Ch 16: Religion and Science
1450–1750

CHAPTER OVERVIEW

CHAPTER LEARNING OBJECTIVES

• To explore the early modern roots of modern tension between religion and science
• To examine the Reformation movements in Europe and their significance
• To investigate the global spread of Christianity and the extent to which it syncretized with native traditions
• To expand the discussion of religious change to include religious movements in China, India, and the Islamic world
• To explore the reasons behind the Scientific Revolution in Europe, and why that movement was limited in other parts of the world
• To explore the implications of the Scientific Revolution for world societies

CHAPTER OUTLINE

I. Opening Vignette
   A. The current evolution vs. “intelligent design” debate has its roots in the early modern period.
      1. Christianity achieved a global presence for the first time
      2. the Scientific Revolution fostered a different approach to the world
      3. there is continuing tension between religion and science in the Western world
   B. The early modern period was a time of cultural transformation.
      1. both Christianity and scientific thought connected distant peoples
      2. Scientific Revolution also caused a new cultural encounter, between science and religion
      3. science became part of the definition of global modernity
   C. Europeans were central players, but they did not act alone.

II. The Globalization of Christianity
   A. In 1500, Christianity was mostly limited to Europe.
      1. small communities in Egypt, Ethiopia, southern India, and Central Asia
      2. serious divisions within Christianity (Roman Catholic vs. Eastern Orthodox)
      3. on the defensive against Islam
         a. loss of the Holy Land by 1300
         b. fall of Constantinople to the Ottomans in 1453
         c. Ottoman siege of Vienna in 1529
   B. Western Christendom Fragmented: The Protestant Reformation
      1. Protestant Reformation began in 1517
         a. Martin Luther posted the Ninety-five Theses, asking for debate about ecclesiastical abuses
         b. Luther’s was one of many criticisms of the Roman Church
         c. Luther’s protest was more deeply grounded in theological difference
         d. questioned the special role of the clerical hierarchy (including the pope)
      2. Luther’s ideas provoked a massive schism in Catholic Christendom
Period 5: Industrialization and Global Integration, c. 1750 to c. 1900

1. Fed on political, economic, and social tension, not just religious differences
2. Some monarchs used Luther to justify independence from the papacy
3. Gave a new religious legitimacy to the middle class
4. Commoners were attracted to the new religious ideas as a tool for protest against the whole social order

3. Many women were attracted to Protestantism, but the Reformation didn’t give them a greater role in church or society
   a. Protestants ended veneration of Mary and other female saints
   b. Protestants closed convents, which had given some women an alternative to marriage
   c. Only Quakers among the Protestants gave women an official role in their churches
   d. Some increase in the education of women, because of emphasis on Bible reading

4. The recently invented printing press helped Reformation thought spread rapidly

5. As the Reformation spread, it splintered into an array of competing Protestant churches

6. Religious difference made Europe’s fractured political system even more volatile
   a. 1562–1598: French Wars of Religion (Catholics vs. Huguenots)
   b. 1618–1648: the Thirty Years’ War

7. Protestant Reformation provoked a Catholic Counter-Reformation
   a. Council of Trent (1545–1563) clarified Catholic doctrines and practices
   b. Corrected the abuses and corruption that the Protestants had protested
   c. New emphasis on education and supervision of priests
   d. Crackdown on dissidents
   e. New attention given to individual spirituality and piety
   f. New religious orders (e.g., the Society of Jesus [Jesuits]) were committed to renewal and expansion

8. The Reformation encouraged skepticism toward authority and tradition
   a. Fostered religious individualism
   b. In the following centuries, the Protestant habit of independent thinking led to skepticism about all revealed religion

C. Christianity Outward Bound

1. Christianity motivated and benefited from European expansion
   a. Spaniards and Portuguese saw overseas expansion as a continuation of the crusading tradition
   b. Explorers combined religious and material interests

2. Imperialism made the globalization of Christianity possible
   a. Settlers and traders brought their religion with them
   b. Missionaries, mostly Catholic, actively spread Christianity
   c. Missionaries were most successful in Spanish America and the Philippines

D. Conversion and Adaptation in Spanish America

1. Process of population collapse, conquest, and resettlement made Native Americans receptive to the conquering religion
2. Europeans claimed exclusive religious truth, tried to destroy traditional religions instead of accommodating them
   a. Occasional campaigns of destruction against the old religions
   b. Some overt resistance movements
3. blending of two religious traditions was more common
   a. local gods (huacas) remained influential
   b. immigrant Christianity took on patterns of pre-Christian life
   c. Christian saints took on functions of precolonial gods
   d. leader of the church staff (fiscal) was a prestigious native who carried on
      the role of earlier religious specialists
   e. many rituals survived, often with some Christian influence

E. An Asian Comparison: China and the Jesuits
1. Christianity reached China in the powerful, prosperous Ming and Qing
   dynasties
   a. called for a different missionary strategy; needed government permission
      for operation
   b. Jesuits especially targeted the official Chinese elite
2. no mass conversion in China
   a. some scholars and officials converted
   b. Jesuits were appreciated for mathematical, astronomical, technological,
      and cartographical skills
   c. missionary efforts gained 200,000–300,000 converts in 250 years
3. missionaries didn’t offer much that the Chinese needed
   a. Christianity was unappealing as an “all or nothing” religion that would call
      for rejection of much Chinese culture
   b. early eighteenth century: papacy and other missionary orders opposed
      Jesuit accommodation policy

III. Persistence and Change in Afro-Asian Cultural Traditions
A. African religious elements accompanied slaves to the Americas
1. development of Africanized forms of Christianity in the Americas, with
   divination, dream interpretation, visions, spirit possession
2. Europeans often tried to suppress African elements as sorcery
3. persistence of syncretic religions (Vodou, Santeria, Candomble, Macumba)
B. Expansion and Renewal in the Islamic World
1. continued spread of Islam depended not on conquest but on wandering holy
   men, scholars, and traders
2. the syncretism of Islamization was increasingly offensive to orthodox Muslims
   a. helped provoke movements of religious renewal in the eighteenth century
   b. series of jihads in West Africa (eighteenth/early nineteenth centuries)
      attacked corrupt Islamic practices
   c. growing tension between localized and “pure” Islam
3. the most well-known Islamic renewal movement of the period was
   Wahhabism
   a. developed in the Arabian Peninsula in mid-eighteenth century
   b. founder Abd al-Wahhab (1703–1792) was a theologian
   c. aimed to restore absolute monotheism, end veneration of saints
   d. aimed to restore strict adherence to the sharia (Islamic law)
   e. movement developed a political element when Abd al-Wahhab allied with
      Muhammad Ibn Saud; led to creation of a state
   f. the state was “purified”
   g. the political power of the Wahhabis was broken in 1818, but the
      movement remained influential in Islamic world
   h. reform movements persisted and became associated with resisting
      Western cultural intrusion
C. China: New Directions in an Old Tradition

1. Chinese and Indian cultural/religious change wasn’t as dramatic as what occurred in Europe
   a. Confucian and Hindu cultures didn’t spread widely in early modern period
   b. but neither remained static
2. Ming and Qing dynasty China still operated within a Confucian framework
   a. addition of Buddhist and Daoist thought led to creation of Neo-Confucianism
   b. both dynasties embraced the Confucian tradition
3. considerable amount of debate and new thinking in China
   a. Wang Yangmin (1472–1529): anyone can achieve a virtuous life by introspection, without Confucian education
   b. Chinese Buddhists also tried to make religion more accessible to commoners—withdrawal from the world not necessary for enlightenment
   c. similarity to Martin Luther’s argument that individuals could seek salvation without help from a priestly hierarchy
   d. kaozheng (“research based on evidence”) was a new direction in Chinese elite culture
4. lively popular culture among the less well educated
   a. production of plays, paintings, and literature
   b. great age of novels, such as Cao Xueqin’s The Dream of the Red Chamber (mid-eighteenth century)

D. India: Bridging the Hindu/Muslim Divide

1. several movements brought Hindus and Muslims together in new forms of religious expression
2. bhakti movement was especially important
   a. devotional Hinduism
   b. effort to achieve union with the divine through songs, prayers, dances, poetry, and rituals
   c. appealed especially to women
   d. often set aside caste distinctions
   e. much common ground with Sufism, helped to blur the line between Islam and Hinduism in India
   f. Mirabai (1498–1547) is one of the best-loved bhakti poets
3. growth of Sikhism, a religion that blended Islam and Hinduism
   a. founder Guru Nanak (1469–1539) had been part of the bhakti movement; came to believe that Islam and Hinduism were one
   b. Nanak and his successors set aside caste distinctions and proclaimed essential equality of men and women
   c. gradually developed as a new religion of the Punjab
   d. evolved into a militant community in response to hostility

IV. A New Way of Thinking: The Birth of Modern Science

A. The Scientific Revolution was an intellectual and cultural transformation that occurred between the mid-sixteenth century and the early eighteenth century.
1. was based on careful observations, controlled experiments, and formulation of general laws to explain the world
2. creators of the movement saw themselves as making a radical departure
3. Scientific Revolution was vastly significant
   a. fundamentally altered ideas about the place of humankind within the cosmos
b. challenged the teachings and authority of the Church
c. challenged ancient social hierarchies and political systems
d. also used to legitimize racial and gender inequality
e. by the twentieth century, science had become the chief symbol of modernity around the world

B. The Question of Origins: Why Europe?
1. the Islamic world was the most scientifically advanced realm in period 800–1400
2. China’s technological accomplishments and economic growth were unmatched for several centuries after the millennium
3. but European conditions were uniquely favorable to rise of science
   a. evolution of a legal system that guaranteed some independence for a variety of institutions by twelfth/thirteenth centuries
   b. idea of the “corporation”—collective group treated as a legal unit with certain rights
   c. autonomy of emerging universities
4. in the Islamic world, science remained mostly outside of the system of higher education
5. Chinese authorities did not permit independent institutions of higher learning
   a. Chinese education focused on preparing for civil service exams
   b. emphasis was on classical Confucian texts
6. Western Europe could draw on the knowledge of other cultures
7. sixteenth–eighteenth centuries: Europeans were at the center of a massive new information exchange
   a. tidal wave of knowledge shook up old ways of thinking
   b. explosion of uncertainty and skepticism allowed modern science to emerge

C. Science as Cultural Revolution
1. dominant educated-European view of the world before the Scientific Revolution
   a. derived from Aristotle and Ptolemy
   b. earth is stationary, at the center of the universe
   c. a universe of divine purpose
2. initial breakthrough was by Nicolaus Copernicus
   a. On the Revolutions of the Heavenly Spheres (1543)
   b. promoted the view that the earth and the planets revolved around the sun
3. other scientists built on Copernicus’s insight
   a. some argued that there were other inhabited worlds
   b. Johannes Kepler demonstrated elliptical orbits of the planets
   c. Galileo Galilei developed an improved telescope
4. Sir Isaac Newton was the apogee of the Scientific Revolution
   a. formulated laws of motion and mechanics
   b. central concept: universal gravitation
   c. natural laws govern both the micro- and the macrocosm
5. by Newton’s death, educated Europeans had a fundamentally different view of the physical universe
   a. not propelled by angels and spirits but functioned according to mathematical principles
   b. the “machine of the universe” is self-regulating
   c. knowledge of the universe can be obtained through reason
6. the human body also became less mysterious
7. Catholic Church strenuously opposed much of this thinking
   a. burning of Giordano Bruno in 1600 for proclaiming an infinite universe
   b. Galileo was forced to renounce his belief that the earth moved around an
      orbit and rotated on its axis
   c. but no early scientists rejected Christianity

D. Science and Enlightenment
1. the Scientific Revolution gradually reached a wider European audience
2. scientific approach to knowledge was applied to human affairs
   a. Adam Smith (1723–1790) formulated economic laws
   b. people believed that scientific development would bring “enlightenment” to
      humankind
3. Immanuel Kant (1724–1804) defined Enlightenment as a “daring to know”
4. Enlightenment thinkers believed that knowledge could transform human
   society
   a. tended to be satirical, critical, and hostile to established authorities
   b. attacked arbitrary government, divine right, and aristocratic privilege
   c. John Locke (1632–1704) articulated ideas of constitutional government
   d. many writers advocated education for women
5. much Enlightenment thought attacked established religion
   a. in his Treatise on Toleration, Voltaire (1694–1778) attacked the narrow
      particularism of organized religion
   b. many thinkers were deists—belief in a remote deity who created the world
      but doesn’t intervene
   c. some were pantheists—equated God and nature
   d. some even regarded religion as a fraud
6. Enlightenment thought was influenced by growing global awareness
7. central theme of Enlightenment: the idea of progress
8. some thinkers reacted against too much reliance on human reason
   a. Jean-Jacques Rousseau (1712–1778) argued for immersion in nature
      rather than book learning
   b. the Romantic movement appealed to emotion and imagination
   c. religious awakenings made an immense emotional appeal

E. Looking Ahead: Science in the Nineteenth Century
1. modern science was cumulative and self-critical
2. in the nineteenth century, science was applied to new sorts of inquiry; in
   some ways, it undermined Enlightenment assumptions
3. Charles Darwin (1809–1882) argued that all of life was in flux
4. Karl Marx (1818–1883) presented human history as a process of change and
   struggle
5. Sigmund Freud (1856–1939) cast doubt on human rationality

F. European Science beyond the West
1. science became the most widely desired product of European culture
2. Chinese had selective interest in Jesuits’ teaching
   a. most interested in astronomy and mathematics
   b. European science had substantial impact on the Chinese kaozheng
      movement
3. Japan kept up some European contact via trade with the Dutch
   a. import of Western books allowed, starting in 1720
   b. a small group of Japanese scholars was interested in Western texts,
anatomical studies in particular
4. Ottoman Empire chose not to translate major European scientific works
   a. Ottoman scholars were only interested in ideas of practical utility (e.g., maps, calendars)
   b. Islamic educational system was conservative, made it hard for theoretical science to do well

V. Reflections: Cultural Borrowing and Its Hazards
   A. Ideas shape peoples’ mental or cultural worlds and influence behavior.
   B. The development of early modern ideas took place in an environment of great cultural borrowing.
      1. borrowing was selective
      2. borrowing sometimes caused serious conflict
      3. foreign ideas and practices were often “domesticated”