

ARTICLES

WORLDVIEWS AND PREDICTIONS IN THE SCIENTIFIC STUDY OF ORIGINS

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ABSTRACT

In scientific research it is of value to be able to make predictions of what results are expected if a particular hypothesis is correct. In the study of historical events and processes, the scientist's worldview will influence some types of predictions in fields such as biology or geology. This article claims that both a naturalistic worldview and a biblical worldview can make predictions that can be examined by the methods of science. The worldview that is based on a literal reading of the biblical account of earth and biological history makes some inescapable predictions. Although science cannot examine any possible divine influences in history, science can often examine evidence for or against historical events suggested or required by a biblical worldview. To seek to test these predictions is not questioning the Bible, but is examining our predictions based on our reading of the Bible. A series of such predictions is described, and it is proposed that testing these predictions will lead to scientific progress, since a more accurate worldview is expected to lead to more accurate predictions.

SCIENCE AND PREDICTIONS

However one defines the scientific method, the role of predictions is of significance. A researcher, from his/her knowledge of a topic, makes a prediction of a phenomenon to be found or verified by future research. The scientist, of course, is not trying to be a prophet. Predictions provide practical ideas, hypotheses, to be tested. We cannot know ahead of time whether a given theory will withstand the test of time and accumulating data. If a prediction, based on a theory, is verified by continuing research it greatly increases confidence in the theory from which the prediction originated. The probability of making successful predictions is expected to be directly related to the correctness (in an ultimate sense) of a theory, paradigm, or worldview.¹

The test of an individual hypothesis or theory may or may not turn out in the long run to be correct, depending on the adequacy of the design of the test and/or of the accessible data at that time. Theories and the paradigms

from which they come are really tested in relation to each other, and only over the long haul rather than in a given short interval of research.

The following discussion will only address these processes in the study of origins and history, and not in study of current, ongoing processes in biology, chemistry, or physics. I will compare predictions coming from two very different worldviews, one of which is anathema to many scientists. This analysis begins with the assumption that naturalism is not the only viable worldview,² and that an understanding of the Bible as a reliable document has worthwhile, factual things to say about geological history.³

Science cannot study miracles and does not properly invoke miracles to explain what happens, e.g., in the chemistry or physiology laboratory. But what about study of history – of events that occurred or are presumed to have occurred? Is there any good reason why we cannot consider that just maybe the events of earth history have been influenced by unique events (even supernaturally initiated events) which left a mark on the geological record? A mark that we can study with the methods of science.

PREDICTIONS WITHIN A SECULAR, OR NATURALISTIC WORLDVIEW

Basis for making predictions in the naturalistic worldview

This worldview, or the scientific “standard model,” is based on exclusion of a God or Creator from our explanations of nature. According to the standard model all of the processes of origins and earth history occurred essentially by processes observable today, through the unaided laws of chemistry and physics. This worldview includes the following concepts:

- a. Life has been on earth for millions or billions of years.
- b. All taxa of organisms originated through the evolution process.
- c. Geologic history has proceeded by natural processes over many millions of years. Whatever catastrophic events may have occurred did not change the slow march of deep time (hundreds of millions of years).

Underlying philosophy for studying nature within this worldview

Secular or naturalistic research must follow the principle of methodological naturalism, and never consider whether creation or a biblical global flood was part of the historical process. They are ruled out by definition, because it is commonly believed that to consider such processes or events would not allow unbiased scientific study.

Predictions from the naturalistic worldview

If the philosophy described above is followed, it leads to a number of predictions, including the following:

- a. Radiometric dating gives essentially a correct view of time for the history of earth, the universe, and life.
- b. Biological phylogenies, even if not exactly correct, are at least approximate descriptions of the pathways of evolutionary change. Separate, polyphyletic origin of major taxonomic groups will not be supported by the accumulating evidence.
- c. Geological deposits were formed over vast amounts of time, and the process can be best explained by comparison with geological processes observable on earth today. Although other processes could have occurred, hypotheses that imply a significantly different time scale or that question the overall evolution theory will not be successful.
- d. Research that attempts to explain life or geology on a different basis (e.g., a Bible-based theory) will not succeed in the long run.

More detailed predictions could be made, but they will fall under one of the broad categories above.

MAKING PREDICTIONS WITHIN A BIBLICAL WORLDVIEW

We will now consider a very different worldview and whether it can be utilized as a foundation for at least some types of scientific research in the study of origins. This research will not try to study miracles, but will actively consider proposed events even if they carry the implication of being initiated by a supernatural process. If those events have left some evidence, that evidence can be analyzed by the scientific process.

The basis for making predictions within a biblical worldview

A Bible-based understanding of earth history since the creation week leads to several distinct predictions and hypotheses. The predictions result from biblical concepts (stated as descriptive accounts of nature. They imply a Creator, but that aspect cannot be explored by science). Some of these can be examined through careful geological or biological study. The predictions of a biblical worldview arise from the following concepts.

- a. Life (and also the Phanerozoic [Cambrian to Recent] rock record) has been on earth only for several thousand years.
- b. Many taxonomic groups of animals and plants were created during the seven-day creation week, before the formation of

the fossil record. Evolutionary change has occurred only within each of these groups.

- c. A global flood catastrophe with significant geological effect occurred some time after the creation.

For those of us who accept the Bible as an inspired book, with a factual account of history, the above concepts lead to several very definite predictions of what science should be able to find, if we can access sufficient evidence. If it has only been thousands of years since the literal creation week, a number of specific predictions are inescapable. A process that takes hundreds of thousands or millions of years is incompatible with a Phanerozoic time span of thousands of years.

Is this a philosophically defensible methodology?

The approach described here involves the study of origins (history), and rejects the application of methodological naturalism to the determination of what questions can be asked about the past (e.g., can we ask whether life was created – science does not properly dictate whether or not that question can be asked), or what events are legitimate to be considered (e.g., a global flood – science must be free to consider all the options, or it becomes closed-minded).

Does this approach inappropriately mix science and religion? Will it introduce a religious bias into science? The answer becomes clear with some consideration of the logic that drives conventional science (the standard model).

Science always begins with some worldview (or paradigm), even though many scientists are not much aware of this. Predictions are made, based on the foundation provided by the worldview. This process puts the researcher's worldview or theory on the line, to be tested. Of course worldviews are not directly tested, but the theories or hypotheses derived from them are tested, one at a time, according to whether accumulating evidence supports them and the predictions are supported.

To use our biblical worldview as a basis for scientific predictions is compatible with the scientific process because it does exactly what science is supposed to do. It puts our theories and hypotheses out in the open to be discussed, to be supported by accumulating evidence, or refuted by the evidence. Some may object to this, but if we have confidence in the Bible and are seeking for truth, why should we not be brave enough to do it? We are not testing the Bible, but are testing humanly devised predictions that arise from our understanding of a biblical worldview.

Of course (because we don't understand nature adequately) anybody's predictions may not work out as expected. In our naïveté we may make un-

realistic predictions that leave us searching for better answers, but that can happen to any scientist, in any worldview. Science often follows a circuitous path before we find adequate explanations. We cannot expect the process to be a simple one, when we study complex topics.

When our predictions are correct or at least close, the result can be scientific progress. A novel worldview, like a biblical worldview, is likely to lead to new ways of thinking and new predictions, and thus to new discoveries. The new data may reveal aspects of geology or biology that were unexpected, and the predictions thus result in discoveries that may not have occurred without the new approaches coming from a different worldview. That statement can only be affirmed or refuted by experience in pursuing the research approach and the predictions suggested here. The more correct (accurately matching reality) the worldview, the more of its predictions we expect to be verified.

Predictions based on a biblical worldview

The following is a list of some representative predictions if a biblical worldview is followed:

1. Ratios of radiometric parent and daughter isotopes have changed through the geological column for some reason other than the passage of large amounts of time. Deep time for at least the Phanerozoic (Cambrian to Recent) is not real.
2. Many geological deposits will turn out to have been formed much more rapidly than currently interpreted. Deposits currently considered to be a long series of small sedimentary events, or the result of long, slow accumulations of sediments will eventually be seen as a smaller number of large-scale sedimentary events.
3. Since the Phanerozoic geological record formed rapidly, it can be expected that more sediment was unconsolidated (not cemented) when buried by additional sediments than would be expected in the standard model. Because of this we predict there will be many cases of structures formed by large-scale, soft-sediment deformation. There will be, e.g., more structures than normally expected that are, or are similar to, features such as seismites or injectites.
4. Some major portion of the Phanerozoic record was deposited by much more rapid and catastrophic processes than conventional theory expects. As this possibility is taken seriously, I predict it will be found that some, and maybe many, sedimentary deposits were formed by processes not seen, or at least not adequately seen, in modern analogues.

Example: Modern desert sand dune analogues are far from adequate for explaining ancient cross-bedded sandstones. To name one reason, in modern desert environments the wind blows the sand around and produces complex structures in some dunes, but does not make vertical series of laterally extensive multiple cross-bed sets as are seen in many ancient sandstone deposits, such as the Permian Coconino Sandstone or the Jurassic Navajo Sandstone in North America.

For much the same reason there will be more examples found of fossil assemblages that resemble a modern analogue, but were formed by a process very different from processes we observe today. The reason for this is the strong bias in the standard model to interpret ancient deposits by modern analogues. In this situation dependence on deep time may not stimulate deeper, careful study if a modern analogue appears to offer an explanation.

Example: This concept is illustrated by the Yellowstone fossil forests, that on first examination appeared to be a series of *in-situ* forests, each buried and killed, followed by growth of another forest on top of its remains. This explanation implies long periods of time for successive forests to grow and be killed and buried. However, more careful examination revealed much evidence for trees that grew somewhere else and were transported to their current location, deposited one layer on top of another.⁴ The succession of tree levels was the result of water transport and accumulation in successive levels, which could happen in a short time.

5. Many structures that are currently interpreted as formed by biological or other slow processes actually have some other explanation.

Examples: Stromatolites (dome-shaped structures with layers understood as accumulation of sediment on growing cyanobacteria) are believed to take at least a few years to grow. If there are several levels of stromatolites, one above the other, this sequence could not form within a one-year flood. But it cannot be assumed that every sedimentary deposit containing stromatolites was formed some time other than during the one year of the flood, since there isn't assurance that we understand how all the structures currently labeled as stromatolites were formed.

Another such feature is evaporites – layers of chemical deposits believed to be the residue left after a large volume of water evaporates, which takes a very long time. The prediction is that many or most presumed ancient evaporites formed by some other process than concentration of salts by evaporation of water. Subaqueous brine

flows have been suggested as an alternative explanation for some evaporites. It will be scientifically productive to explore explanations such as this.

6. Features in the sedimentary record interpreted as Milankovich cycles (cyclic processes controlled by variation in solar irradiation of the earth, representing cycles of hundreds to tens of thousands of years each) did not result from such long cycles. They formed rapidly from some other process. Other geological features or cyclic processes that seem to require long time periods were also formed by some rapid process.
7. Fine laminations that are interpreted as varves (one lamination per year over long time periods) will be found to not be annual layers. Other explanations will be found that will explain these finely laminated rocks (example – the laminated parts of the Eocene Green River Formation).
8. A global flood theory will be far better at explaining modern land forms than contemporary conventional geological theory (in the field of geomorphology). Some land forms not currently adequately explained (e.g., the Straight Cliffs and the Grand Staircase in Utah) will be understood as best explained by massive water flow, not by the slow erosion processes that normally occur in the modern world.
9. Better understanding of land forms will allow analysis of erosion events from massive water flow at the end of the flood or at some later time, in contrast to slower processes over longer time periods. We predict that as these features (and other data) are better understood it will be possible to identify the sediments deposited during the year of the flood, and those formed before or after that event.
10. Plate tectonics and the movements of continents in much of the past occurred orders of magnitude faster than at present.
11. In the study of biological evolution there will be increasing evidence that evolution does not produce changes beyond the genetic potential created in each group of organisms. Much or most of this microevolution and speciation is not primarily the result of random mutations, but is facilitated by the genetic potential already present in organisms from the beginning.
12. The theory that the sequence of appearance of fossil groups in the fossil record was the result of large-scale evolution will eventually be refuted by new evidence. This prediction may not be an easy one to test, because we have limited prospect of determining what processes would occur during a global flood.

13. As research proceeds in biochemistry and molecular biology, it will be increasingly evident that the likelihood that life ever arose without an intelligent Designer is roughly inversely proportional to the growing body of data.
14. As genomic studies yield more details of genetic processes and genomes of more types of organisms, evolutionary phylogenies or evolutionary trees (above the family level, roughly) will be shown to be wrong.

Fulfilled predictions

- a. For decades all DNA was considered to be either coding DNA (defining the structure of a protein) or junk DNA (functionless leftovers of the evolution process). Human DNA was interpreted as about 98% junk DNA. Until recently only creationists have predicted otherwise. In the 1970s molecular biologists, friends of mine at Loma Linda University, were predicting that “junk DNA” will turn out to be functional and important. This prediction resulted from their belief that life is the result of the work of a very intelligent Creator. In recent years it has become evident that some junk DNA is functional regulatory genes, and in September 2012 the results of the massive ENCODE genetic study revealed that most or all human DNA is functional, and “junk DNA” is no longer a useful concept.⁵ This is one of the key predictions based on a biblical worldview that has been confirmed using the methods of science.
- b. In 1992 a paper in *Spectrum* by Gary Gilbert claimed that the same pseudogene (a gene like a functioning gene but with many mutations, making it useless) in humans and chimpanzees demonstrated that they had a common ancestor.⁶ Even at that time there were reasons to question that interpretation, and some creationists predicted that it would not turn out to be a pseudogene. In 2012 and 2013 new research has demonstrated that it is not a pseudogene at all, but is actually functional and essential. Even one mutation in this gene causes abnormalities in humans.⁷

Claims like Gilbert’s pseudogene explanation have led some persons to unfortunate conclusions. Some have lost their faith in God and the Bible because they accepted too quickly the initial interpretation of the “pseudogene” in humans and chimps or the Yellowstone “fossil forests.”

15. Biological features considered to be suboptimal, or mistakes, will be fruitful areas of study. Organisms do have problems caused by mutational damage, but more careful study will show that most seemingly suboptimal features appear that way because of our lack of knowledge about their structure and function. Most “suboptimal” features will be seen as the evolutionary equivalent of the “god of the gaps.” They are best described as “evolution of the gaps,” since the evolutionary claim of their being suboptimal disappears as we learn more about them.

Examples: There are numerous examples of the superficiality of the suboptimal explanation. Human structures formerly interpreted as vestigial structures included the thymus, middle ear, and thyroid glands and many more.⁸ Bats wings have been called suboptimal, since their bone structures are just modified from small mammal feet, rather than being uniquely designed for flight. This explanation fares poorly compared to a bat’s skill in flying and using its hand-like wings for catching and eating insects in mid flight without missing a wingbeat, as seen, e.g., in slow motion video. A bat’s wing is exquisitely well designed for its life style.

The vertebrate retina has been commonly seen as poorly designed because the light must pass through layers of cells before reaching the photo receptors. However, research has now shown that Muller cells in the retina are living optical fibers that take the light through the outer layers of cells, to the photo receptors with high efficiency.⁹ It is now evident that the retina is a superb example of sophisticated engineering.

Suboptimal features or vestigial structures have always been an argument from ignorance; if we didn’t understand them adequately, they looked poorly designed. As many of these structures have been studied in more detail the ignorance was removed, and it became evident how well designed and functional they are.

16. In recent years there has been recognition that microevolution can occur far faster than previously thought, even occurring in a few years instead of thousands of years. The beaks of Darwin’s finches in the Galapagos Islands went through a cycle of size change in a few years, in response to climate variation and change in availability of the types of seeds which they eat.¹⁰ I predict that this trend will continue in the future.
17. Scientists who use Bible-based predictions have the potential to be very productive, because it opens the way for discoveries that are

often overlooked by those using the false philosophy of naturalism, especially as applied to the study of origins.

18. There are many specific discoveries that can't even be predicted, because nobody knows enough to predict them. But they are more likely to be found by those whose thinking has been opened up by their worldview to recognize things not likely to seem important within a conventional naturalistic framework.
19. Even if all or most of these predictions are verified, most of the scientific community will still hold to the theory of evolution through deep time, and its supporting paradigm or philosophy of methodological naturalism.¹¹ This deeply held philosophy results in too much dependence on chance, deep time, and naturalistic assumptions, which have the effect of shielding large areas of origins science from rigorous thought.

DISCUSSION

Several questions need to be addressed to adequately understand this topic.

1. How do we come to the point of determining if our worldview is wrong?

Testing a worldview only happens over a long time, and maybe, in reality, never (in relation to individual life spans). Changing one's worldview too quickly is not wise. Our life span is too short to truly test our worldview. It is best to take the worldview we have confidence in, and without apology use it to guide our research. That is what most scientists do.

When one of the options in question (one of the research approaches and its predictions) is a biblical worldview there is a critical but subjective factor involved. The Bible is only of value if it is divinely inspired in the way that it claims to be. Do we know the One who inspired the Bible? Do we know Him so well that we are confident in the inspired reliability of the Bible? Does this give us confidence to pursue research in a biblical worldview? If a friend gives us a map to a hidden treasure, do we know that friend so well that we will, with confidence, search for the treasure?

Two prominent contemporary philosophers of science, Larry Laudan¹² and Imre Lakatos, have developed similar concepts, which may be the most realistic understanding of the scientific method. We will briefly consider the view of Lakatos.¹³ He believed the history of science is best described as competition through time between competing research programmes (roughly comparable to theories or paradigms). A research programme consists of a

core theory and a set of auxiliary hypotheses. The core theory is central to the research programme, and is protected from falsification by the “protective belt” of auxiliary hypotheses.

Why would we want to protect a theory from being falsified? According to Lakatos it is in order to give the core sufficient opportunity to be fully developed. When potentially falsifying data appear, it is the auxiliary hypotheses that are modified or replaced. The theory that all life has arisen by evolution is an example of a core theory, with its protective belt of changeable auxiliary hypotheses of specific evolutionary mechanisms.

Lakatos’ philosophy can be compared to the worldviews we have discussed. It is not realistic to think that worldviews (compare with Lakatos’ core theories) can be easily tested and confirmed or rejected. Rather than fully testing them, we can, according to Lakatos, consider a research programme as progressive or degenerating according to several criteria, the most important of which is whether it is successful in predicting novel, hitherto unexpected findings, at least some of which can be successfully corroborated. Thus, in the study of science, the choice between competing research programmes (or worldviews) is not based on our ability to determine which one is more true, but on the programmes’ relative ability to increase scientific knowledge. Success in making predictions will be a part of this process.

Lakatos perceives science as a rational activity, but he and others recognize that science is affected by sociology, economics, assumptions and other very human factors.¹⁴ Because of these human factors, theories at times seem more strongly supported than they really are.

The history of science shows that a theory may be successful in stimulating scientific progress, and consequently be widely accepted by the scientific community, and yet later be rejected because the accumulating evidence no longer supports it. Consequently, if at a given time there is a strong consensus among scientists regarding the truth of a particular theory, this consensus may result from philosophical factors (assumptions; worldviews), rather than from a body of evidence demonstrating the truth of the theory.¹⁵ For example, could the scientific consensus that all life forms resulted from evolution, result from a common commitment to the naturalistic philosophy, rather than from the adequacy of the evidence?¹⁶

In this paper I am proposing that the biblical worldview will do just what Lakatos suggests – if we use it with confidence (developing the core, by investigating and testing the belt of “protective hypotheses and predictions”) – it will lead to significant scientific insights and discoveries. In time I predict these will outstrip the standard model, because they are based on a more correct worldview.

2. *Is it necessary to know a different worldview from one's own?*

Yes, knowing both primary worldviews is necessary in order to think of how to test our ideas. It is obvious from the writings of many anti-creationists that they know little or nothing about how an educated creationist thinks. Consequently they say many foolish things. This awkward situation can be avoided by knowing both worldviews very well, what is their basis, and what implications and predictions they both make. If we have that broad perspective it facilitates effective critical thinking and helps us avoid the blinding effect of being unaware of how others think and what evidence they utilize. Not every Bible believer needs to know all about the standard model, but it is necessary to understand that model for those attempting to use a biblical worldview as a basis for scientific research.

3. *Will the research method be different under a biblical worldview?*

No, the research method will not be different. We still use the same methods for collecting data and analyzing biological or geological samples with analytical equipment. The difference will be primarily in the questions we ask, the assumptions we begin with, and in the things we notice in our research. We must be aware of the widely differing biblical and naturalistic worldviews and the differences in their predictions. If we are thus aware we will be free to ask questions not allowed or at least not predicted by some worldviews. We will be much more likely to notice things in the geological outcrops or biological lab that would be missed by a researcher who only knows and understands one worldview. Comparing the predictions of opposing worldviews can open one's eyes to see things in nature that might not seem important otherwise.

A Christian also has another advantage, not acceptable to many other scientists. We can ask Him for wisdom and insight in our research. We then must do our part – careful, thoughtful work and critical thinking. If we do sloppy work both God and our fellow humans will be disappointed, but careful research honors our Creator and encourages others to trust Him.

CONCLUSIONS

The standard model is believed, by many, to be the most successful approach for science. It has been very successful in various fields of science. But we know from study of history that theories or paradigms now known to be wrong were successful in guiding science, in some cases for a long time. The most famous example is the geocentric theory of cosmology, which inspired successful science for 1800 years.

I suggest that serious cracks are appearing in the naturalistic view of biological and geological history. The standard model in these fields gener-

ally works well, but only if one's thinking is limited by the methodological naturalistic worldview. If our thinking is also open to a biblical model (or we are at least open to asking critical questions), serious problems in the standard model become apparent. The predictions discussed above point to the possibility of research that can explore these "cracks" and find the new insights revealed within their depths. Thus I predict that if we follow this approach the biblical worldview will be not only spiritually valuable, but can also be a "progressive scientific research programme," as defined by Lakatos. To most scientists this is not evident at present, and it will take much more research effort to demonstrate it more adequately, as I predict it will.

ENDNOTES

1. Some definitions as used in this article:

Worldview – an overall understanding of life and the universe. Examples are biblical creationism, naturalism, Darwinian evolution.

Paradigm – a large-scale explanatory theory, used in science. Examples are naturalistic Darwinian evolution as an explanation for all life forms, or a paradigm of earth history incorporating a short time since the life forms were created before the Cambrian explosion, followed by a global flood catastrophe. These are descriptive scientific statements, and do not involve the spiritual meanings that may be part of the corresponding worldview.

Theory – a portion of a paradigm. The evolution theory is a part of the broader paradigm that includes, e.g., the geological context of evolution.

Hypothesis – an idea to be explored and tested.

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