility that members of the test group will react merely because they are part of a test. It is a sort of Hawthorne effect. The participants are the objects of special attention, and that attention may bias the results. The very fact that they are receiving a new medicine may reduce the likelihood of their contracting the disease it is supposed to prevent.

It is to overcome this bias that we not only administer the medicine to the test group, but we provide a placebo for the control group, a harmless substance which has no known medicinal value. If the benefit is due merely to being a part of the study, both those who receive the medicine and those who receive the placebo should show a reduced frequency of the disorder.

But there is also a very real possibility that the experimenter himself may inadvertently influence the results. If he is administering both the drug and the placebo, he may indicate to the control group without being aware of it that they are receiving the placebo, not the drug being tested. In order to overcome this bias, we frequently use a "double blind" approach. In this circumstance neither the subjects nor the experimenter knows who is receiving the drug and who is receiving the placebo.

There are times, too, when the use of a test and a control group cannot be morally justified. One such situation is that existing with the Pasteur treatment, which is generally regarded as an effective preventive of rabies. Yet the fact of the matter is that its effectiveness against this disorder has never been tested in the way in which the Salk vaccine was tested over against polio. The reason is quite simple. If our understanding of the nature of rabies is correct, it is 100 percent fatal. To demonstrate the efficacy of the Pasteur treatment, it would be necessary to administer the Pasteur treatment to a test group and withold it from a control group. Both groups would be inoculated with the rabies virus, possibly through contact with a group of rabid animals. The test groups would receive the Pasteur treatment, and, if our theory is correct, they would all recover. The control group would receive no treatment or a placebo, and, if our theory is correct, they would all die.

Obviously, such a procedure could not be morally justified. Indeed, there are some who question the propriety of the test and control technique that was used to demonstrate the effectiveness of the Salk vaccine, since a substantial number of individuals in the control group who did not receive the vaccine developed polio.

There are some interesting consequences of the lack of experimentation with the Pasteur treatment. There have been instances of individuals who have been bitten by a rabid animal, who have not received the Pasteur treatment, and who nevertheless have survived. To "save" our theory, we have assumed that in these cases the virus was not introduced by the saliva of the rabid animal into the wound. There have also been instances of individuals who have received the Pasteur treatment and have succumbed. In these cases we have postulated the introduction of the virus directly into a nerve and have assumed that in this case the treatment is ineffective. In both these cases we have sought to save the theory. This is characteristic of scientific procedures. Scientists are conservative, and they are also emotionally involved with explanations they have come to accept. Their inclination is to seek to fit observations into the framework of the accepted explanation rather than develop a new explanation.

Coefficients of Correlation

It should be evident that there are many situations to which we cannot apply the experimental method because of difficulties in setting up test and control. One very common procedure then is to seek to establish cause and effect relationships through coefficients of correlation. We deal with large numbers of people and seek to determine whether we can establish cause and effect relationships through the correlations we find.

It is generally agreed that coefficients of correlation may indeed suggest cause and effect relationships, but it is also agreed that they do not establish cause and effect relationships. One way scientists amuse themselves in their spare time is to develop coefficients of correlation which suggest impossible or implausible cause and effect relationships.

Extrapolation

A similar method is that of extrapolation. We determine the direction of change and its rate and then proceed to predict the outcome years hence or years ago. While interpolation is valid, extrapolation is quite hazardous. Mark Twain described the process in his "Life on the Mississippi" as follows:

> In the space of one hundred and seventy-six years the lower Mississippi has shortened itself two hundred and forty-two miles. This is an average of a trifle over one mile and a third per year. Therefore, any calm person, who is not blind or idiotic, can see that in the Old Oolitic Silurian period just a million years ago next November, the lower Mississippi River was upward of one million three hundred thousand miles long and stuck out over the Gulf of