INTRODUCTION: The Pillars of Creationism

This book examines the creationism/evolution controversy from a broad perspective. You will read about science, religion, education, law, history, and even some current events, because all of these topics are relevant to an understanding of this controversy. In this introduction, I will examine three antievolutionist contentions that provide a framework for thinking about this complex controversy. These "pillars of creationism" include scientific, religious, and educational arguments, respectively, and have been central to the antievolution movement since at least the Scopes trial in 1925. As you read the following chapters and selections, it may be helpful to keep the pillars of creationism in mind.

EVOLUTION IS A THEORY IN CRISIS

In 1986, the New Zealand physician Michael Denton wrote a book titled *Evolution: A Theory in Crisis*, which became and remains very popular in creationist circles. Denton claimed that there were major scientific flaws in the theory of evolution. This idea is not new: throughout the nineteenth and twentieth centuries, there was no shortage of claims that evolution scientifically was on its last legs, as documented delightfully by Glenn Morton (http://home.entouch.net/dmd/moreandmore.htm). Of course, such claims continue to be made in the twenty-first century as well. Ironically, Denton has rejected the antievolutionary claims of some of his readers, and describes his 1986 book as opposing Darwinism (i.e., evolution through natural selection) rather than rejecting evolution itself (Denton 1999).

Through constant reiteration in creationist literature and in letters to the editor in newspapers around the country, the idea that evolution is shaky science is constantly spread to the general public, which by and large is unaware of the theoretical and evidentiary strength of evolution. Evolution as a science is discussed in chapter 2.

EVOLUTION AND RELIGION ARE INCOMPATIBLE

Darwin made two major points in *On the Origin of Species*: that living things had evolved, or descended with modification, from common ancestors, and that the mechanism of natural selection was evolution's major cause. These two components of his book often are jumbled together by antievolutionists, who argue that if natural selection can be shown to be inadequate as an evolutionary mechanism, then the idea of common descent necessarily fails. But the two constituents of Darwin's argument are conceptually and historically distinct. Common descent was accepted by both the scientific and the religious communities more quickly than was the mechanism of natural selection. Further separating the two components of Darwinism is the fact that the religious objections to each are quite distinct. For these reasons, I will separate these two theoretical concepts in discussing religious objections to evolution.

Common Ancestry

Biblical literalists are strongly opposed to the idea of common ancestry—especially common ancestry of humans with other creatures. According to some literal interpretations of the Bible, God created living things as separate "kinds." If living things instead have descended with modification from common ancestors, the Bible would be untrue. Many biblical literalists (Young Earth Creationists, or YECs) also believe that Earth's age is measured in thousands rather than billions of years.

Yet even before Darwin published *On the Origin of Species*, there was compelling evidence for an ancient Earth and the existence of species of living things before the advent of humans. Fossils of creatures similar to but different from living forms were known, which implied that Genesis was an incomplete record of creation. More troubling was the existence of fossils of creatures not known to be alive today, raising the possibility that God allowed some creatures to become extinct. Did the evidence of extinction mean that God's Creation was somehow not perfect? If Earth was ancient and populated by creatures that lived before humans, death must have preceded Adam's fall—which has obvious implications for the Christian doctrine of original sin. These theological issues were addressed in a variety of ways by clergy in the nineteenth and early twentieth centuries (see chapters 3, 4, and 12, and references).

Unquestionably, evolution has consequences for traditional Christian religion. Equally unquestionably, Christian theologians and thoughtful laymen have pondered these issues and attempted to resolve the potential contradictions between traditional religion and modern science. Some of these approaches are discussed in chapter 12.

Natural Selection

Natural selection refers to Darwin's principal mechanism of evolution, which you will learn about in more detail in chapter 2. Those individuals in a population that (genetically) are better able to survive and reproduce in a particular environment leave more offspring, which in turn carry a higher frequency of genes promoting adaptation to that environment. Though effective in producing adaptation, natural selection is a

wasteful mechanism: many individuals fall by the wayside, poorly adapted, and fail to survive and/or reproduce.

Even Christians who accept common descent may be uneasy about Darwin's mechanism of natural selection as the major engine of evolutionary change. Common ancestry itself may not be a stumbling block, but if the variety of living things we see today is primarily the result of the incredibly wasteful and painful process of natural selection, can this really be the result of actions of a benevolent God? The theodicy issue (the theological term for the problem raised by the existence of evil in a world created by a benevolent God) is a concern for both biblical literalist and nonliteralist Christians and, as discussed in chapter 6, is a major stumbling block to the acceptance of evolution by intelligent design creationists (IDCs). Yet the evidence for the operation of natural selection is so overwhelming that both IDCs and YECs now accept that it is responsible for such phenomena as pesticide resistance in insects or antibiotic resistance in bacteria. YECs interpret the wastefulness of natural selection as further evidence of the deterioration of creation since the fall of Adam. Both YECs and IDCs deny that natural selection has the ability to transform living things into different kinds or to produce major changes in body plans, such as the differences between a bird and a reptile.

Thus, religious objections to evolution are not simple; they span a range of concerns. Religious objections to evolution are far more important in motivating antievolutionism than are scientific objections to evolution as a weak or unsupported theory.

"BALANCING" EVOLUTION (FAIRNESS)

A third antievolution theme present as far back as the 1925 Scopes trial and continuing today is the idea that if evolution is taught, then creationism in some form should also be taught, as a matter of fairness. The fairness theme has, however, had many manifestations through time, largely evolving in response to court decisions (see chapters 6, 10, and 11).

The fairness pillar reflects American cultural values of allowing all sides to be heard, and also a long-standing American democratic cultural tradition that assumes an individual citizen can come to a sound conclusion after hearing all the facts—and has the right to inform elected officials of his or her opinion. Indeed, for many local and even national issues, Americans do not defer to elected and appointed officials but vigorously debate decisions in town meetings, city council meetings, and school board meetings.

As a result, in the United States there are disputes at the local school board level over who—scientists, teachers, or members of the general public—should decide educational content. In the 1920s, the populist orator, politician, and lawyer William Jennings Bryan raged at the audacity of "experts" who would come to tell parents what to teach their children, when (as he thought) the proposed subject matter (evolution) was diametrically opposed to parental values (see chapter 4).

Many modern-day antievolutionists make this same point, arguing that conservative Christian students should not even be exposed to evolution if their religious beliefs disagree with evolution's implications. Educators and scientists counter that a student must understand evolution to be scientifically literate and insist that the science

curriculum would be deficient if evolution were omitted. Efforts to ban the teaching of evolution failed, as a result of both rulings by the Supreme Court and the growth of evolution as a science (see chapters 2, 4, 5, and 10). Antievolutionists shifted their emphasis from banning evolution to having it "balanced" with the teaching of a form of creationism called creation science (see chapters 3 and 5). When this effort also failed, antievolutionists began to lobby school boards and state legislatures to balance evolution with the teaching of evidence against evolution, which in content proved identical to creation science.

The perceived incompatibility of evolution with religion (especially conservative Christian theology) is the most powerful motivator of antievolutionism for individuals. However, the fairness concept, because of its cultural appeal, may be even more effective, for it appeals broadly across many diverse religious orientations. Even those who are not creationists may see value in being fair to all sides, whether or not they believe that there is scientific validity to creationist views. Scientists and teachers argue, however, that to apply fairness to the science classroom is a misapplication of an otherwise worthy cultural value (see chapters 9, 11, and 12).

A LOOK FORWARD

Consider these three themes, then, as you read the following chapters. Reflect on how these pillars of creationism have influenced the history of this controversy and continue to be reflected in creationism/evolution disputes you read about in the news or see on television. Should you encounter such a local or state-level controversy, you will, I predict, easily be able to place creationist arguments into one (or more) of these categories. The following chapters will provide context for understanding these three themes as well as the creationism/evolution controversy itself.

REFERENCE

Denton, Michael. 1999. Comments on special creationism. In *Darwinism defeated? The Johnson-Lamoureux debate on biological origins*, ed. P. E. Johnson and D. O. Lamoureux. Vancouver, BC: Regent College Publishing.

PART I

Science, Evolution, Religion, and Creationism

The creationism/evolution controversy has been of long duration in American society and shows no sign of disappearing. To understand it requires some background in the two subject areas most closely concerned with the controversy, science and religion. Within science and religion, the subareas of evolution and creationism are clearly central to the dispute.

Most people will recognize that religion and creationism are related concepts, as are science and evolution, but there also is something called creation science, and there is even a form of religion called scientism. In this introductory section, then, you will read about science, evolution, religion, creationism, and scientism.

These and other subjects constitute part 1 of *Evolution vs. Creationism: An Introduction*. I assume that readers of this book will vary greatly in their understanding of these subjects, so I have tried to present material at a level that does not leave behind the beginner but has enough detail to interest a reader with a more-than-average background in philosophy of science, evolution, or religious studies. At a minimum, readers will at least know how I define and use the terms that will recur throughout the book.

In the first chapter, "Science," I consider different ways of knowing and how the way of knowing called science is especially appropriate to knowing about the natural world. Testing is the most important component in science, and I discuss different kinds of testing. In the second chapter, "Evolution," I discuss some of the basic ideas in this broad scientific discipline. The third chapter, "Beliefs," discusses religion as a universal set of beliefs, with particular attention to origin stories and creationisms. It also discusses naturalism as a belief. Because of the importance of the Christian religion to the creationism/evolution controversy, most of this chapter deals with Christian creationism.