

CHAPTER 5: 1450 TO 1750 CE

IF YOU ONLY LEARN SIX THINGS IN THIS CHAPTER . . .

1. As a result of the search for a faster way to the trade routes of the Indian Ocean, the Americas are included in the global trade network, and the process of true globalization begins. This encounter sets off the Columbian Exchange of goods, disease, and cultures, which spreads throughout the world.
2. Improvements in and the spread of shipping technologies and gunpowder weapons allow European countries to begin to exercise a more prominent role in world affairs.
3. Native American people die by the millions due to their exposure to previously unknown European diseases. African people are forcibly transported across the Atlantic Ocean to fill the need for forced labor on plantations.
4. New social structures emerge like those in the Americas based on race. While few women exert power publicly, women of the harem in the Ottoman Empire wield considerable power behind the scenes.
5. In Europe, the Renaissance and Reformation challenge previously accepted beliefs and the power of the Roman Catholic Church. In others parts of the world such as China, reaffirmation of more traditional beliefs is viewed as the key to stability.
6. European empires such as Spain and Portugal stretch their power overseas to conquer and control the newly encountered Americas. At the same time, dominant land-based empires such as the Ottoman, Mughal, and Qing grow powerful.

THE BIG PICTURE

1. Interactions between people and the environment

In other words: **How does the environment shape human societies, and how do humans shape the environment?**

Improvements in and the spread of shipping technologies and gunpowder weapons allowed European countries to begin their dominance of the world. Native American people died by the millions due to their exposure to previously unknown European diseases, and in Africa, people were forcibly transported across the Atlantic Ocean to fill the need for labor on plantations. The introduction of European agriculture and settlement patterns in the Americas led to deforestation and soil depletion.

2. Development and interaction of cultures

In other words: **How do people express themselves, and what is the impact of ideas?**

In Europe, the Renaissance and Reformation challenged previously accepted beliefs and the power of the Roman Catholic Church. In others parts of the world, like China, reaffirmation of more traditional beliefs was viewed as the key to stability.

3. State-building, expansion, and conflict

In other words: **How do people govern themselves?**

The predominant form of political organization remained the empire. European empires, like those of Spain and Portugal, stretched their power overseas to conquer and control the newly encountered Americas. At the same time, dominant land-based empires such as the Ottoman, Mughal, and Qing grew powerful.

4. Creation, expansion, and interaction of economic systems

In other words: **How do economic developments affect the world?**

During this period, the world becomes truly global. For the first time, the Americas are included in the global trade network and the process of true globalization begins. Trade is extended throughout all parts of the world. The European nations gain access to Asian trade routes and attempt to control them. The Columbian Exchange of goods, disease, and cultures spreads throughout the world.

5. Development and transformation of social structures

In other words: **How do people identify themselves socially, and what roles do men and women have?**

In the Americas, a new social structure emerges based on race. Those with pure European blood are considered the highest socially and politically, and those with indigenous or African blood are considered the lowest. Women of the harem in the Ottoman Empire wield considerable power behind the scenes.

WHY THIS PERIODIZATION?

The most significant change that occurs in this time period is the inclusion of the Americas in the global trade network. With this inclusion, a truly global economy develops. As Europeans are getting ready to reach out and explore the world around them, the previous world power, China, is more focused on internal stability. This shift allows Europe to rise as a dominant world power.

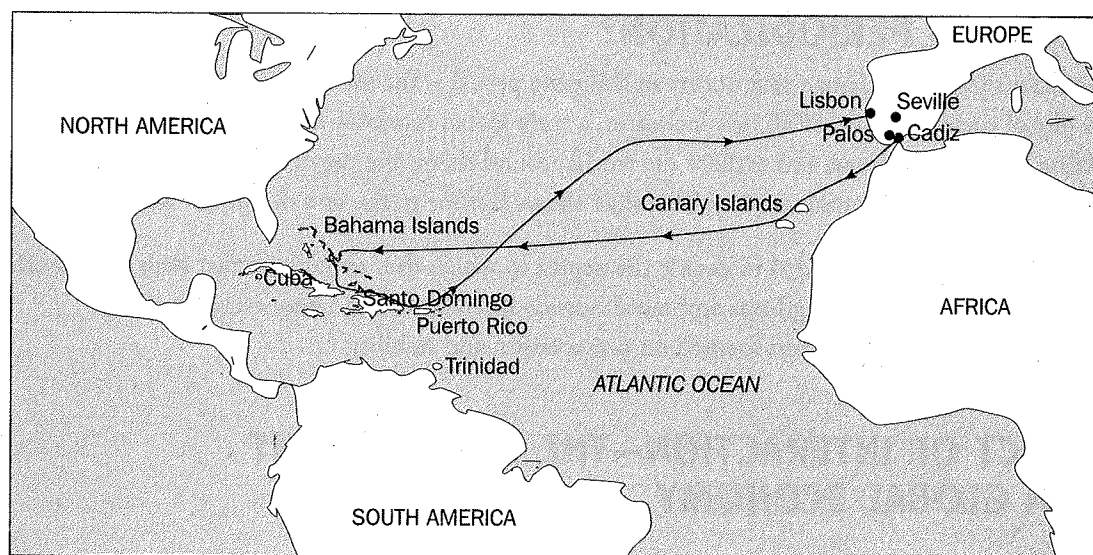
The empires of the day needed to decide the degree to which they should interact with the outside world. While European kingdoms embraced outside interaction and conquest, many other empires were more insular and focused on preservation and stability.

IMPACT OF INTERACTION—THE DEVELOPMENT OF A GLOBAL ECONOMY

EUROPEAN EXPLORATION

As discussed in the last chapter, the Ming dynasty had extensively explored the Indian Ocean from 1405 to 1433, but under pressure from conservative forces, decided to halt the voyages and destroy their ships. The Indian Ocean continued to be a thriving trade route, however, with non-European participants such as **Muslims, Indians, Malays,** and others. So when the European powers entered Indian Ocean trade, they were not so much creating this vibrant trade route as inserting themselves into an existing one. But by doing so, the world shifted from a primarily Asian-centered economy to a global economy.

As Europe emerged out of its more isolated period, the desire to explore came with it. The major motivations for this exploration included the search for resources, new trade routes to Asian markets, and the desire to spread Christianity. The Asian goods that Europe received, such as **pepper, ginger, cloves,** and **nutmeg,** were very expensive. Europeans wanted to gain direct access to these trade items and cut out the middleman. Additionally, **the Ottoman conquest of Constantinople in 1453** defeated the last vestiges of the Byzantine Empire, solidifying Muslim influence in the region and making it less friendly to European traders. The acquisition of technology from China and the Muslim world helped the Europeans expand their seagoing capabilities with such things as the sternpost rudder, triangular lateen sails, magnetic compass, and the astrolabe. The early leader in exploration was Portugal, which established sugar plantations on islands in the Atlantic off the coast of Africa, but many other expeditions would follow. The Portuguese were aided in their explorations by developing the caravel (a small, highly maneuverable sailing ship). Caravels were widely used by the Portuguese for ocean voyages during the age of European discovery.



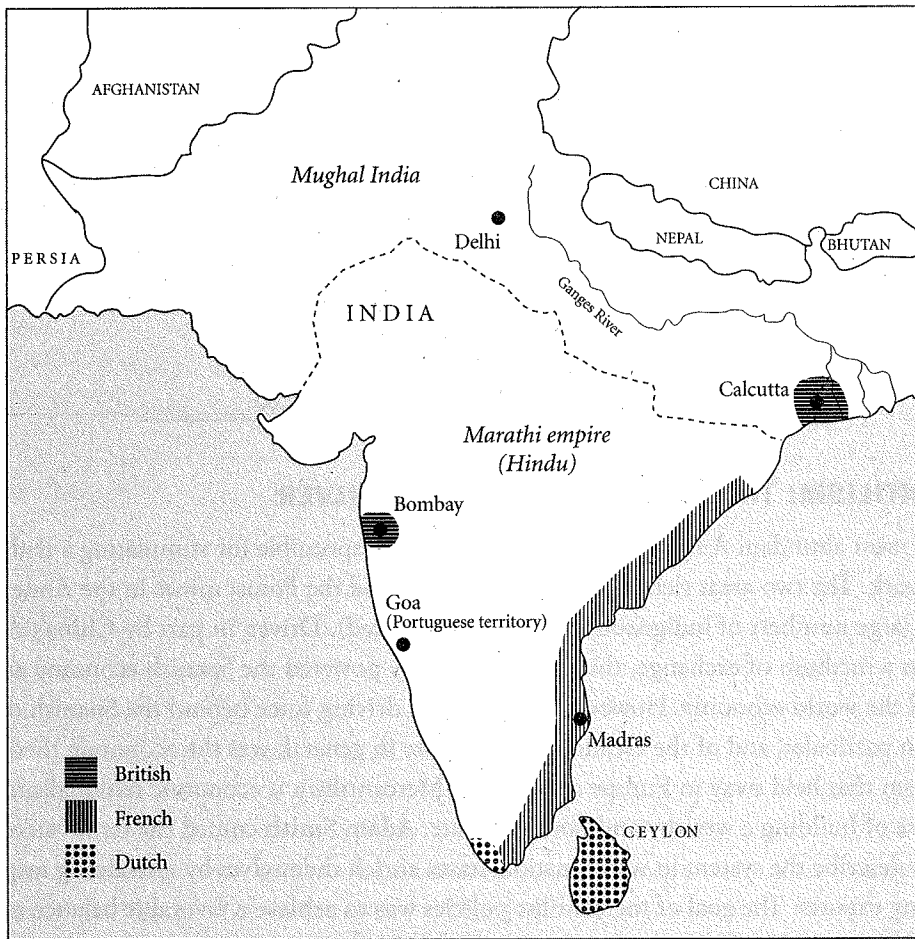
Columbus's First Voyage

Explorer	Year	Accomplishment
Bartolomeu Dias (Portugal)	1488	Rounded Cape of Good Hope at the tip of Africa and entered the Indian Ocean
Christopher Columbus (Spain)	1492	Sailed west to reach Asia and instead reached the Bahamas Sailed around Caribbean, but thought he had reached island just off the coast of Asia
Vasco da Gama (Spain)	1497	Reached Calicut in India by rounding Africa
Ferdinand Magellan (Spain)	1519–1522	Sailed around South America to the Philippine Islands (where he was killed); his men sailed back through the Indian Ocean and were the first to circumnavigate the globe

TRADING-POST EMPIRES

The initial goal of European powers in exploring the Indian Ocean was not to conquer, but rather to control the lucrative trade. They wanted to force merchant ships to trade in fortified trading sites and to pay duties for the privilege. By the mid-1500s, Portugal had 50 trading posts from West Africa to East Asia, but by the late 1500s, its power began to decline. The small country with its small population could not sustain the large seaborne empire.

The English and the Dutch quickly took Portugal's place as the dominant powers with their faster, cheaper, and more powerful ships. Additionally, they used **joint stock companies**, in which investors, rather than the crown, funded the expeditions.



Trading Posts

COLUMBIAN EXCHANGE

The inclusion of the Americas in the global trade network set off the global diffusion of plants, food, crops, animals, humans, and diseases known as the Columbian Exchange. The most devastating effect of this diffusion was the spread of **smallpox** to the Americas, to which the native people had no immunity. The Aztec Empire lost 95 percent of its population within a century and in this weakened state was controlled by its Spanish conquerors. Between 1500 and 1800, 100 million people died from the spread of disease to the Americas. Smallpox and other diseases were brought to the Americas by human carriers as well as by the rats and mosquitoes that Europeans unknowingly brought with them.

The **diffusion of food crops and animals** also revolutionized life around the world, leading to an increase in the nutritional value of diets and a population increase worldwide.

Europe to the Americas	Americas to Africa, Asia, and Europe
Wheat	Maize
Sugarcane	Potatoes
Cotton	Beans
Horses	Tomatoes
Cattle	Pepper
Pigs	Peanuts
Sheep	Avocados
Goats	Pineapples
Chickens	Tobacco

MERCANTILISM: THE ROLE AND IMPACT OF SILVER

Silver, the most abundant American precious metal, was responsible for stimulating a truly global trade network. The two areas rich in silver were Mexico and the Potosí mines in the Andes, which employed large numbers of indigenous labor (usually forced). Driven in part by China's desire for silver as a medium of exchange, this mining industry powered the Spanish economy and stimulated the world economy. However, the principal driving force behind the Spanish drive for silver in particular, and of the creation of an empire in general, was the economic theory of mercantilism that held sway in Europe at the time. Mercantilism is economic nationalism for the purpose of building a wealthy and powerful state. **Adam Smith** coined the term "mercantile system" to describe the system in which nation-states enrich themselves by restraining imports and encouraging exports. The goal of mercantilist policies was to achieve a favorable balance of trade that would bring gold and silver into the country and also to maintain domestic employment. The most important economic rationale for mercantilism in the 16th century was the growth of a nation's power relative to competitive nation-states. Viewed in terms of mercantilist theory, the Spanish colonization of the Americas makes a great deal of sense. Silver was used to trade for silk and porcelain in Asia, and it financed Spain's powerful army and bureaucracy; in order for the Spanish to purchase Chinese goods at that time, they needed to use American silver.

ROLE AND IMPACT OF SUGAR

Another influential product of this time period was sugar. The cultivation and production of sugar was a complex production requiring land, labor, buildings, animals, capital, and technical skills. It required both intensive labor (for planting and harvesting the cane) and specialized skills (for the sugar-making process). Because smallpox had wiped out so many native peoples in the Americas, enslaved Africans became the main labor force. These slaves invariably worked under very harsh conditions—mistreatment, extreme heat, and poor nutrition—leading to significant disease and death.

These sugar plantations were, in many aspects, proto-factories in that they were financed and organized to create a single product in a complex manufacturing process that took place in

one area and resembled the way in which the future manufacturing processes of the Industrial Revolution would look. Certainly the lessons learned from the sugar plantations would be learned by generations of European businessmen and eventually translated into the textile industry, thus kicking off the Industrial Revolution of the 19th century.

STATE-BUILDING

OTTOMAN EMPIRE (EARLY 1300S TO 1923)

The Ottoman Empire got its start as a band of seminomadic Turks who migrated to northwest Anatolia in the 13th century, but through their military might, transformed into a major political power. As the Mongols' power declined in the Middle East, the Ottomans replaced them as the dominant influence.

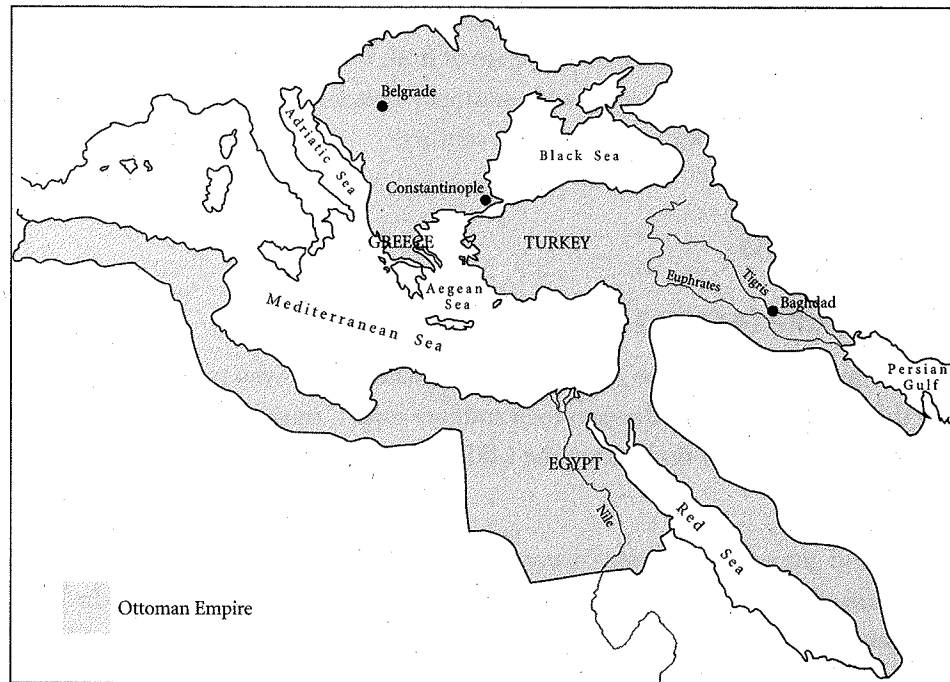
Military might and gunpowder weapons drove the Ottomans to power. An elite fighting force of slave troops made of Christian boys (called **janissaries**) led the military powerhouse. In 1453, the Ottomans captured Constantinople and ended the long life of the Byzantine Empire. Under the leadership of sultans such as Mehmed and Suleyman, a tightly centralized absolute monarchy ruled the land. Additionally, Islamic religious scholars and legal experts served administrative functions. As the empire became more wealthy, though, the sultans grew more distant and removed themselves from the running of the government. The vizier headed the bureaucracy and often had more control and power than the sultan. Political succession was also a serious problem as succeeding sultans would often have all their brothers executed to eliminate any challenge to their authority.

In the capital city Istanbul, formerly Constantinople, the cathedral Hagia Sophia was converted to a grand mosque. This thriving city also had aqueducts, a flourishing marketplace, rest houses, religious schools, and hospitals. A large merchant and artisan class conducted business, but commercial exchanges and handicraft production were closely regulated by the government.

The sultan's harem, or private domain, was an influential element in Ottoman politics and society. His concubines and female relatives resided in the harem, and were accorded status when they had sons. Members of the harem—who were very close to the sultan and wielded a lot of political power—were often of slave origin and were non-Muslim, as the enslavement of Muslims was forbidden. They were trained and educated in reading, the Quran, sewing, and music.

The sultan's mother was given the title *queen mother*, and she served as an advisor to the throne. She administered the imperial household and engaged in diplomatic relations.

The empire reached its peak in the mid-1600s but became too large to maintain. The effectiveness of the administration declined and was plagued by corruption. The successors to the throne often lived sheltered lives and were unequipped to rule. Finally, as European military and naval technology outpaced theirs, the Ottomans were ill-equipped to effectively compete.

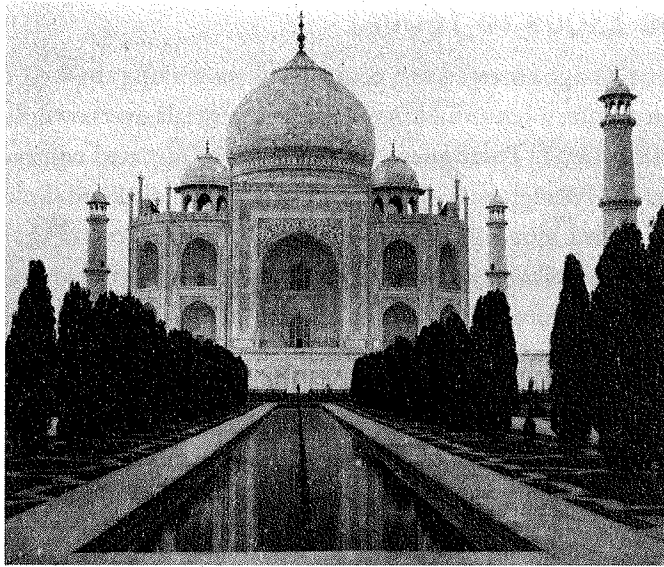


Expansion of the Ottoman Empire

MUGHAL INDIA (1523 TO MID-1700S)

India's history of predominantly decentralized regional kingdoms was interrupted during this time by the conquest of Babur and the establishment of the Mughal Empire. Babur, a descendant of Turkic nomads, began his conquest of India in 1526, and his grandson **Akbar** continued in this vein for the rule of India.

Akbar, a strong military commander, was also interested in uniting his empire. Akbar created a religion called the Divine Faith in which he combined elements of Islam and Hinduism. The purpose of the religion was to promote religious unity although it also legitimized the ruler as head of state and head of religion. He patronized the arts and was very interested in religious discussion. He initiated a policy of cooperation with Hindu rulers and the Hindu population by encouraging intermarriage, he **abolished the jizya** (non-Muslim tax), and he promoted Hindus to high-ranking government jobs. His descendants, Jahangir and Shah Jahan, were also **great patrons of the arts**. Painting workshops were expanded, leading to the creation of thousands of exquisite miniatures. Mughal architecture often blended Persian and Hindu traditions by using Islamic domes, arches, and minarets, along with Hindu ornamentation. The most famous example of Mughal architecture is the **Taj Mahal**, which Emperor Shah Jahan built as a tomb for his late wife.



Taj Mahal

Aurangzeb, Shah Jahan's son, seized the throne with a neglectful and corrupt bureaucracy and pushed to extend Muslim control to the whole of India. He also sought to rid India of all Hindu influences (bringing back the non-Muslim tax) and to purify India's Islam. His many wars drained the treasury, and peasant uprisings and revolts by both Muslim and Hindu princes weakened the empire.

Additionally, India had become a major overseas destination for European traders who demanded cotton. With a weakened empire, those traders were able to increase their influence.

SONGHAY (1464 TO 1591)

In the 1400s, the West African state of Songhay emerged to take power over the weakened Mali Empire. Its leader, Sunni Ali, consolidated his empire by appointing governors to oversee the provinces, building a large army, and creating an imperial navy to patrol the Niger River. The lucrative **trans-Saharan trade** flowed through the city of Gao, which brought salt, textiles, and metal in exchange for gold and slaves.

All Songhay emperors were **Muslims** who supported mosques, schools, and the Islamic university at **Timbuktu**. Still, even though Islam served as the cultural foundation of the empire and a key element in establishing cooperation with Muslim merchants, traditional religious beliefs were not abandoned.

Just as the Europeans were making inroads into Africa, the Songhay Empire began to lose control of its many subject peoples. The empire went into decline and was defeated by the Moroccans in 1591.

KONGO (AROUND 1300S TO 1600S)

In the 14th century, the Kongo emerged as a **centralized state** along the west coast of central Africa. In this organized state, a powerful king ruled, and officials oversaw military, judicial, and financial affairs. In 1482, a small **Portuguese** fleet arrived and initiated **commercial relations**, and within a few years the Portuguese had developed a close political and diplomatic relationship with the king. They provided him military force, which supported both of their interests. The kings also converted to **Christianity** in an effort to improve commercial and diplomatic relations. King Affonso I was a devout Roman Catholic and attempted to convert all of his subjects to Christianity.

The relationship between Portugal and Kongo seemed like one in which the participants were equal. The interaction brought wealth and foreign recognition to Kongo, but it eventually led to its decline. The Portuguese brought textiles, weapons, and craftsmen there, and they wanted gold, silver, and ivory. They especially wanted slaves, though, and in exchange for weapons, they began **slave raids** with the cooperation of local leaders. These dealings undermined the king's authority, however, and Kongo was defeated in war with the Portuguese in 1665. Thereafter, the kingdom never recovered its former power.

SPANISH AND PORTUGUESE OVERSEAS EXPANSION/EMPIRE (1500S TO EARLY 1800S)

Although Spanish conquistadors led the way in the conquest of the Americas, the Spanish crown was not far behind. The two major areas of the empire—New Spain (Mexico) and New Castile (Peru)—were each governed by a **viceroy**, who was responsible to the Spanish king. In 1494, the Treaty of Tordesillas, which was really a decree made by Pope Alexander VI and not a treaty between nations, divided the Americas in half: The Spanish controlled the west, and the Portuguese controlled the east.

This system was one in which Native Americans worked under brutal conditions. Anyone who resisted this coerced labor was hunted down and killed. Harsh treatment, starvation, and disease resulted in a huge decline in the population. Bartolome de las Casas, a conquistador turned priest, spoke out against the *encomienda* system and the treatment of Native Americans. His report to the Spanish crown resulted in passage of the New Laws of the Indies in 1542, which forbade the enslavement of Native Americans. This led to the establishment of the **repartimiento system**, under which Native Americans were supposed to receive a fair wage for their limited labor duty. However, these laws were not enforced and many Native Americans ended up in debt servitude. By 1530, the dramatic decline in the Native American population led Spain to solve the resulting labor shortage by importing enslaved Africans.

This led to the creation of the Atlantic slave trade or the **Atlantic system**. By 1650, nearly 300,000 enslaved Africans were forced to labor on **plantations** and in gold and silver mines. Enslaved Africans were part of a transatlantic trading network known as the **triangular trade**. The triangular trade was comprised of a network of trade routes that connected the Americas (including the West

Indies) with Europe and Africa. The network carried a variety of traded goods, and in keeping with mercantilist economic theory, operated mostly to the benefit of European powers.

Along with its goal of increasing its wealth through the creation of an empire, Spain desired to gain souls for Christianity. As a result, along with conquistadors came missionaries. They built mission churches to convert Native Americans, many of whom adopted Christianity but blended it with their own religious traditions. For the most part, however, these Spanish missionaries forcibly imposed European culture over Native American culture.

The social result of the conquest of this new empire was a multicultural and ethnically mixed population. The majority of the early migrants were men. The **peninsulares**, the highest social class, came directly from the Iberian peninsula, and their descendants were the **Creoles**. The mix of Europeans and Native Americans were the **mestizos**, and the mix of Europeans and Africans were the **mulattoes**. At the bottom of the social order were the Native Americans, Africans, and the mixed class of **zambos**.

QING DYNASTY (1644 TO 1911)

By the 1640s, the Ming dynasty had declined and been taken over by a peasant army. However, the Manchu, a community of hunters, fisherman, and farmers from the lands to the northeast of China, soon ousted them and took over as the Qing dynasty. Thus, China came under the rule of foreigners for the second time. The Manchus established and expanded their rule through military conquest. Like Chinggis Khan, who reorganized the Mongol army to lessen the importance of tribal allegiances, the Manchu leader Nurhaci created a large army consisting of units called **banners**, which were organized on a social basis. Each banner was comprised of a set of military companies, but included the families and slaves of the soldiers. Banners were led by a hereditary captain, many of whom came from Nurhaci's own lineage. When the Manchu army defeated new groups, they were incorporated to several banners to decrease their potential for causing problems.

The Manchu had made a conscious effort to mimic Chinese culture generations before this and, unlike the Mongols, bolstered many aspects of Chinese government to include using the Confucian civil service exam system. Like the Mongols, however, the Manchu wanted to preserve their own ethnic and cultural identity, so they forbade intermarriage between Manchu and Han Chinese, forbade Chinese from traveling to Manchuria and from learning their language, and forced Chinese men to wear their hair in a braid called a queue as a sign of submission.

The Qing dynasty created a multiethnic empire that was larger than any earlier Chinese dynasty. They expanded into Taiwan in 1683, Mongolia in 1696, and Tibet in the 1720s. By this time, the expanding Qing and Russian empires were nearing each other, which resulted in Manchu and Russian leaders approving a treaty that defined borders and regulated trade. The final area to be annexed was Chinese Turkestan in the 1750s. The Manchus ruled Tibet and Turkestan relatively lightly. Local religious leaders were allowed to remain in place and men were not forced to wear the queue.

RUSSIAN EMPIRE (1480 TO 1917)

After hundreds of years under Mongol tributary rule, Russia emerged as an empire of its own merit. The Mongols had forced the Russian princes to submit to their rule and to give them tribute and slaves. The princes collected the khan's taxes and suppressed popular uprisings, gaining power in the process. Eventually, the Muscovite princes were able to defeat their rivals for power. Ivan III, a grand prince of Moscow, stopped paying tribute to the Mongols and in 1480, began building an empire for himself. He established a strong central government ruled by an absolute monarch, the **czar**, who was also the head of the **Russian Orthodox Church**. The czar thus also received his authority from God. After a reign of terror by Ivan the Terrible, the **Romanov family** came to power in 1613, and it ruled Russia for the next 300 years.

Peter the Great, who reigned from 1682 to 1725, was fascinated with **Western technology** and instituted a policy of forced and rapid modernization. He established industries based on the most advanced science and technology. He was not interested in representative government, though, and instead reformed the military with professional soldiers and began to construct a navy. He required every nobleman to serve in the army or civil service for life. Needing skilled technicians and experts, he established schools to turn them out. Peter also created an interlocking military-civilian bureaucracy that had 14 ranks and functioned as a meritocracy, with some people from non-noble origins rising to positions of great authority. His obsession with "everything western" is best symbolized by his insistence that all Russian men wear Western clothes and shave their beards, and by his construction of the capital city, **St. Petersburg**, his window to the West.

JAPAN: TOKUGAWA SHOGUNATE (1600 TO 1867)

After a period of civil war and disorder that began in 1467 over succession to the shogunate and devolved into power struggles among various **daimyos** (warlords), Tokugawa Ieyasu established the Tokugawa Shogunate in 1600. He wanted to stabilize the region and prevent civil war. He did this by increasing his control over the daimyos, insisting that they spend every other year at the **capital, Edo (now Tokyo)**, where he could keep an eye on them.

Relationships with the outside world were also **closely controlled**. Japanese were forbidden from going abroad and from constructing large ships. Europeans were expelled from Japan and foreign merchants were not allowed to trade in Japanese ports (the only exception was a small number of Chinese and Dutch ships). Despite all these restrictions, the Japanese **economy grew**, as agricultural production increased and the population grew. In these more peaceful times, the samurai became government administrators.

Christianity had made some important inroads in Japan by 1580, with 150,000 Japanese Christian converts, but the government ended these missions and went as far as torturing and executing the missionaries who did not leave. The **Dutch merchants** continued to be the principal source of information about Europe, keeping the Japanese up-to-date with important scientific and technological developments.

SYSTEMS OF FORCED LABOR

ATLANTIC SLAVE TRADE

The forced migration of over 15 million Africans to the New World is one of the most significant outcomes of both the Age of Exploration and the Columbian Exchange that followed. Slavery existed in Africa since ancient times: Tribes would often take prisoners from neighboring tribes and enslave them. African law did not recognize private property, so land did not equal wealth. Control over human labor was what equaled wealth. The spread of Islam also established new trade routes across the northern part of the continent that took African slaves to the Middle East.

By the time Europeans ventured into sub-Saharan Africa, the slave traffic had been well-established for 500 years. The Portuguese explored the west coast of Africa in the 1500s, establishing trade relations with various tribes, and after they secured a piece of the New World in Brazil, brought slaves from Africa for their newly established **plantations**. The slave trade had become **trans-oceanic**, and profits from it encouraged other Europeans to enter the business.

By the mid-1600s, competing stations and fleets brought thousands of slaves monthly across the ocean. This ocean journey, known as the **Middle Passage**, consisted of a four- to six-week trip below-deck in cramped quarters. The death toll en route was considerable, with as many as half the enslaved Africans on any one ship dying from disease or brutal mistreatment during the journey. For most African slaves, the end destinations were either Brazil or the sugar plantations in the Caribbean. The **triangular trade** that developed sent European manufactured goods (firearms, in particular) to Africa for slaves, slaves to the Caribbean and American mainland, and American products back to Europe.

As more slaves were brought to the coast, African kingdoms reoriented their economies to trade with the Europeans. Some African societies benefited economically from the trade, but several experienced severe population loss and a change in male-female ratios. Also, many slaves were traded for guns, and the addition of firearms led to an increase in political conflict in Africa.

Plantation societies were located in the most tropical regions of the Americas, cultivating **cash crops** such as sugar, tobacco, cotton, or coffee. The goal and purpose of the plantation was to gain as much profit as possible from the export of these cash crops.

Though many of the Enslaved Africans were Christianized by the Europeans, they retained parts of their language and culture. A unique cultural synthesis occurred, as African music, dress, and mannerisms mixed with Spanish and indigenous cultures in the Americas. Indeed, the Atlantic slave trade and the institution of slavery had an enormous impact on the economies of the Portuguese and Spanish colonies of South America as well as on the Dutch, French, and British colonies of the Caribbean and North America. The labor of enslaved Africans produced huge profits in the extraction of gold and silver as well as in the production of cash crops such as sugar, cotton, rice, and tobacco. Moreover, enslaved Africans assumed positions as skilled laborers, supervisors, and administrators and worked as domestic servants.

ENCOMIENDA SYSTEM

The early Spanish settlers in the Caribbean needed to recruit a great deal of labor. In fact, the encomienda system gave them the **right to demand labor** in the mines and fields of native peoples. The laborers were worked hard and punished severely.

Cortez and Pizarro brought this system to the American mainland. On the **haciendas** (large estates), natives were often abused; as a result, Spanish officials replaced the encomienda system with the repartimiento system. This system compelled native communities **to supply labor** for Spanish mines and farms, but it limited their work time and it compensated them with wages. Many communities, however, were required to send groups of laborers to work on state projects. In Peru, for instance, the labor system called **mita** mobilized thousands of natives to work in the silver mines. They were paid wages, but there were also many abuses. The mita system had disastrous impacts on the Native American populations of Peru, as it drained them of able-bodied workers at a time when their communities were experiencing huge population losses due to epidemics of old-world diseases. It also led to Native Americans fleeing their communities to avoid being compelled into service. With fewer workers able to work the fields, agricultural production decreased leading to famine and malnutrition. The demise of these systems led to the establishment of the Atlantic slave trade and slavery in the Americas.

RUSSIAN SERFDOM

After the Mongol rule of Russia, many free peasants fell into **great debt** and were forced to become serfs on large estates. The Russian government encouraged this process beginning in the 1500s because it was a way to satisfy the nobility and to **regulate the peasants** at the same time. As new territories were added to the empire, serfdom extended along with it.

In 1649, an act proclaimed that serfs were born into their status and could not escape it. Serfs could be bought and sold, gambled away, and punished by their masters. Whole villages could be sold to supply manufacturing labor, but serfs were not literally slaves. Serfs who were illiterate and poor had to pay high taxes and owed extensive labor service to their landlords in the form of agriculture, mining, or manufacturing.

CULTURAL AND INTELLECTUAL CHANGES

EUROPEAN RENAISSANCE (BEGINNING IN THE 1400S)

Changes and tensions in the early 15th century CE led to new ways of thinking about the nature of humanity and the world. The changes took place slowly, starting on the Italian peninsula. The Crusades had brought Southern Europe into contact with Arab culture, and this stimulated an interest in other cultures and trade. Scholars were uncovering long-forgotten **Roman and Greek** written works that had been preserved and studied by Islamic scholars and that subsequently fired the minds of intellectuals in southern Europe. This intellectual reorientation became known as the Renaissance, or rebirth. The **rebirth** referred to the reappearance of ancient approaches to understanding the world.

HALLMARKS OF THE RENAISSANCE

- A new view of man as a creative and rational being
- A rediscovery of ancient Greco–Roman knowledge
- Unparalleled accomplishments in literature, music, and art
- A celebration of the human individual

Renaissance Italy was a patchwork of feudal domains—lands belonging to the Roman Catholic Church, kingdoms, and city-states. Famous noble families such as the Medicis had grown wealthy as merchants, since Italy was perfectly located for receiving goods from the Middle East and Asia. This lucrative trade with the **Islamic** and **Byzantine cultures** allowed wealthy Italians to become patrons of painters, sculptors, and scientists. The period was also a celebration of the Roman past; classical architecture and engineering were reexamined and relearned.

A new human ideal was created as the concept of a multifaceted **Renaissance man** emerged. Perhaps the best example of such a learned and talented individual was **Leonardo da Vinci**: As an artist, scientist, musician, architect, and engineer, he combined the talents of many men into one person. He made realistic sketches of models in his studio, going as far as to dissect corpses to learn how bones and muscles worked. Today, Leonardo's paintings are noted for their realism. *The Last Supper*, a painting whose subject matter is overtly religious (it depicts Christ and his apostles on the night before the crucifixion) is also a masterpiece of perspective, which is one of the innovations Renaissance artists are noted for.

Perhaps the single-most important development of the Renaissance was the **printing revolution**. In 1456, **Johann Gutenberg** of Germany printed the first complete edition of the Bible using the first printing press in the West (the Chinese had been using movable type for centuries). This printing revolution brought enormous changes to Europe. Printed books were less expensive and easier to read than copied manuscripts. The increase in the availability of books led to a rapid rise in literacy. European readers gained access to a wide range of knowledge on subjects, including

medicine, law, mathematics, and philosophy. Along with helping to spread classical knowledge and Renaissance ideas, these new printing presses also helped fuel the religious turmoil that Europe experienced during the 1500s.

PROTESTANT REFORMATION (BEGINNING IN THE 1500S)

Just as the Renaissance inspired an era of exploration, it also created an atmosphere that encouraged debate and criticism of the existing order. The most powerful institution of the day was the Catholic Church, headquartered in Rome. It had held great power over king and peasant alike for centuries, and had grown large, wealthy, and corrupt. Practices such as selling forgiveness and salvation began to offend even those in the priesthood.

A movement to reform the Church grew out of these concerns. In 1517, in the German domain of Wittenburg, an obscure priest named **Martin Luther** posted a list of issues that he believed the Church should address. The main issues raised by those that would reform the Church were:

- Divisions within the Papacy, in which more than one Pope claimed authority
- Religious traditions and rituals that were not derived from the Scriptures (such as purgatory, pilgrimages, and worship of the saints)
- Corrupt practices such as the sale of indulgences (forgiveness) and religious relics
- Church finances and income
- Lack of piety in the priesthood

Martin Luther and his fellow reformer's views unleashed a storm of controversy that eventually split the Catholic Church. It also divided Europe between those loyal to the Pope in Rome and those who broke away to form other churches. Luther was excommunicated from the Church but was protected by sympathetic German princes. The German lands were divided in hundreds of small kingdoms, nominally ruled over by the Holy Roman Emperor, in this case Charles V of Spain, a staunch Catholic. Many of the Northern German princes resented having to support both an "emperor" who was not German and the Church. Siding with Luther for both religious and political reasons, these princes were called Protestants. The German area became divided into two armed camps, Catholics and Protestants. The resulting conflict devastated the German lands, but ended in a treaty (the **Peace of Augsburg**, 1555) that enabled each prince to decide which religion—Catholic or Lutheran—would be the religion of his land. As a result, most states in northern Germany chose Lutheranism, while the south stayed largely Catholic.

The Protestant movement spread from central Europe to the Netherlands, Switzerland, Scandinavia, France, and Denmark. The English King Henry VIII, once a staunch supporter of the Catholic Church, fell away from the Church after a dispute with the Pope, and with the help of his Parliament created a new Church of England, of which the English monarch was the head.

ENLIGHTENMENT (BEGINNING IN THE 1700S)

The Enlightenment is known for its outpouring of **intellectual** and **philosophical thought**. It began in the 1600s when two English political thinkers who had lived through the horrors of the English Civil War came to strikingly different conclusions about human nature and the proper form of government. **Thomas Hobbes** believed that people are naturally selfish and wicked and therefore a strong government, particularly an **absolute monarchy**, was needed to keep order. **John Locke**, on the other hand, thought people were basically good and capable of reason, and therefore favored some form of **self-government**. According to Locke, people are born free and possess certain **natural rights** (life, liberty, and property), and a government's purpose is to protect those rights. If government fails at this job, Locke reasoned, the people had the right to overthrow it. This notion would later inspire revolutions in Europe and the Americas. Intellectual revolutionaries in their own right, Enlightenment thinkers were reformists who put forth ideas such as the following:

John Locke (England)

Thought all men are born with natural rights and should be free

Voltaire (France)

Said freedom of speech should be permitted

Montesquieu (France)

Urged tolerance and a government segmented into parts that shared power

OUTCOMES OF THE PROTESTANT REFORMATIONS

- A redrawing of the religious map of Europe, with mostly Protestants in the north and Catholics in the south
- A decline in the power of the Roman Catholic Church
- Further power struggles between the citizenry and monarchs; in England, when radical Protestants took over the Parliament, civil war erupted and the king was arrested and later publicly beheaded
- A series of wars that would pit Catholics and Protestants against each other for the next 200 years

This new emphasis on free thought led to the **questioning of traditional authority**. Both the Church and the monarchy were being challenged, and the political radicalism of the Enlightenment would cause great anxiety in the courts of Europe. Though it started in England, the Enlightenment was centered in Paris, where it reached its peak in the mid-1700s. There, people called **philosophes** gathered to discuss politics and ideas. The philosophes believed that reason (which along with nature, **happiness, progress, and liberty** constituted the philosophes' core beliefs) could be applied to all aspects of life.

As a result of the Roman Catholic mission to China, Jesuits brought back **Chinese knowledge to Europe**. The Confucian civil service exams influenced European rulers, and the rational morality of Confucianism appealed to Enlightenment philosophers.

SCIENTIFIC REVOLUTION

The emergence of modern science, along with Enlightenment ideals, has had a tremendous impact on the development of the modern world and the modern mentality. Prior to 1500, scholars mostly relied on Greek or Roman texts or the Bible to answer questions about the natural world. Participants in the Scientific Revolution challenged these ideas by carefully and methodically observing nature.

The Scientific Revolution began as scientists used observation to challenge accepted notions about the structure and composition of the universe. The Polish cleric and astronomer Nicolaus Copernicus paved the way in the 1543 when he put forth his **heliocentric** theory of the universe, which contradicted Church teachings of an earth-centered universe. Building on this revolutionary finding, as well as the work of others, the Italian scientist **Galileo Galilei** constructed his own telescope in 1609 and used it to develop new theories about the universe. His findings angered both Catholic and Protestant leaders because they challenged the teachings and authority of the Christian churches. Indeed, Galileo was put on trial before the **Inquisition** and forced to read a signed confession in which he stated these new ideas were false.

The revolution in scientific thinking that Galileo and other astronomers began eventually developed into a new approach to science called the **scientific method**. This is a logical method for developing and testing ideas using observation and experimentation. Use of the scientific method led to significant advances in the fields of biology, medicine, and chemistry as well as to the later development of the social sciences in the late 19th century.

THE ENVIRONMENT

During this time frame, human societies continued their mastery over their environment. Perhaps the most significant event was the discovery of the Americas and the resultant Columbian Exchange of biologicals between the New and Old Worlds. New foods like the potato, which was introduced to Europe from the Americas, had a huge impact on food production and population increases. In the Americas, entire landscapes were stripped to build plantations that grew mostly cash crops like sugarcane and coffee. As previously noted, this led to a degradation of the topsoil and loss of vegetative cover that encouraged flooding and mudslides. The raising of cattle and pigs led to dramatic changes in the landscape as forests were cut for the former, while the latter, with vast feral populations, may have been responsible for the transmission of diseases in the North American regions initially explored by the Spanish. The introduction of horses to the Americas had a significant impact on some Native Americans as they left their farming to become nomads, following and hunting the plains' roaming buffalo herds. Of course the most dramatic exchange

was that of diseases. Smallpox, measles, and other diseases to which the natives of the Americas had no immunity devastated their populations; some estimates are as high as 90 percent mortality rates. The loss of natives played a direct role in their inability to fend off European advancement and also led to the importation of enslaved Africans to work on plantations.

Climatically, the Little Ice Age, a several-hundred-year period of cooling and warming trends in the earth's temperature, had dramatic impacts on human society. Although no one is in agreement on the exact timings, the period generally lasted from about the late 15th century to the mid-18th century. As temperatures fell, growing seasons shortened and some types of crops, particularly grains in the north, failed completely. The freezing of rivers and harbors often had dramatic results on warfare, allowing armies to cross what were normally barriers to their movement. At the same time, the harsh conditions played a toll on living conditions in the field, often depleting an army's strength before it could be effective.

A glimmer of awareness of the need to manage natural resources can be seen in the Tokugawa Shogunate's laws to restrict timbering operations and plant new trees when old ones were cut and in Louis XIV's forestry program to manage France's timber resources. Although these programs were mainly economically motivated, the idea that a nation's resources should be managed by the state will play an important role in the development of future environmental management programs.