

Christian Fundamentalism and Science: Answers in Genesis

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Abstract

It is well recognised that fundamentalist believers hold tenaciously to their beliefs and go to great lengths to rationalise them when presented with conflicting evidence. The descriptive paper begins with a discussion of the development of Christian Fundamentalism and its relationship to science. I then examine the views of one Young Earth creationist group, Answers in Genesis through examination of their websites. This organization rejects modern scientific theories on cosmology, geology, linguistics, palaeontology and evolutionary biology and accepts a worldview which sees the universe, the Earth and life originating about 6,000 years ago. I discuss their views of scientific methodology and their differentiation between operational and origins science.

Keywords: Fundamentalism; Science; Inerrant; Evolution; Rationalisation

Introduction

The term Fundamentalism derives from a movement in American Protestantism that arose among Evangelical Christians in the early part of the 20th Century as a reaction to modernism and that stresses the infallibility of the Bible, not only in matters of faith and morals, but also as a literal historical record, holding as essential to Christian faith belief in such doctrines as the creation of the world, the virgin birth, physical resurrection, atonement by the sacrificial death of Christ, and the Second Coming [1-3]. In this paper we focus on one Christian fundamentalist movement- *Answers in Genesis* (AiG), their views on evolution and their understanding of science through examination of their websites.

Fundamentalism emphasises the primacy of religious belief and authority in all spheres of human life. The most pronounced characteristics [of fundamentalists] include the following: (a) a prominent emphasis on the inerrancy of the Bible, the absence from it of any sort of error; (b) extreme hostility to modern theology and to the methods, results and implications of modern critical study of the Bible; (c) the belief that those who do not share their religious viewpoint are not 'true Christians' at all.

For the early twentieth Century Fundamentalists scripture was seen as a precise source of facts in propositional form, without error not only in religious matters but also in historical and scientific matters. As Tiffin [4] notes, creationists take biblical myth and allegory as literal facts. There is no sense of the history of religion or no dialogue within religions. Among all Fundamentalists religion is seen as timeless and unchanging. For instance Jerry Falwell, evangelical fundamentalist Southern Baptist pastor, argues that the Bible is inerrant in terms of matters pertaining to geography, science and history. Another element is biblical clarity- the scripture is a guide to everyman and everyone is capable of understanding its truths which will be revealed by the Holy Spirit.

However the fact that different believers disagreed on its meaning led to a proliferation of Protestant denominations, each claiming to be the sole authentic readers of the text. Other sects were seen as heretics. In recent years there has been an escalation of Christian fundamentalist activity in America [5,6]. Some of their actions that have made the national headlines include proposing new legislation to reintroduce prayer into public schools, teach biblical creation in science classes, and abolish the constitutional sanction separating church and state [4].

Contemporary fundamentalism and science

Conflict between science and religious fundamentalism in the USA is epitomized by the infamous Scopes trial (1925) in which John Scopes, a high-school science teacher in Dayton (TN, USA), was charged with illegally teaching Charles Darwin's theory of evolution. The battles between Fundamentalist Christianity and Science continue to rage. For many years creationists have tried to introduce their ideas into the school curriculum alongside the teaching of evolution and the status of creation and evolution in public education has been the subject of substantial debate and conflict in legal, political, and religious circles. In the United States, creationists and proponents of evolution have been involved in a long-standing battle over the legal status of creation and evolution in the public school science classroom. In the UK the government does not permit Creationism to be taught as a valid scientific theory in any free school or academy.

In October 2004 the Dover Area School District amended its biology teaching curriculum arguing that intelligent design be presented as an alternative to evolution theory, and that of *Pandas and People* was to be used as a reference book. The plaintiffs successfully made the case that intelligent design is a form of creationism, and therefore the school board policy violated the Establishment Clause of the First Amendment to the United States Constitution. The judge's decision elicited considerable response from both supporters and critics.

Fundamentalist writers often go to great lengths to show that their positions are in accordance with science. However, critics would maintain that this is a veneer of pseudo-science applied in order to increase the plausibility of the fundamentalist worldview and that fundamentalists remain inherently opposed to the inductive approach of the scientific method. In spite of a pretence to scientific language, these creationists ultimately deploy supernatural explanations to answer scientific questions. This is a profound contradiction and an anti-science view since the scientific method by definition cannot deal

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with the supernatural. Creationism has now been labelled as intelligent design according to which certain features of the universe and of living things are best explained by an intelligent cause, not an undirected process such as natural selection.

Most fundamentalists agree to live and operate in a world informed by modern technology and science but their attitudes are mixed; nuanced, selectively hostile, widely accepting with some important boundaries and limitations imposed. Of note, in the United States, Christian fundamentalist broadcasters are much more effective in the use of technical media than are their non-fundamentalist competitors. As Mendelsohn [7] notes, 'one of the striking aspects of fundamentalist movements is the open willingness of their members to adopt modern technology to reclaim a society that they believe has been misshaped by the manner in which these modern means have been used by secularists'. They seek to construct a viable synthesis between tradition and modernity and to integrate segments of the modern with the traditional. However they are directly opposed to naturalism- the idea that nature, and natural phenomena, is all there is – as opposed to the supernatural realm and phenomena.

They are not traditionally antiscientific and share with their non-fundamentalist counterparts a sense of awe and admiration for the products of modern science. Some strongly desire to be recognised as scientists and offer quasi scientific confirmations of events which are not backed by scientific evidence. Rather they depend on surmises which are dressed up as scientific facts and do not measure up to the criteria and standards of science. First guesses do not confirm to later guesses, nor do later ones substantiate the former [4]. While science aims to be unbiased, Creationist scientists try to manipulate existing science to suit their own needs and are not open about the flaws and gaps in their theory. Creationist science arguments are not open to being wrong in any way demonstrating that the nature of the inquiry regarding creationism is fundamentally unscientific. They are critical of what 'modernists' have done to and with science asserting that science and religion were closely tied together before the Enlightenment. Post Enlightenment science in the seventeenth century was becoming an alternative explanatory model to religion. Fundamentalists aim to restore the harmony through Christianising science.

The main problems with science emerge in relation to epistemological issues at the borders between the religious and the secular, particularly in relation to life, reproduction and the living (such as evolution and abortion), both at the explanatory and the active levels [7] and efforts have been made in the USA to make scientific beliefs conform with religious beliefs through teaching in biology classes, a tradition which extends back to the renowned Scopes Trial and continues today in several mid-western states. These efforts have generally remained unsuccessful in a society where church and state are separated by constitution. However as historian Ronald Numbers [8] points out, anti-evolutionism is not a monolithic movement. There are, in fact, fierce battles between creationists of different stripes. And the "creation scientists" who believe in a literal reading of the Bible have, in turn, little in common with the leaders of intelligent design.

The rise of fundamentalist Christianity at the start of the twentieth century saw a revival of interest in young Earth creationism, as a part of the movement's rejection of the explanation of evolution. A survey in the USA conducted by the Pew Research Center [9] found that the strongest opposition to the idea of evolution came from evangelical Christians, most of whom accept the Bible as literally true and see a direct conflict between the biblical creation account and scientific accounts of evolution. Large majorities of both black and white evangelicals (65%)

stated life did not evolve. Just 28% of white evangelicals and 23% of black evangelicals believe in evolution, and only 6% think evolution occurred through natural selection.

Among secular individuals and most other religious groups, majorities believe in the theory evolution: this includes 59% of Catholics, 62% of white mainline Protestants and 83% of seculars. But mainline Protestants and Catholics who hold evolution to be true are themselves divided over the question of whether evolution occurred through natural selection or was guided by a supreme being for the purpose of creating human life in its present form.

Among many fundamentalists there remains a strong advocacy of anti-evolutionary (anti-Darwinian) positions under the name of Creationism –driven by the idea that the teaching of evolution starts a slippery slope that inevitably ends with atheism. We might consider Creation Science as an amalgam of traditional Christian theism and anti-Darwinian positivistic science. It has adopted the standards of scientific explanation and practice and has challenged as unscientific the probability based concepts of evolution. In those sensitive areas where religion and science collide, Fundamentalists assert the primacy of religion. The Biblical account of creation must take precedence over the scientific theory. Darwinian evolution became a symbolic battle ground between science and religion.

The arguments of the religious fundamentalists are not only anti-biology but also anti-physics, anti-astronomy, and anti-geology. In short, they reject all scientific knowledge that does not fit their view of the world. As the philosopher of science, Philip Kitcher [10] explained:

'Although the creationist campaign is advertised as an assault on evolutionary theory, it really constitutes an attack on the whole of science. Evolutionary biology is intertwined with other sciences, ranging from nuclear physics and astronomy to molecular biology and geology. If evolutionary biology is to be dismissed, then the fundamental principles of the other sciences will have to be excised. All the other major fields of science will have to be trimmed - or, more exactly, mutilated - to fit the creationists' bill. Moreover, in attacking the methods of evolutionary biology, creationists are actually criticizing methods that are used throughout science... there is no basis for separating the procedures and practices of evolutionary biology from those that are fundamental to all the sciences.'

Their rigid dogmatic convictions that the evidence of science must conform to Holy Scripture puts them at odds with the scientific community. Furthermore, their view of science, the bible, and earth history have puts them in conflict with even the views of mainstream Christianity [11].

However, as Mendelsohn [7] correctly notes, while scientific explanation may have displaced religious explanation, on the other hand scientific knowledge, for most Christians, leads to an understanding of God's mind. Natural theology is a program of inquiry into the existence and attributes of God without referring or appealing to any divine revelation which attempts to either prove God's existence, define God's attributes, or derive correct doctrine based solely from human reason and/or observations of the natural world.

However, even in the USA, creationism is not the only battleground between fundamentalism and science and, in some respects; it is not even the most crucial one. The administration under President George W. Bush, for example, has systematically overruled or failed to take account of scientific findings in areas ranging from global warming to

drug safety, to affirm their ideologically determined set of priorities [12].

Answers in Genesis

Answers in Genesis is a non-profit Christian apologetics ministry with focussing on supporting young Earth creationism and a literal interpretation of the Book of Genesis. Like other fundamentalists they emphasise the Fall, recent creation and a universal flood. The organization is based in the United Kingdom and the United States. At one time it had offices in Australia, Canada, New Zealand and South Africa, but in 2006 these seceded to form Creation Ministries International.

As they assert: ‘The Bible—the “history book of the universe”—provides a reliable, eye-witness account of the beginning of all things, and can be trusted to tell the truth in all areas it touches on. Therefore, we are able to use it to help us make sense of this present world. When properly understood, the “evidence” confirms the biblical account.’

Followers of AiG reject modern scientific theories on cosmology, geology, linguistics, palaeontology and evolutionary biology and accept a worldview which sees the universe, the Earth and life originating about 6,000 years ago. This postulated 6000 year age of the earth contradicts the accepted scientific view; there is a near consensus among earth scientists that the age of Earth and [the rest of] our solar system is 4.54 billion years. In attempting to ‘prove’ that the earth is ‘young’.

AiG supports non-uniformitarianism positing that natural law has changed over time; specifically, that it has been altered by God for the purpose of resolving some messy inconsistencies of observed phenomena with the truth found in Genesis. One illustrative example, without any empirical support is the assertion that the rate of radioactive decay changed during the Great Flood, so hundreds of thousands of years’ worth of radioactive decay happened in a few days. AiG asserts that the radiometric dating methods are based on those same naturalistic, uniformitarian, anti-biblical assumptions and there is plenty of published evidence that they do not give valid dates. Far from proving evolution, carbon-14 dating actually provides some of the strongest evidence for creation and a young earth. Radiocarbon (carbon-14) cannot remain naturally in substances for millions of years because it decays relatively rapidly. For this reason, it can only be used to obtain “ages” in the range of tens of thousands of years.

They are critical of scientific methodology and differentiate between operational and origins science. This distinction is typically deployed by adherents of this group when discussing the truth of young earth creationism which argues for the supernatural acts of God who created the universe and everything in it in six, approximately 24-hour days, about 6,000 years ago. Operational (or Observational) Science refers to knowledge gained by direct observation (using the five senses) and based on repeatable testing. Such “science” (knowledge) has enabled scientists to build our modern technology like airplanes and rocket ships. Whether one is a creationist or evolutionist, we all use the same operational science. For him, the ability to study the world around us is only reasonable because there is a Lawgiver who established the laws of nature.

In contrast, Historical science refers to knowledge about the past-in essence, history. In contrast to operational science, this type of science cannot be observed directly or based on repeated testing, so we need other ways of finding knowledge. The Genesis account of origins gives us knowledge about the past, revealed by an infallible

witness-God. Those who believe in Darwinian evolution claim to have knowledge concerning the past, too, but it is based upon the beliefs of fallible humans who did not witness the supposed evolutionary history. Patterson [13] asserts that Genesis is the true account of historical science, whereas evolution is really a fictional historical science.

Acknowledging that creationists and their non-creationist counterparts use the same evidence- the stars, animals, fossils -, AiG argues that the two groups differ in their interpretation of this evidence. AiG starts from different presuppositions to non-creationists and use biblical events such as creation, the Fall, Babel and the flood which they take to be historical events, to interpret contemporary evidence. Unlike scientists they start from a conclusion and seek evidence to support it.

These views are well summed up in an article entitled ‘Evolution: Not Even a Theory’ (<http://www.answersingenesis.org/get-answers/features/evolution-not-even-theory>) which states:

‘Two problems prevent anyone from legitimately calling evolution a theory. First, there’s no direct, observable experiment that can ever be performed. Scientists can measure bones, study mutations, decode DNA, and notice similarities in morphology (the form and structure of animals and plants), but they can never test evolutionary events in the past.

‘Some point to natural selection as a form of “evolution in action,” but natural selection can only act upon the genetic potential that already exists. What we do observe from natural selection fits perfectly with a recent creation and does not point to common descent.

‘Secondly, and related to the above, evolution misses the mark as a theory because all the supposed “tests” to confirm Darwinism do not necessarily and distinctively correspond to the idea. In other words, each has an alternate and equally viable explanation. A theory requires that the confirming experiments correspond to one specific hypothesis. Otherwise, the experiment cannot establish legitimacy. Evolution has no such legitimacy.

Proofs of biblical creation

They provide a number of arguments to ‘prove’ the validity of creation. While each piece of evidence reveals reasons why the earth cannot be billions of years old, the real issue is not the age of the earth. Instead, the real issue is authority. God’s infallible Word must be our ultimate authority, not the unstable foundation of human reasoning. According to AiG everything was created fully grown and functional with the ‘appearance of age’. Created things even one second old would display spurious age. Plants were established before sunlight (Genesis 1: 11, 14) –a biological impossibility. All ‘kinds’ of animal life were created in three days although it is unclear exactly what the term kinds refers to – be it species, genera, family or even orders. They vehemently deny the evolution of new kinds and disagree with the standard evolutionary view that the first organisms arose in the Precambrian, 3.4 billion years ago and the first animals evolved about 700 million years ago (Simpson 1983). Evolutionary theory, they argue, “will inevitably lead to a magnification of the effects of sin,” such as is the cause of social problems including abortion and racism (<http://www.answersingenesis.org/articles/2009/01/16/feedback-morality-paradox>).

The organisation has been criticised for its development of a creation museum promoting a young earth creationism and criticism of Darwinian evolution. This includes features such as animatronic dinosaurs, cinema screens showing young earth history of the world, a

planetarium depicting creationist cosmologies and a diorama depicting modern humans and dinosaur's co existing peacefully. As one observer comments: This place doesn't just take on evolution - it squares off with geology, anthropology, paleontology, history, chemistry, astronomy, zoology, biology, and good taste. Another project is the Ark Encounter - through the construction of a massive full-scale Noah's Ark, the Ark Encounter will present America and other nations with a reminder about the Bible's account of the Ark. The project is described as a one-of-a-kind historically themed attraction. In an entertaining, educational, and immersive way, it presents a number of historical events centred on a full-size, all-wood Ark, which should become the largest timber-frame structure in the USA.

AiG publishes an online journal *Answers Research Journal*, a professional, peer-reviewed technical journal for the publication of interdisciplinary scientific and other relevant research from the perspective of the recent Creation and the global Flood within a biblical framework. The journal disseminates research conducted by creationist experts in theology, history, archaeology, anthropology, biology, geology, astronomy, and other disciplines of science by providing scientists, students, and supporters the results of cutting-edge research that demonstrates the validity of the young-earth model, the global Flood, the non-evolutionary origin of "created kinds," and other evidence that are consistent with the biblical account of origins. This has attracted much criticism from both the media and scientific circles.

Flood geology

The movement supports flood geology- the interpretation of the geological history of the Earth in terms of the global flood described in Genesis 6-9 which assumes that the Biblical Great Flood was an actual *historical event* and attempts to interpret geology in terms which make it consistent with the flood myth. They postulate 'vapour canopy collapse' (Genesis 1:7) and a source of water confined in underground reservoirs until released in the flood (Genesis 7:11)- both of which are an indispensable elements in their flood story and both of which have no scientific support. Genesis (7:19) relates that floodwater covered 'all the high mountains under the whole heaven'. Modern day calculations indicate that even if the earth were covered by water there was not enough water available to cover the highest peaks. Creationists overcome this issue by arguing that God lowered the height of mountains at this time - an interesting topographical manipulation.

Fossils are found in geological strata with older organisms at the bottom and newer organisms at the top. Although this finding supports evolutionary theory, AiG asserts that a form of "sorting" occurred during the flood; smaller, less developed animals couldn't outrun the flood waters so are found buried at the bottom, while the more advanced animals are found at the top because they could outrun the flood waters. The general scientific consensus is that what is seen today is the result of slow and steady processes rather than massive catastrophic event such as the flood

Andrew Snelling of Answers in Genesis [14] claims that fossil graveyards around the world provide proof for a global flood, Layers that contain large numbers of fossils, or that contain extraordinary preservation, can only be explained by catastrophic processes. Some of his examples include: At Florissant, Colorado, a wide variety of insects, freshwater mollusks, fish, birds, and several hundred plant species (including nuts and blossoms) are buried together. Bees and birds have to be buried rapidly in order to be so well preserved. Alligator, fish

(including sunfish, deep sea bass, chubs, pickerel, herring, and garpike 3-7 feet [1-2 m] long), birds, turtles, mammals, mollusks, crustaceans, many varieties of insects, and palm leaves (7-9 feet [2-2.5 m] long) were buried together in the vast Green River Formation of Wyoming.

The problem of Noah's Ark

One significant problem for creationists is to account for the fact that so many species could fit into Noah's ark. Genesis 6:15 states that the Ark's dimensions were at least 135 meters long (300 cubits), 22.5 meters wide (50 cubits), and 13.5 meters high (30 cubits). That's 450 feet long, 75 feet wide, and 45 feet high. A highly speculative account is provided which lacks scientific foundations. AiG notes that according to Scripture, Noah's Ark was a safe haven for representatives of all the kinds of air-breathing land animals that God created. The more than 10 million species however could not have fit, let alone survived, on any plausible boat. Naturalistic explanations are proposed rather invoking 'miracles' They assert:

'According to the Bible, the Ark had three decks (floors). It is not difficult to show that there was plenty of room for 16,000 animals (the maximum number of animals on the Ark, if the most liberal approach to counting animals is applied), assuming they required approximately the same floor space as animals in typical farm enclosures and laboratories. The vast majority of the creatures (birds, reptiles, and mammals) were small (the largest only a few hundred pounds of body weight). What's more, many could have been housed in groups, which would have further reduced the required space.

'It is still necessary to take account of the floor spaces required by large animals, such as elephants and rhinos. But even these, collectively, do not require a large area because it is most likely that these animals were young, but not newborns. Even the largest dinosaurs were relatively small when only a few years old.'

Another solution has been proposed. Creationists have devised a classification system for animals to ensure that species fit with biblical accounts. Baraminology provides a creationist alternative to Linnaean taxonomy and cladistics based on a Biblically literal young Earth world view. It attempts to solve a major creationist and literalist problem: how to fit two (or seven) of *every* kind of animal on Noah's Ark. The discipline of baraminology redefines the meaning of the word "kind" in Genesis to mean a much wider group (a baramin) so as to reduce the number of animals Noah would have had to take in the ark.

Conclusions

Like fundamentalists from other diverse faith traditions, adherents of AiG typically appeal to similar cognitive strategies to rationalise their beliefs. They look only for items which appear to support it them and conflicting evidence is ignored or discredited. They deploy selective attention, evaluation and interpretation of scientific data and rationalize their strongly held beliefs, rather than investigate them or test alternative possibilities. This paper adds to the extant literature on religion and cognitive dissonance which has to date focused upon millennialism, prayer, prophecy and theodicy. Future work in this area should involve detailed interviews among members of this group.

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