

## Science and Creation

When Darwin published *The Origin of Species* in 1859, he aggravated a controversy that had been building for at least half a century. As scientists sought to explain more and more phenomena by natural causes, they challenged supernatural explanations and brought science into conflict with religion. "Religion," the evolutionary English philosopher Herbert Spencer asserted, "has been impelled by science to give up one after another of its dogmas, of those assumed cognitions which it could not substantiate." The two cutting-edge sciences of the nineteenth century, geology and biology, were in the frontline of the assault. Geologists sought to separate geological theory from the Bible and to establish nature as the sole source of truths about the history of the earth. Charles Lyell,<sup>1</sup> Darwin's friend and mentor, argued that past changes in the earth were not caused by catastrophes like Noah's flood but by the same processes that could be observed operating in the present. This principle and others like it challenged the notion of divine intervention. Biologists attributed the extinction of some species and the emergence of others to natural causes, explanations that seemed to call into question the biblical account of creation. Darwin brought together many of the ideas of geologists and biologists and integrated them into a coherent theory that revealed the natural mechanisms by which life evolved. In doing so, he became the representative of Science and its challenges to religion. The texts chosen for this section discuss the

<sup>1</sup>Charles Lyell: (1797–1875) English geologist whose *Principles of Geology* (1830–33) gained general acceptance for the theory of uniformitarianism, the theory that earth changes are caused by forces that have operated uniformly from the origin of the earth to the present time.



"The Lion of the  
This satiric cartoon  
was raging. (Art



"The Lion of the Season," 1861

This satiric cartoon was published while the controversy over Darwin's Origin of Species was raging. (Art Resource)



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— HERBERT SPENCER,  
1862

impact of science in the nineteenth century on literature and religion, especially religious doctrines about the creation of life.

#### EVOLUTION AND CREATION

The theory of evolution particularly challenged three doctrines of creation held by many orthodox Christians. Evolution's account of slow and continual modifications to biological species applied geological uniformitarianism to biology, confirmed the geologist's account of the history of the earth, and discredited the Bible-based calendar that dated creation at about 4000 B.C.E.<sup>2</sup> It also challenged the doctrine of a permanent and fixed creation that was based on the creation narrative in Genesis, which describes all species being created at one time. Darwin contended that creation is an ongoing process, a continuous struggle out of which the surviving species emerge like the victors of a battle. Finally, evolution called into question the notion of the "special creation" of mankind by God and argued instead that humans were animals that had developed over time from lower forms. That man should be a younger cousin of the ape was probably the idea most offensive to the church and its adherents.

The theory of evolution led many religious people to doubt their faith; it also raised doubts about science. The excerpt from Bishop Samuel Wilberforce's review of *The Origin of Species* is representative of the reaction of many religious people to Darwin's ideas. Although Wilberforce claims to be responding to *Origin* "solely on scientific grounds," his objections really go back to what he considers its incompatibility with Scripture. Alfred, Lord Tennyson was also distressed by the religious implications of the new sciences. In *In Memoriam* (1850), he records his doubts after learning that the fossil record indicates that many species have become extinct, which suggests to him that there is no God who cares about the life or death of individual creatures, and that in a "Nature, red in tooth and claw," the only laws seem to be those of chance and the struggle for existence. As Tennyson and many others saw it, the scientific worldview destroyed the possibility

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<sup>2</sup> Bible . . . B.C.E.: In the mid seventeenth century, Archbishop James Ussher (1581–1656) constructed a calendar based on Scripture that dated creation at 4004 B.C.E. It was incorporated into many editions of the Bible and adopted by many Christians.

of a personal God, and it lacked the beauty and harmony associated with divine creation.

#### SCIENCE AND LITERATURE

Even writers who had no particular religious objections to science nonetheless found its impact unsettling. For some Romantics, science, with its crude physical view of reality, undermined the imagination. The protagonist of Mary Shelley's *Frankenstein* (1818), scientist Victor Frankenstein, pieces together a creature from body parts dug up from graves and galvanizes it to life. But disgusted by the crudity of his creation, he rejects and abandons it. The story, read variously as a parable about the responsibility of the artist, about childbirth and parenthood, and about the inevitable frustrations of the creative process, is also a commentary on the limitations of science. Edgar Allan Poe's "Sonnet—To Science" describes the chilling effect of the "dull realities" of science on the imagination. Later in the century, however, these dull realities would show up in the novels of REALISTS who consciously tried to faithfully depict the physical world around them. Émile Zola, leader of the NATURALISTS<sup>3</sup> in France, based his whole aesthetic on an evolutionary perspective. In the passage from the Preface to the second edition of *Thérèse Raquin*, Zola defends his novel from critics who attacked its morality. He explains that his characters are creatures determined by physical laws, animals reacting instinctively to the physical and hereditary forces that work on them.

#### SCIENCE AND THE CREATION STORY

Some religions responded to the challenges brought by science by attempting to adapt religion to the new ideas. Some theologians sought to elucidate Christian doctrine and the Bible in the new light of science, using both the Scriptures and nature as sources of revelation. These commentators developed, for example, natural explanations for the miracles recorded in the Bible. At the same time, "higher criticism," a movement to apply historical, linguistic, and critical theories to the interpretation of Scripture, looked on biblical

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tay-REZ rah-KANG

<sup>3</sup> Naturalists: A school of Realist writers led by Émile Zola, who formulated Naturalism's main tenets, which applied science to literary theory and characterized human beings as physical creatures whose lives were determined by heredity, environment, and physical instincts.



p. 400 stories as myths containing symbolic but not literal truth. In developing *The Woman's Bible*, Elizabeth Cady Stanton and her colleagues relied on the work and methods of these biblical reinterpreters to challenge patriarchal readings of Scripture, especially the story of the Garden of Eden. **Hirata Atsutane**, part of the NEO-SHINTO revival in Japan, objected to similar license taken by those who reinterpreted Shintoism's sacred texts as myths. He might be described as a Shinto fundamentalist, although his argument for the literal truth of the Shinto creation story is based on the proposition that similar stories are found in many other world religions. On the other hand, **Syed Ahmed Khan**, an Islamic scholar, argues that there can be no differences between science and religion since both are devoted to discovering the truth. Science simply reveals the truths about God's creation. **Hu Shi**, a Chinese BUDDHIST writing in the early twentieth century under the influence of Western ideas, dismisses traditional religion and derives his philosophy of life from science alone.

p. 406  
hee-RAH-tah  
aht-soo-TAH-neh

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p. 409  
hoo-SHUR

#### ■ CONNECTIONS

**Goethe, *Faust*, p. 29.** Goethe was a scientist as well as a poet and dramatist. Do you find evidence of a scientific point of view in *Faust*? Could Faust's agreement with Mephistopheles be said to arise from a scientific curiosity? Think about Faust's project to drain the marshes. Could it be considered a "scientific" endeavor? How does it contribute to Faust's redemption?

**Tagore, *Broken Ties*, p. 986.** In *Broken Ties*, Western scientific "atheism," represented by Jagomohan, who subscribes to the views of the Utilitarian philosophers Jeremy Bentham and John Stuart Mill, confronts Eastern spirituality, here represented by Harimohan, a Hindu traditionalist, and Lilananda Swami. What does the story suggest are the positive and negative aspects of each point of view? Is the conflict between them resolved by the end of the story?

**Pardo Bazan, "The Oldest Story," p. 699; Machado de Assis, "Adam and Eve," p. 922.** Elizabeth Cady Stanton's feminist commentary on Genesis relates to two other "reinterpretations" of the Adam and Eve story, those of Emilia Pardo Bazan in "The Oldest Story" and Machado de Assis in "Adam and Eve." Do any of these works reflect the influence of science on religious belief in the nineteenth century?

#### ■ PRONUNCIATION

Chang Chün-mai: jahng-jwen-MIGH

Hamadryad: ham-uh-DRIGH-ad

Hirata Atsutane: hee-RAH-tah aht-soo-TAH-neh

Hu Shi: hoo-SHUR

Liang Ch'i-ch'ao: lyahng-chee-CHOW

Naiad: NIGH-yad

Takami-musubi: tah-KAH-mee moo-SOO-bee

Shakyamuni: shuk-yuh-MOO-nee

Wu Chih-hui: woo-zhur-HWAY

An Anglican naturalist, *Quarterly*, divinely in meeting on June 30, 18 Thomas H was from from an ap no reason were an ar man, a ma an equivocal tific questi

