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THE PROBLEM OF TIME

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ABSTRACT

The short age view, specifically the conflict between the evidence for a short age position and the eons of time concluded necessary for evolution to have occurred, is a major area of criticism against creationism by the anti-creation movement. All time estimates essentially examine current rates of physical change and assume that the rate found is fairly consistent, then extrapolate backwards. This is a difficult task that is not privy to replication.

Time is clearly a human limitation and the Scriptures teach that it does not circumvent or impede God's will. As soon as a thought is conceived by Him, it is spoken of as not only put into action, but completed because, for all practical purposes, the conception of a thought by God is fully equivalent to the completion of the action. The problems of trying to "harmonize" the changing view of the universe, as conceived by scientists and the unchanging Scriptures, are elucidated relative to time.

The time factor is crucial in that, given the essential possibility of a feat, a major difference between what mankind and God can achieve is the limitation of time. Given enough time, a mountain of any size could be moved by humans.

INTRODUCTION

The question of time is now a major issue to effecting the creation-evolution controversy. The concern is primarily how much of it is available since the universe came into existence, and how long the physical creation could, did, or must have taken. We can here only briefly summarize some of the major concerns involved in the debate on this extremely complex issue and present what, in our view, is the most tenable position that is faithful to both the scientific evidence and the Biblical record.

Until widespread acceptance of the Uniformitarian geology of Charles Lyell, it was widely believed that the earth and the universe was rather small and relatively recently created (8). The discovery that the universe is far larger than previously believed, and the fact that light now (and it is assumed in the past) travels at a fixed speed in a vacuum, are major justifications for the claim that the universe's age can be measured in billions of years. To account for the apparent vast distances in the universe is not the only reason, though, that much time is needed. The fact that animal and plant life is extremely complex and, therefore scientists reason, must have somehow slowly developed, is another major reason that eons of time is needed by secular, evolutionary scientists today.

The two basic alternatives to origins are: (1) the universe and life was created by an outside intelligent being or force (creationism), or (2) somehow everything "created itself" via the outworking of eternally existing natural laws and/or forces now present in the universe (naturalism). Most scientists accept the naturalistic explanation primarily because they refuse to put credence in the supernatural view, and not because of empirical evidence. The young earth position, though, is the most valid presumption to proceed from because it serves as a geochronological null hypothesis.

Many secular scientists adopt the position that "a creator created" is "unacceptable" inside the realm of science because it contradicts orthodox science belief structure and its a priori assumption that a creator does not exist. They thus are forced to conclude by default that the universe created itself. As Nobel Prize Winner, Jacques Monod (10) said, humans are a "freak biological accident," owing their existence to nothing but a

"roll of some cosmological set of ice." This view eloquently represents the naturalistic evolutionary position.

It is apparent that not much, if any, biological evolution is presently occurring. Further, no evidence exists of any major, clear evolutionary structural changes in the recent past in either plant or animal life. Nor is it fully understood how evolution could have taken place. Evolution, reason its supporters, must have therefore been extremely slow and this is why change is not apparent to human observers. The believers must assume this in order to accept evolution in contradiction to lack of direct evidence for the theory.

TIME

From the above givens, scientists conclude that an immense amount of time is necessary for evolution to have occurred. Without great amounts of time, evolution is not possible. As researcher encountered more and more problems with evolutionary theory, it was necessary to move back farther and farther the hypothetical origin of life, or to invoke the "time solution" and therefore the date of the creation of the earth and universe. For this reason, for the past 100 years, the assumed age of the earth has doubled approximately every twenty years. It is now commonly estimated to be over 4.6 billion years of age, a date based on over a dozen assumptions (12). The origin of life has been pushed back to give evolution the time it is now realized is needed for it to have occurred. As research reveals evermore complexity in the living world, instead of admitting a creator, evolutionists solve this problem by invoking what has become an explanation for most all evolution difficulties, namely more time. Time itself has become a god, as Wald notes (18):

Time is in fact the hero of the plot...What we regard as impossible on the basis of human experience is meaningless here. Given so much time, the "impossible" becomes possible, the possible probable, and the probable virtually certain. One has only to wait: time itself performs the miracles.

Often, simply the addition of time causes even the unbelievable to become, in human eyes at least, believable. The view that anything becomes possible, given enough time, and more time causes everything to become not only possible, but probable, is mental argument, not scientific proof.

RATES OF CHANGE

The decay measurement system is achieved by measuring the rate of decay of some element or compound, and then interpolating backward. The major difficulty in estimating the earth's age is the assumption that current rates of change were valid in the past. If the rate was significantly different yesteryear (and most rates vary, depending on external conditions) then the entire set of assumptions used to estimate its age is suspect (12). Unless someone existed in the past to measure the time from creation to today by using methods which are valid and consistent, it is difficult to date for certain the origin of many, if not most, events that existed before time was accurately kept by humans. Only that which humans can date by direct observation have a known age, such as the birth of a child or the manufacture of an automobile.

Time is also difficult to understand in that we have no absolute independent outside standard by which to measure (1). Comparisons of our measurements with a standard outside of the system, which is both accurate and not affected by it, is necessary. Some evidence exists that time is not consistent, i.e., an hour today is not equal, according to absolute standards, to an hour that existed a thousand years ago. If everything is "linked" to time and time variable, everything slows down or speeds up together (14). This assumption may not be true, but must be considered to understand time. Some evidence also exists, although it is not without its problems, that the speed of light is slowing down (the hypothesis is called "tired light").

AS APPLIED TO UNIVERSE AND EARTH AGE

The current scientific opinion is that the universe is about ten billion years old (10^9). This estimate is based on two major separate lines of evidence, both of which have severe limitations. The first is the astronomical observation which indicates that all heavenly bodies are moving away from the earth at a speed proportional to their distance, implying an expanding universe. By extrapolating the movement backwards in time we find that, at about ten billion years ago, matter would be concentrated to a pinpoint, the point of the hypothetical big bang. Thus, it is assumed that current conditions took

about ten billion years to develop. We calculate the age of the universe by assuming the opposite of the Big Bang scenario, and projecting backwards.

The second line of reference is based on current rates of radioactive decay. The atoms of certain elements occasionally emit a particle (are radioactive) and this event changes the emitting atom into another element. The emission event is unpredictable, but for a given time period the probability of its occurrence is consistent. Thus, given a sizeable mass of radioactive material, a fraction decays each day and this amount is predictable if certain conditions are known. By extrapolating backwards, an age of about ten million years is again estimated for our galaxy. Of course, although these two methods agree, other methods do not.

The assumption of an expanding universe is based on the observation that the spectral lines shift toward the red end of the spectrum, called red shift. This shift is, in theory, caused by the universe's expansion, but could be caused by other factors. The major problem with the theory is the assumption of a constant velocity of the rate of expansion. In the early stages of the universe when conditions were different, this rate may well not have been the same as now. The radioactive decay assumption "is even more uncertain" (7). We cannot know for certain the original composition of any piece of matter, nor can we rule out the possibility of contamination or a change in the decay rate.

The most distant galaxy ever observed is estimated to be 14.5 billion light years away. Thus, if this is true, the light we are now seeing is what the galaxy looked like 14.5 billion years ago. As this light shows it to be a mature galaxy, it is obviously likewise billions or even trillions of years old. Thus, according to these estimates, the universe may not be 17 or 18 billion years old, as hypothesized, but far older. As the sun and earth are believed to be only 4.6 billion years old, there are thus problems in explaining the newness of our solar system. Rather than answering questions, these discoveries raise even more, causing difficulties for the current theories, all which must be classified as speculation, but which are often not.

DECAY DATING SYSTEMS

The two basic types of dating methods are relative dating and chronometric or absolute dating (which is actually not absolute but, theoretically, more accurate than so-called relative dating).

Relative dating of fossils involves estimating the age of teeth or bones themselves. The three common methods are called the F-U-N trio, or the fluorine, uranium and nitrogen tests. The fluorine test is based on the assumption that bones and teeth slowly undergo a chemical transformation in response to the mineral content of the ground water of the area in which they are buried. The fluorine in the ground water is slowly absorbed by the bones; thus the older they are, the higher we would expect their fluorine content. Of course, the fluorine content of the water itself may slowly change, and given the assumption that one is attempting to measure bones which are hundreds of thousands (or even millions) of years old, this rate is very difficult to determine. Thus, this test is most useful for specimens from a single site, and only if the assumption that the fluorine content has remained constant is valid. Given the immense geological changes hypothesized to have occurred in the earth's history, this is a most problematic assumption.

The nitrogen process is the opposite. Older bones have a lower nitrogen content because the surrounding environment gradually absorbs it. Thus the smaller the amount of nitrogen found, the older the bones are hypothesized to be.

The uranium test uses a rationale similar to the fluorine test and suffers from similar problems. Present in ground water, it is slowly absorbed by bones and teeth. Theoretically, the longer they remain in the ground, the greater their uranium content. The relative dating method admittedly "can give only tentative evidence" of the date of their origin (4). Obviously, using the three methods together helps confirm the reliability of any one method if the three dating techniques agree, which in many cases they do not. The so-called Chronometric dating methods include radio-carbon or carbon (C^{14}). Its half life is relatively short, estimated at 5730 ± 30 years and thus this method is limited for research on fossils that are allegedly fifty thousand or less years old. And as Van Der Merwe notes unfortunately for C supporters (17), "the accumulation of Carbon-14 age measurements for known-age samples (primarily tree rings) has provided a body of data which shows small but significant variations from the expected results." The small amounts of C-14 often remaining in the bone make extrapolation difficult.

Potassium argon dating is only one of several Chronometric methods. The radioactive form of potassium (K-40) decays into argon (Ar-40) at a known rate. The rate of disintegration is thus calculated by estimating the potassium/argon ratio. The half life of K-40 is estimated at 1,330 million years; it thus can be used to date samples aged from 5,000 to about three billion years. Potassium is common in igneous minerals, volcanic glass, and even some sedimentary rocks. The assumption is that, by dating minerals, one can fairly accurately estimate the age of various objects (especially volcanic ash) entrapped in the stone. The K-Ar method though, cannot be used to determine the date of fossil specimens themselves, only the minerals and rocks surrounding the fossils. Thus contamination and assumption is a major source of possible error.

One of the most modern dating techniques is the fission track method. Used only since the 1960s to date fossil deposits, the principle is the same as the K-Ar method. Minerals assumed contemporaneous with the deposits in which the fossils were located are dated, then the estimates are extended to the object in question (5). It can be used to date a far wider variety of objects than the K-Ar method, even glass or some crystals. The theory is that as fission occurs (a process which results from the division or breakdown of uranium atoms, i.e., the process of disintegration) a scar or track is left on the sample which can be detected through a microscope after it is chemically "dye." One can then estimate the age of the material by counting the number of tracks and comparing this to the uranium content of the sample. U-238, the most common uranium isotope, decays at a slow and, evidently, steady rate (this assumption is crucial for the method to be valid). The K-Ar and fission track methods are often used in conjunction in order to check for concurrence, but as they are both based on similar assumptions, they both could be equally inaccurate.

NOT ENOUGH TIME

A creationist, while discussing creationism with a noncreationist scientist, mentioned that the short age position was one aspect of creation science that he had no problem accepting. As usually the short age world view is the most difficult aspect of creationism for outsiders to concur with, he was asked to explain. The problems of natural selection, the fossil records' support of creationism, etc., are usually far easier to grasp in that most scientists are aware of the difficulties in utilizing the data in these areas to support evolution. The reason that the creationist had no difficulty with the short age position was that 4.6 billion years and six literal twenty-four hour days, he felt, were both far too short for evolution to take place. He gave the illustration of a family looking for a new residence. After touring a beautiful home and learning the price was \$180,000, they concluded that they could not afford it. Their little boy piped up that he had a dollar in his pocket and that, with the addition of his money, they could buy it. The parents smiled and stated that the dollar was a long way off from the purchase price. A few minutes later the boy exclaimed that he had a whole piggy bank full of money at home and now they had enough to buy the house! The parents only smiled, noting that there was not much difference between the dollar and a piggy bank full of dollars (which might amount to fifty dollars). When the time necessary for evolution is considered, there likewise is not much difference between forty-two hours and 4.6 billion years.

Creationists are themselves divided about this subject. About half of those who identify themselves as "conservative creationists" are in the "old age" camp, some concluding that the creation of man can be scripturally placed back to 20 to 30,000 or more years ago and the creation of animals 50 to 100,000 years previously (11). As Menton summarizes (9):

An assuming misconception is...that creationists believe the world is 4,000 years old. Creationists disagree on the age of the earth. Almost all agree the issue of the age of the earth (and universe) is more important to the evolutionists. Evolutionists MUST have long periods of time to account for all the evolution they say has occurred. Creationists do not need to be limited in this area. See Bill Keith's book, Scopes II: The Great Debate, on how the media has distorted the issue of the age of Earth in the creation/evolution controversy.

Most young age creationists, in contrast, conclude that the earth and the entire universe was created about 10,000 years ago, although a minority argue for the 6,000 figure. Other short age creationists reason that 25,000 is closer and some even argue for as long as 100,000 years. Peet summarizes the problem of time among creationists (13):

Though the age of the earth is hotly debated among creationists, it is not crucial to the creationists' position except as an understanding of how Genesis 1 should be interpreted. To the evolutionist, the age of the earth is crucial—it must be very old (e.g., 4.5×10^9 years) to

give his mechanism even a chance of consideration! Radiometric analysis is his usual weapon, especially isochrons and pseudoconcordance curves.

The main impediment to accepting the short age view is not the empirical evidence, but the unconscious, all-pervasive long age world view which has been an integral part of our science culture and tradition for over a century. A world view is a set of general ideas about origins, often called a world picture or Weltanschauung. Our personal world view is learned by absorbing bits and pieces of information from others around us when we are very young. We then interpret the new information (called accommodation by Piaget) in the light of this world view. New information that does not generally negate it is fit into our schema, modified by what was learned before. New information that openly contradicts our world view is often openly rejected or dealt with in such a way as to maintain our existing view. Thus, information which is evidence for a relatively recent creation is often discounted or rejected wholesale because it does not fit in with what we learned earlier. Importantly, our own world view seems normal, natural and obvious to us. Most persons are skeptical or even repulsed at views that in large degrees contrast theirs.

The short age position is thus difficult for many people to accept because for most of their lives they have held to a long age world view of schema. The short age view seems strange, even incredulous, and they thus tend to immediately reject it as untenable..

THE HEBREW WORD "DAY"

The key problem in understanding the Biblical record is the interpretation of the word "day" (Yom in Hebrew) in Genesis. The short age creationists often interpret "Yom" as referring to a literal twenty-four hour day. Thus, in this view the total creation occurred within a very short period of time. Many interpret the word day as symbolic for a period of time far shorter than twenty-four hours. It could be that the universe and everything in it was created in a picosecond or less (a picosecond is one trillionth of a second). The Scriptures indicate that no time whatsoever exists between God's will and its reality. As soon as He wills it, it exists or occurs. Time, in this view, is not a limitation of God but of humans only. And many researchers have concluded that there may come a day when it will not even be a limitation of humans, or at least will be far less of a limitation (16).

Those that argue that the creation did not take any time at all usually stress that time is a human constraint and God transcends time. He said, in Genesis, "Let it be," and it was. God wills something into existence, and as soon as He decided it will exist, it does (15). No "time space" is required between His will and its fulfillment. Thus, there is no need for time to exist between God's willing the universe into existence and its actual coming into existence. For God there is no "before" or "after," only "now." Time is not a limit, nor even an impediment. God is not a superhuman, able to travel superfast across place, but fully transcends space and time, and can move to any point in time or space at will, instantaneously. As Christian notes (2):

In the mind of God, there is no "before" or "after;" there is only a "now." In "God's experience" all events occur simultaneously. To put it another way, all the past and all the future "that is, our past and future" exist together in God's present. Thus, when Augustine elaborates on the doctrine that God foresaw the Fall of Man, God really didn't foresee anything, as though he were peering ahead through time (as we would have to) and saw what had not yet transpired. In God's all-inclusive present, "future" events are taking place now. God didn't foresee he merely saw. Likewise, he doesn't foreordain an event; he merely ordains (causes) what he sees happening. This to Augustine, is what is meant for God to be omniscient and omnipotent.

For God comparatively little difference exists in creating the entire universe in ten billion years, in six twenty-four hour days or in a nanosecond or less. If God is omnipotent, He could as easily create the entire universe within a week as in a picosecond. The Scriptures make it clear that "nothing is impossible with God" (Mt. 17:20; 19:26; Mt. 10:27; Luke 18:27; and Heb. 6:4, 6:18, 11:6). Time is a human commodity which is both a blessing and a curse, a gift and a punishment. Nor is there even much difference, when viewed from the perspective of eternity, between six twenty-four hour days and 4.6 billion years. God could have allowed either time period intervene, but there is no reason for any amount of time to elapse.

Others argue that, while it may be possible for God to have created the universe in a short period of time, He may have chosen not to do it that way. Because something is possible for God to do does not mean that He will, or did do it in that way. As Levi stresses (7):

Science does not claim a 10 billion year history of the world. Such a claim is beyond its scope. It only claims that, if we assume that the present laws of nature were always in force, then the world is that old. But, according to the simple meaning of the Torah's narrative, the world—and the laws of nature with it—were created 5,740 years ago. This denies the non-scientific assumption of the scientists and does not at all quarrel with their scientific reasoning. In other words, the Torah does not at all contradict the claims of science, but only the hypothesis of scientists, which is not science at all.

In other words, the universe could have been created with the appearance of age, just as Adam was and, even if the assumptions on which the evidence for a ten billion year history for the universe are correct, it does not at all follow that, indeed, the universe was in fact created ten billion "present time" years ago. If the creation of the universe were perfect from the start, existing as a fully functioning integrated unit, with each part dependent on the others as is true of living organisms, certain evidence would clearly indicate a multi-billion year age, given that this appearance is a by-product of functionally integrated complexity. Likewise, if Adam was created to function as a mature adult, he would appear about thirty years old and, if medically examined, would exhibit the scientific evidence of a thirty year old. And a medical examination and tests of such a man would both conclude and have to treat him as if he was, in fact, thirty actual years of age, even though he may be literally a month old. Functional completeness, some argue, is a requirement for both a working human body and a working universe. The earth and the sun, the solar system, the galaxy, etc., all function as a unit and each cannot exist without the other parts. While some find this hard to accept, it is, indeed, no more difficult to comprehend than God as the creator. If God can and did create the universe, obviously a universe of a certain design and a certain appearance could be created. The assumption that God created carries with it the requirement that He created a certain kind of universe. Of course, whether he did so is another question. This paper simply explores the ramifications of various viewpoints on the problem of time. As St. Augustine reasoned, since God created all that exists, including time, He existed before time and will exist after time, thus He must exist outside of time and is not limited by it in His creation (2). If physical realities can stop or slow time, as is the evidence from black holes and modern physics, why cannot God control it (16)?

SUMMARY

A major concern with time relative to the creation-evolution controversy is that, to a large degree, compared to the never-ending time line, the difference between 10,000 and 4.6 billion years is largely irrelevant. Either amount of time, according to many researchers, is not enough for evolution to occur (6). The difference is the contrast between a penny and a dollar in purchasing a new Ferrari. Compared to the time needed by naturalistic evolution, especially compared to the never-beginning and never-ending time line, the differences are irrelevant.

Therefore, scientists must explain how life arose in the short period of time they now feel they have—short referring to the accepted 4.6 billion figure. Many scientists concede that this is by far the most difficult aspect of their theory. The construction of complex life molecules, especially the right molecules in sufficient concentration, to form life-building blocks would have been incredibly difficult given any time span. Allowing the longest time calculations available, the first step is by far the most difficult one. It is estimated that life arose from lifeless molecules less than a billion years after the earth was formed—a step often viewed as impossible, even by many secular scientists. By comparison, scientists estimate that it must have taken two billion years alone for algae to evolve into, as one author stated, "Anything more complex." And researchers have recently hypothesized that, instead of life arising in the primordial soup, it must have evolved from the "clay" of the earth because this substance triggers chemical reactions which they assume were necessary to produce the incipient strands of protein and DNA necessary for life to develop. These discussions illustrate how difficult it is to speculate on life's origin.

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