

What Is Creationism?

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WHEN it comes to teaching and learning that evolution is a fact of science, the instructors, books, and scientists are all inaccurate. You may be shocked by the statement, yet millions of people in the U.S. agree with it, and they have attended schools with non-creationist science curricula. This is not a new phenomenon; it has been the case despite decades of science curricula attempting to teach the contrary.

The results of various polls concerning people's acceptance or rejection of evolution generally report close to a 50% rejection rate (e.g., Gallup 1991; Recer 1996). These statistical data are not results of polling students; they are results of polling a cross-section of the populace, primarily those who have been educated in U.S. schools that use non-creationist science curricula. The net result of their science educations, when it comes to such a fundamental topic in the life sciences as evolution, is that approximately half of former students hold a view that is at odds with science.

Most educators would probably agree that it is important to know why students think something they are teaching is inaccurate. Yet when it comes to their students rejecting evolution, many educators just chalk it up to the student being a "creationist"—end of story. The label *creationist*, while often useful for categorizing the great variety of people who reject evolution, is much too broad to give educators an appropriate understanding of the myriad rationales as to why their students reject evolution.

Many believe that those who reject evolution are just religious literalist fundamentalists and/or those with conservative political agendas. However, half the country is certainly not made up of religious fundamentalists (let alone literalist fundamentalists) nor political conservatives. Gallup (1991) reports that 51% of conservatives, 33% of moderates, and 39% of liberals reject evolution. And when it comes to political affiliations, 50% of Republicans and 50% of Democrats reject evolution; therefore, it appears that rejection of evolution is non-partisan.

To better understand why many students contend that the evolutionary science we teach is inaccurate,

it is illustrative to examine some of the religious and non-religious rationales for this thinking.

Religious Rationales

While it is true that one can find at least a few individuals of almost any religious faith that reject evolution, the overwhelming majority of general resistance to and organized attacks against evolution come primarily from those associated with Evangelical Christianity. (Evangelicalism generally holds that the Bible is an inerrant authority.) One of the most telling examples of the Evangelical interest in anti-evolution stems from the journalistic masthead of Evangelical Christianity: the periodical *Christianity Today*. Its founder and chairman of the board of directors is Billy Graham, who stated that *Christianity Today* is "a rallying point" for evangelicals, "a flag . . . under which we all can gather," a "strong vigorous voice to call us together," to "reach the clergy and laity of every denomination" (Maudlin 1998, p. 4).

Christianity Today is not a fundamentalist-literalist periodical; its readers span the continuum of evangelical theology and therefore it enjoys one of the highest circulations of all Christian magazines. Given this large and theologically varied Evangelical readership base, it would be reasonable to expect that *Christianity Today's* 1997 book of the year would be about such subjects as how to get to Heaven, how to live a better Christian life, or about witnessing (proselytizing). However, out of the more than 200 books nominated, then reduced to a list of 26 titles by "a large panel of scholars, pastors, writers, and other church leaders" (p. 11), the book of the year selected was *Darwin's Black Box: The Biochemical Challenge to Evolution* authored by a biochemist (Wilson 1997). Interestingly, it was exactly 25 years previously that *Christianity Today* selected for one of its "choice evangelical books" of the year, *The Genesis Flood* authored by Whitcomb and Morris, the latter being founder and president emeritus of the Institute for Creation Research (ICR). Also in *Christianity Today* are full-page advertisements for Phillip Johnson's *Defeating Darwinism by Opening Minds*. The advertisements state that Johnson, a law professor at Berkeley, "shows how ordinary Christians can defeat the false claims of Darwinism" ("Now Is The Time," 1997). So contrary to the popular characterization that anti-evolutionism is just primarily of fundamentalist-literalist

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concerns, it appears that it is a very important part of the larger Evangelical Christian community.

As such, it would be difficult, if not impossible, to construct a concise system attempting to label the myriad Evangelical views for rejecting evolution. However, most of the views can be represented within the categories of literalists, progressives, and theists. While the names of these categories are often used elsewhere, the particular demarcations drawn here should not be assumed to be used universally. In fact, many who hold positions within these categories would not even consider themselves creationists, thus illustrating the need for further clarification.

Literalists

The literalists are those who believe that Genesis, as well as most (if not all) other parts of the Bible, should be interpreted literally. They believe that the Bible is a simple historical record and accept at face value that each day of the Genesis creation account is a natural solar day. Because of this literal reading of the Bible, most literalists also accept a chronological record of the Bible, contending that the age of the universe is 4,000-10,000 years old. Thus, literalists are commonly called the young earth creationists (Morris & Morris 1996). It is out of this theological heritage that many of the leading anti-evolutionary forces arise, the most popular being the Institute for Creation Research (ICR) located in Santee, California. It would be difficult to estimate the ultimate effect such an organization has on students to challenge evolution, but its production is noteworthy. In the last 25 years, ICR has conducted over 300 debates, usually held on university campuses with audiences mainly of students and faculty with attendances of up to 5000. ICR personnel have written and published over 75 books, and some of their periodicals have a circulation of more than 150,000 per month. This one organization has over 50 full-time employees, and their anti-evolutionary rationales have been broadcast on more than 1000 radio stations worldwide (Morris 1995). They have an accredited graduate school, which offers M.S. degree programs in the fields of Astro/Geophysics, Biology, Geology, and Science Education. Their Museum of Creation and Earth History reports an annual attendance of adults, children, and school groups numbering about 25,000 persons per year (Morris 1996). And students' access to their views and their educational materials will soon be expanding. Starting this year, ICR will have their first online course available over the Internet. This "twelve-module course (written at the high school level) will permit a student to learn Biblical and scientific creationism at home interactively . . . Such topics as Creation, the Flood, fossils, and dinosaurs will be presented in Creation Online" (ICR 1999).

Progressives

As compared to the literalists, this group is more widely dispersed in their beliefs but share in common the view that the Earth is much older than what the literalists contend. One camp within the progressives holds a view quite often referred to as the gap theory, in which life on Earth was supernaturally created in Genesis 1:1. That life eventually went extinct, and other life was re-created in Genesis 1:2 and following. This view of creation, gap theory adherents contend, accounts for the old age of the Earth and fossils, as well as the recent supernatural creation of Adam and Eve and all current life on Earth.

Another camp of progressives believes that each day of creation listed in Genesis should be interpreted to be indeterminately long periods of time, possibly millions or billions of years, equating somewhat to the ages of geology. Living forms were introduced via supernatural creation throughout these various long days. There was no macroevolution.

The final camp of progressives included here allows for limited evolution; they are commonly called "Progressive Creationists." They believe that over millions of years of evolution, occasional interventions occurred in which new kinds of organisms were specially created, such as horses or humans, thus providing a theological explanation for gaps in the fossil record—a supernaturally punctuated evolution. One example of a leading professional progressive organization is *Reasons to Believe* (RTB), headquartered in Pasadena, California. They produce and distribute books, booklets, magazine articles, papers, videotapes, audiotapes, CD-ROMs, television and radio programs, and maintain an Internet site. In the future, they "plan to produce more materials targeted specifically toward children, young people, educators, and other special interest groups" (RTB 1999).

The progressive category is an interesting and important category that does not typically fit many popular characterizations of creationism. For example, the *Cambridge Dictionary of Philosophy* defines creationism as the "acceptance of the early chapters of Genesis taken literally. Genesis claims that the universe and all of its living creatures including humans were created by God in the space of six days" (Audi 1995). But progressives do not believe that the universe and all living creatures were created in the space of six days, and yet progressives still reject evolution as typically taught, and moreover, most would consider themselves creationists.

The literalist and progressive anti-evolutionary professional organizations produce a wide variety of literature written for elementary and secondary students. These materials are primarily marketed for private religious schools and for home schooling and therefore might appear to have no effect on other

Literalist	<ul style="list-style-type: none"> • Young universe (4,000–10,000 years). • Literal days in Genesis. • All life was supernaturally created essentially in its present forms in the past 4,000–10,000 years.
Progressive	<ul style="list-style-type: none"> • Old universe (millions or billions), and <ol style="list-style-type: none"> 1. All life was supernaturally created essentially in its present forms in the literal days of Genesis within the last 10,000 years, or 2. Days in Genesis indeterminately long (millions or billions of years), living forms introduced via special creation throughout these long days, no macro evolution, or 3. Days in Genesis indeterminately long, evolution did occur, aided on various occasions by interventions of special creations of new higher order organisms.
Theist	<ul style="list-style-type: none"> • Old universe, days in Genesis indeterminately long, evolution occurred, no interventions of special creations <ol style="list-style-type: none"> 1. Minimum or no randomness, evolutionary process guided to produce humans, or 2. Authentic randomness, random element employed to produce humans.

Figure 1. Types of Creationism.

schools' students. However, the overwhelming majority of students that attend private religious schools and home schools for their elementary and sometimes junior high education go on to attend public schools. It is most likely that their literature written for the adult lay-public affects students more, through a trickle down effect. Many adults purchase and read the publications, then attempt to teach children the reasons why evolution is rationally, theologically and scientifically untenable. There is even evidence of a correlation between student attendance at occasional local anti-evolutionary meetings (i.e. seminars and evolution/creation debates) and challenges to the teaching of evolution (McInerney 1997).

Theists

This group is characterized by those who contend that evolution did occur to create new organisms including humans without supernatural intervention along the way. There are two main divisions within this group. The first group includes those who contend that the randomness involved in evolution is minimal or nonexistent. They are commonly referred to as theistic evolutionists because they basically accept evolutionary theory with the proviso that a supreme being, not chance, was responsible for the human outcome by directly guiding the process.

The second group holds that the process of evolution does involve an authentic random element but that a supreme being employed that randomness to produce a desired end—humans (Van Till 1996).

Adherents to this position often use an analogy to a casino owner who uses chance games to produce a predictable year-end profit.

On the surface, these theists may appear to have little if any cause to challenge evolutionary teaching. However, quite often in science and science education articles concerning evolution, references are made to evolutionary scientists who point out in their work that evolution involves randomness. For example, Stephen Jay Gould and others have pointed out that if the history of life were to be rerun, other organisms, not humans, would have evolved (Gould 1989). It is the teaching of this kind of randomness in evolution that often cause theists to take issue.

Teaching Concerns

To many of us there is nothing more interesting than discussing views on religion and science. At the college level, different theological positions can be discussed, and many educators opt to point out to their students who reject evolution that many evolutionary scientists are devoutly religious (Larson & Witham 1997, 1998). In countries such as Canada these discussions also can freely take place in many government supported secondary schools. However, given the legal constraints that exist in U.S. public secondary schools concerning religion, there are potentially significant problems accompanying such actions. Even presenting the simple fact that many evolutionary scientists are devoutly religious can and has been called into question by anti-evolutionary

students and parents. They question why, in a science class, a teacher discussed the religious views of scientists. If, in fact, the discussion in the class was being held to educate students about the history and philosophy of science, then a proper defense could probably be mustered. However, if the reason was to demonstrate to students who challenge or who may challenge evolution that they can still be religious and accept evolution, the motive might be considered proselytizing—attempting to convert a person from one religious faith to another, or specifically in this case, from one anti-evolutionary religious faith to any of those religious faiths that accept evolution. In response to a directive from President Clinton, Secretary of Education Richard Riley, in consultation with the Attorney General, provided a statement of principles concerning religion in public schools to school superintendents, in which the overarching theme of those principles was that public “schools must be neutral with respect to religion” (Riley 1995, p.5).

Nonreligious Rationales

A great number of students who feel evolution is inaccurate do so not solely because of religious rationales but because of a combination of religious and non-religious rationales. This is not to say that the non-religious rationales for rejecting evolution are not often related somehow to their religious beliefs; quite often they are. The professional literalist organizations certainly understand this connection and employ a multitude of related theological and non-theological attempts to convert the progressives and theists to young earth creationism, and likewise the progressives use similar tactics in an attempt to convert the literalists and theists. These non-religious rationales are primarily misunderstandings concerning science content or process, and are usually some of the issues brought up at publicly held evolution/creation debates. Many of these misconceptions are also propagated as “good science” by the professional literalist and progressive creationist organizations (e.g. ICR 1999).

Scientific Creationism

The euphemism of “scientific creationism” was originally coined to include views of the progressives and theists but was unsuccessful (Numbers 1992). It later became the term used by the literalists in their attempts to gain credibility outside of their own literalist theological community. Today it is used almost solely by the literalists in campaigns to convince others to believe that their literalist views are not only theologically correct but (in their view) are supported scientifically. Literalists Morris and Parker (1982) contend that the difference between scientific creationism and biblical creationism is that “the first

is based solely on scientific evidence . . . The second is based on biblical teachings” (p. 264), therefore concluding that scientific creationism should be allowed to be taught in U.S. public schools. However, courts have declared that creation science is a religious view and not a science. Despite the losses, most literalist and progressive creationist organizations still claim that the science evidence points not to evolution but to special creation and should be taught in the science classroom.

The Importance of Understanding

It is clear that all creationisms are not alike. There are significant variances in both the religious and non-religious beliefs for rejecting evolution and likewise diversity in the extent to which the various creationists reject evolution. By having better knowledge about these views, educators may have a deeper understanding of students’ rejection of the fundamental concept in the life sciences.

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