

UNIT III: 1450 - 1750 C.E.

In the previous era (600-1450 C.E.), sometimes called the post-classical period, we explored the rise of new civilizations in both hemispheres, the spread of major religions that created cultural areas for analysis, and an expansion of long-distance trade to include European and African kingdoms. However, no sustained contact occurred between the eastern and western hemisphere. During the time period between 1450 and 1750 C.E., the two hemispheres were linked and for the first time in world history, long-distance trade became truly worldwide.

QUESTIONS OF PERIODIZATION

This era includes only 300 years, but some profound and long-lasting changes occurred. Characteristics of the time between 1450 and 1750 include:

- 1) **The globe was encompassed** - For the first time, the western hemisphere came into continued contact with the eastern hemisphere. Technological innovations, strengthened political organization, and economic prosperity all contributed to this change that completely altered world trade patterns.
- 2) **Sea-based trade rose in proportion to land-based trade** - Technological advancements and willingness of political leaders to invest in it meant that sea-based trade became much more important. As a result, old land-based empires lost relative power to the new sea-based powers.
- 3) **European kingdoms emerged that gained world power** - The relative power and prosperity of Europe increased dramatically during this time in comparison to empires in the longer-established civilization areas. However, Europe did not entirely eclipse powerful empires in Southwest Asia, Africa, and East Asia.
- 4) **The relative power of nomadic groups declined** - Nomads continued to play an important role in trade and cultural diffusion, and they continued to threaten the borders of the large land-based empires. However, their power dwindled as travel and trade by water became more important.
- 5) **Labor systems were transformed** - The acquisition of colonies in North and South America led to major changes in labor systems. After many Amerindians died from disease transmitted by contact with Europeans, a vigorous slave trade from Africa began and continued throughout most of the era. Slave labor became very important all over the Americas. Other labor systems, such as the mita and encomienda in South America, were adapted from previous native traditions by the Spanish and Portuguese.
- 6) **"Gunpowder Empires" emerged in the Middle East and Asia** - Empires in older civilization areas gained new strength from new technologies in weaponry. Basing their new power on "gunpowder," they still suffered from the old issues that had plagued land-based empires for centuries: defense of borders, communication within the empire, and maintenance of an army adequate to defend the large territory. By the end of the era, many were less powerful than the new sea-based kingdoms of Europe.

MAJOR DEVELOPMENTS - 1450-1750 C.E.

We will investigate the broad, important characteristics of this time period outlined above by studying these major topics:

- **Changes in Trade, Technology, and Global Interactions** - The Atlantic Ocean trade eventually led to the crossing of the Pacific Ocean. New maritime technologies made these interactions possible, and global trade patterns changed dramatically.
- **Major Maritime and Gunpowder Empires** - Major maritime powers include Portugal, Spain, France,

and England, and major Gunpowder Empires were the Ottoman, Ming and Qing China, the Mughal, Russia, Tokugawa, Songhay (Songhai), and Benin.

- **Slave systems and slave trade** - This was the big era for slave systems and slave trade, with the new European colonies in the Americas relying on slavery very heavily. The slave trade was an important link in the Atlantic Ocean trade.
- **Demographic and environmental changes** - The new trade patterns greatly altered habitats for plants and animals and resulted in changes in human diet and activities as well. Major migrations across the Atlantic Ocean also altered demographic patterns profoundly.
- **Cultural and intellectual development** - This era also was shaped by the European Renaissance, Protestant Reformation, and Enlightenment. Neo-Confucianism grew in influence in China, and new art forms developed in the Mughal Empire in India.

CHANGES IN TRADE, TECHNOLOGY, AND GLOBAL INTERACTIONS

The 14th century brought demographic collapse to much of the eastern hemisphere with the spread of the bubonic plague. During the 15th century, as areas began to recover and rebuild their societies, they also sought to revive the network of long-distance trade that had been so devastated by the disease. The two areas that worked most actively to rebuild trade were China and Europe.

MING CHINA AND THE OUTSIDE WORLD

When the Ming drove the Mongols out, they were intent on restoring the glory of Han China, and they turned first to restoring China's internal trade and political administration. Even though the Ming emperors were wary of foreigners, they allowed foreign merchants to trade in Quanzhou and Guangzhou, ports that were closely supervised by the government. China had too long prospered from trade to give it up completely, and foreigners eagerly sought silk, porcelain and manufactured goods, in exchange for spices, cotton fabrics, gems, and pearls. In order to restore Chinese hegemony in Asia, Emperor Yongle sponsored seven naval expeditions commanded by Admiral Zheng He, whose voyages took place between 1405 and 1433. He was a Muslim from southwestern China who rose through the administrative ranks to become a trusted advisor of the emperor. For each journey he launched a fleet of vessels like the world had never seen before. The Chinese junks were huge with nine masts, by far the largest ships ever launched up until that point in history. They were far larger than the ships that Christopher Columbus was to sail only a few decades later. Altogether the ships traveled the Chinese seas to Southeast Asia, and on across the Indian Ocean to India, the Middle East, and Africa. Throughout his travels he dispensed lavish gifts, and he also dealt harshly with pirates and political leaders that tried to defy Chinese might. He returned to China with presents from his hosts and stories that awed the Chinese, especially Emperor Yongle. Zheng He's most famous gifts were destined for the imperial zoo - zebras and giraffes from Africa that drew crowds of amazed people who had never seen such animals before.

The main purposes of the voyage were twofold: to convince other civilizations that China had indeed regained their power and to reinstitute tribute from people that no longer gave it. The latter did not bring any income to China, mainly because the cost of the voyages and gifts was more than any revenue they stimulated.

Zheng He's voyages were halted in the 1430s when Emperor Yongle died. Confucian bureaucrats, who had little desire to increase China's interactions with other civilizations, gained control of the court and the new emperor, and refused to continue to finance the voyages. According to the new court, the money was needed to better protect the empire from its age-old problem: nomadic invasions from the west. The voyages and the Ming reaction to them provide good evidence for the pattern that was setting in: the impulse to trade and contact others v. the tendency to turn inward for fear of the negative effects on the Han Chinese.

EUROPEAN EXPLORATIONS

Across the globe, as the mid-15th century approached, kingdoms in another area were ready to venture to the open seas with motivations very different from those of the Chinese:

- **Profit from commercial operations** - Geographically, Europe was on the outskirts of the established trade routes. The impractical nature of overland travel for Europeans was confirmed by the fact that the first European trade cities - Venice and Genoa - made their fortunes by sea travel. And so the Europeans set out to make their fortunes via water transportation.
- **Spread of Christianity** - True to its roots, Christianity had remained over the centuries a missionary

religion. The Catholic Church took this responsibility seriously, and as a result, Europe was overwhelmingly Catholic by 1450. Once they began traveling to other lands, they aggressively promoted the spread of the Christian faith, so that their missionary motives were often as strong as their desire for profits.

PORTUGUESE EXPLORATION

Portugal was the first European kingdom to explore other lands seriously. One reason was its geographic location on the Atlantic Ocean, with a long seacoast with good harbors. Another took the form of an often underrated historical figure, Prince Henry the Navigator. He wanted to increase Portugal's maritime influence and profits, and he also wanted to spread Christianity. From Portugal his ships ventured to the Strait of Gibraltar, where they seized the Muslim city of Ceuta, allowing Christian ships to travel safely between the Atlantic and the Mediterranean. Next Portuguese marines explored nearby islands, and eventually made their way down the coast of Western Africa.

Henry's influence was so great mainly because he started a school for navigators that trained some of the most famous and skilled mariners of the day. Two of his students solved an ancient mystery: Where is the southern tip of Africa? In 1488 Bartolomeu Dias had sailed around the Cape of Good Hope and returned to Portugal with the news. A few years later Vasco da Gama rounded the Cape, found the southern Swahili cities, and hired a Muslim guide that helped him to sail all the way to India. These voyages - though the ships traveled no further than those of Zheng He - were the beginnings of sustained European sea travel that eventually led to Europe's rise to power.

For most of the 16th century, the Portuguese dominated the Indian Ocean trade. How did they capture this old sea route that had been shared by Arabs, Persians, Indians, and Southeast Asians? The most important single answer is technological: they had superior weapons. Their ships were armed with cannons that they used so skillfully that their relatively small ships could overpower almost any other type of vessel. The Portuguese were intent on converting all that they met to Christianity, although they often did more harm than good, infuriating the natives by burning down mosques and/or forcing conversions.

EARLY SPANISH EXPEDITIONS

Since the Portuguese dominated the Indian Ocean trade, other European kingdoms looked for other routes to the east, where they sought to capture some of the trade that so filled Portuguese pockets. Spain was one of the first to seek an alternate route when Queen Isabella and King Ferdinand sponsored the voyages of Italian sailor Christopher Columbus. Using maps devised by the Greek geographer Ptolemy, Columbus believed that the voyage west was possibly shorter than the Portuguese route from Europe around the tip of Africa and east. Ptolemy's maps were wrong, since they assumed that the circumference of the earth was only 16,000 miles (as opposed to the actual 25,000), and Columbus of course landed in the Americas, "discovering" the new hemisphere for Europeans. He returned to Spain without the trade goods that he expected to find from the east, but he convinced the Spanish monarchs that he had landed in the islands off the Asian coast. On his subsequent voyages he explored more areas, but he never reached the mainland, nor did he ever publicly acknowledge that he had failed in his mission — finding a new route to Asia.

THE CONQUEST OF THE AMERICAS

What Diaz, da Gama, Columbus, and other early European explorers did do was unwittingly start an entirely new era of world trade and cross-cultural exchange. Europeans conquered and claimed the territories and greatly increased their prosperity and power, and Christianity spread to a whole new hemisphere. Portugal and Spain even presumed to divide the world in two by seeking the Pope's blessing on the Treaty of Tordesillas, which drew a line through north and south through the Atlantic, giving Portugal the lands east and Spain the lands west. Portugal actually lost in the long run because the lands that they "received" were already claimed by empires that did not recognize the Portuguese claims.

During the 16th century the Portuguese slowly faded as a power while Spain claimed and kept more and more land in the western hemisphere. In 1519 a Spanish expedition led by Hernan Cortes marched to the Aztec capital of Tenochtitlan and defeated the great empire with only a few hundred soldiers. How? Two weapons helped a great deal - guns and disease. Gunpowder technology revolutionized the world during the 1450-1750 era, and the Amerindian Empires were among its first victims. Disease also made a big difference. Shortly after the Spanish arrived in Tenochtitlan, a smallpox epidemic broke out in the city that killed or incapacitated the Aztec army. A few years later Francisco Pizarro attacked and defeated the Inca. With the fall of those two empires the Spanish gained virtual control of Mesoamerica and South America, with the exception of Brazil, which fell on the Portuguese side of the line set by the Treaty of Tordesillas.

THE WORLD ENCOMPASSED

One event symbolizes, if not encapsulates, the accomplishments of the Europeans: the voyage of Ferdinand Magellan between 1519 and 1522. Magellan found the southern tip of South America and sailed west across the Pacific. He eventually made it to the islands off the coast of Asia, sailed through the Indian Ocean, around the tip of Africa, and home to Spain. Ironically, Magellan didn't make the entire voyage because he was killed in the Philippines, and only one of his ships actually made it all the way home. What they proved did not provide any particular financial gain. Instead, Magellan discovered just how wide the Pacific Ocean is and how impractical Columbus' earlier hunch really was. However, his voyage was the first to go around the world, and it symbolized the first union of the hemispheres and the resulting worldwide contacts that have characterized world history since 1522.

THE FRENCH AND ENGLISH IN NORTH AMERICA

The French and English did not arrive in the Americas until the 17th century, but when they did, they claimed much of North America in areas that the Spanish did not go. The French explored and settled the St. Lawrence River area through Canada, as well as the Mississippi River valley south all the way to its mouth in the Gulf of Mexico. The English settled along the eastern seacoast in North America. Although the three great powers were destined to eventually clash over land claims, most conflicts did not occur until the 18th century. Virtually all explorers sought sea routes to Asia that they hoped would be shorter than the circuit that Magellan took. The English differed from most others in that they allowed great trading companies to control their colonization. These companies encouraged people to settle in the New World, so that the English colonies became quite heavily populated by the end of the 17th century.

THE GREAT CIRCUIT AND THE COLUMBIAN EXCHANGE

The trade routes that appeared during this era in the Atlantic Ocean were collectively known as the Great Circuit. The routes connected four continents: North America, South America, Europe, and Africa, and they linked directly to the old water trade routes established in previous eras. The Atlantic routes were generally circular and complex, with most ships making several stops along the way on at least two of the continents, but sometimes more. These huge circuits represent the most significant change in long-distance trade since its earliest days.

The cross-cultural exchange that developed along the Great Circuit is known as the Columbian Exchange, giving credit to the man that unwittingly started the whole thing. The Columbian Exchange included a huge number of products that changed diets and work habits around the world. Generally, the goods traded according to this pattern:

- Europe to the Americas - horses, cows, pigs, wheat, barley, sugar cane, melons, grapes
- Africa (includes Asian products) to the Americas - bananas, coconut palms, coffee, sugar cane, goats, chickens
- The Americas to Europe and Africa - corn, potatoes, tomatoes, sweet potatoes, pumpkins, squash, beans, pineapples, peppers, tobacco, chocolate

As a result of the new trade routes, the variety in many people's diet increased and resulted in better nutrition and health. Disease also was transferred with the most devastating effects on the Amerindian populations. They had no immunities to diseases that people of the eastern hemisphere had built up resistance to, such as measles, diphtheria, typhus, influenza, malaria, and yellow fever. Estimates vary, but all historians agree that the devastation cannot be overstated. Generally only one major disease that originated in the Americas traveled the other direction – syphilis.

TECHNOLOGY AND THE MARITIME REVOLUTION

The new trade patterns could never have been established without some very important technological inventions, most of which they adapted from other cultures:

- Guns and gunpowder - Although the Chinese invented explosives, Europeans adapted them for guns. European metalwork advanced to the point that smiths were able to forge the first guns and cannons. Their accuracy was limited, but their power as weapons was awesome by the standards of the time. Guns and gunpowder allowed European explorers to intimidate and defeat virtually any foe.
- New ship technology - The European ships were not nearly as large as the Chinese junks, but their deep drafts and round hulls made them well suited for travel on the Atlantic Ocean.

- The compass - This technology was copied from the Arabs, who had earlier learned it from the Chinese. The compass pointed north, an important indication for ships traveling east to west.
- The astrolabe - An invention of the Arabs, the astrolabe allowed a sea captain to tell how far north or south his ship was from the equator.
- Cartography - European explorers recorded the new territories on maps, and the art of accurate mapmaking progressed significantly. One new map style created was the Mercator Projection that distorted land size seriously in extreme northern and southern areas. However, the projection was relatively accurate for the middle ranges, and those were the routes that navigators were following.

MAJOR EMPIRES: 1450-1750

Political developments during this era saw the greatest changes in European governments, and by extension the government structures that they set up in the New World. New Gunpowder Empires emerged in other parts of the world, and in most cases, their rulers ruled absolutely, as did most of the rulers in Europe.

THE POLITICAL AND SOCIAL TRANSFORMATION OF EUROPE

In 1450, the kingdoms in Europe were governed by rulers with only a tentative grasp of political power. They were fragmented and the political structures were still held together by feudal ties. Instead of uniting Europeans, their growing control of the new Atlantic system deepened the divisions among them. During the 16th century, the growing wealth of Spain tilted power toward the Habsburg family that ruled many lands in Europe, including Spain. By the end of the century, England and France were on the rise, and the rivalries among the countries were intense.

CENTRALIZATION OF GOVERNMENT

During this era between 1450 and 1750 some of the old feudal kings amassed enough power to allow their kingdoms to sponsor the expensive sea voyages necessary for colonization in the New World. Three powerful countries that emerged were Spain, England, and France. In all three cases these monarchs curbed the power of the nobility and built strong centralized regimes.

The new monarchs came up with new means of financing their ambitions, such as imposing new taxes, fines, and fees, and amassing large armies too powerful for individual nobles to match. The English king Henry VIII received a big windfall by confiscating the wealth of Catholic monasteries when he officially separated the English church from Rome. English kings also contained the power of the nobility by subjecting them to royal justice through the developing judicial system.

Spanish Imperial Attempts

Spain's newfound wealth in the 16th and 17th century was based largely on trade, and the vital link that their American colonies played in world circuits. A good example is provided by the famous Manila Galleons that for 250 years traveled back and forth across the Pacific Ocean between Manila in the Philippines and Acapulco on the west coast of Mexico. The galleons were vast and well armed, and they took Asian Luxury goods to Mexico, and returned with their hulls full of gold and silver. Most of the precious metals made their way into China, an inducement that convinced the Ming emperors to keep trade with outsiders alive. Meanwhile, some of the Asian silks and porcelain stayed in Mexico for use by the Spanish viceroys and other elites, but most of the goods went overland by Mexico to ships that carried them to Spain and other European markets. The Spanish rulers almost turned this wealth into domination of Europe, but not quite.

The Habsburgs were a family that not only ruled Spain but large parts of the Holy Roman Empire, that covered most of central Europe, as well as territory that is now the Netherlands and Belgium. Charles V, grandson of Ferdinand and Isabella for a time ruled it all. However, he was unable to coordinate the fragmented territories, with their various kings, princes, dukes, and bishops that still thought in feudalistic terms. Moreover, Charles had to defend his eastern territories from the growing Ottoman Empire. Under the Ottoman's great ruler, Suleiman the Magnificent, the Muslim army advanced all the way to the eastern European city of Vienna. There, in the fateful Siege of Vienna in 1529 Charles defeated the Ottomans and so protected Europe from further invasions. However, the Ottoman threat continued for years, they exacted a heavy toll on Charles' empires. So overstretched did he feel that he abdicated his throne and divided his lands between his brother Ferdinand, who received the Holy Roman Empire, and his son, Philip II, who became king of Spain.

Philip proved to be an able successor to his father, but he had many of the same problems. This time the Ottoman threat came from the Mediterranean, and even though Philip defeated them at the Battle of Lepanto, the Ottomans still dominated many of the lands that bordered the sea. Perhaps his most famous defeat was at the hands of Elizabeth I of England, where his supposedly invincible Spanish Armada was demolished by the small

but quick English "seadogs." However, despite these setbacks, the Spanish still held great wealth and power at the end of the 16th century, and were envied by the other European countries, especially England, France, and the Netherlands.

Absolutism v. Constitutionalism

Most of the newly powerful European states, including Spain and France, developed into absolute monarchies, or governments in which the king held all power. Absolutism was reinforced by the belief in divine right, or the god-given authority to rule. According to divine right theory, kings were not gods but served as "God's lieutenants upon earth." In these countries, no one else had the right to share policymaking powers with the king, not even the nobility.

In France absolutism was shaped by Cardinal Richelieu, the chief minister to King Louis XIII in the early 17th century. He undermined the power of the nobility by burning their castles and crushing attempts to conspire against the king. He also built a large bureaucracy capable of collecting taxes efficiently and serving as the "eyes and ears" of the king. The most famous of the absolute French rulers was Louis XIV, who ruled for 72 years, finally dying in 1715. He designated himself the "Sun King," the magnetic center of all around him, and his often repeated, "L'etat c'est moi" (I am the state) expresses his unshakable belief in his absolute authority. He contained the nobles by inviting them to his huge, ornate palace at Versailles, where they were welcome to stay as long as they liked. Many stayed for long periods of time, enjoying the sumptuous life of unending banquets, hunting, dancing, and gossip circuits. Meanwhile, the nobles were away from their castles, unable to start any rebellions, and completely under the thumb of their clever king.

Other countries followed the French model, although generally less successfully. Rulers in Austria, Prussia, and Russia built huge palaces and sought to increase central control. Both Prussia and Russia had developed into formidable powers by 1750.

Elsewhere, in England and the Netherlands, a different government model was developing. Neither had a written constitution, but they both allowed limitations to be placed on the ruler's power. In England the nobility demanded and received the right to counsel with the king before he imposed new taxes, starting with William the Conqueror in the 11th century. The limitations were famously encapsulated in the Magna Carta of 1215, a document that listed the rights of nobility. From this right to counsel developed a "parliament" (literally a place to talk things over) that came to blows with King Charles I in the 1640s in the English Civil War. Parliament won this war, and even though the institution of the monarchy was eventually retained, it marks the turning point of power toward a limited, or "constitutional" government. In both England and the Netherlands, wealthy merchants were allowed to participate in government, partly because their continuing prosperity was vital to the states.

Whether they developed into absolute or constitutional monarchies, centralization of government in Europe was a vital step in building state power from the medieval feudalism. Without it, colonization, and eventually the building of vast, worldwide empires, would have been impossible.

CHANGES IN SOCIAL AND GENDER STRUCTURES

With the growth of trade, European towns grew, and by 1700 Europe had large cities. Paris and London both had over 500,000 people, Amsterdam had about 200,000, and twenty other cities had populations over 60,000. Life in these cities was vastly different than before, and their existence affected people who lived elsewhere, in villages and towns. Some of the changes are:

- The rise of the bourgeoisie - Whereas the social structure in medieval Europe was split into two classes (nobility and serfs), increasing trade and business created a new class that the French called the bourgeoisie, meaning "town dwellers." Over time the bourgeoisie came to have more wealth than the nobles, since they often formed mutually beneficial alliances with monarchs anxious to increase state revenues.
- Growth in the gap between the rich and the poor - By the late 16th century, the rising wealth of the bourgeoisie created a growing gap between the rich and the poor. The poor were not only the rural peasants, but they also lived in cities as craftsmen, peddlers, and beggars.
- Changes in marriage arrangements - Most marriages in the rest of the world were still arranged by families, but the custom of young men and women choosing their own spouses started in early modern Europe. This change was partly due to separations between generations that occurred when younger people moved to towns, but also to the growing trend toward later marriages. Craftworkers and the poor had to delay marriages while they served as apprentices or built their dowries, and bourgeois men delayed

marriage in order to finish their educations. The need for education was growing because of the demands for business success. For example, participation in long-distance trade often meant learning new languages and/or acquiring legal expertise. Since people were older when they married, they tended to be more independent from their parents.

COLONIAL MODELS

The governments that European nations set up in their colonies in the New World reflected their own governments back home. Both Spain and Portugal, who followed the absolutist model, set up expensive, controlling bureaucracies that they tried to rule directly. Both also had as major goals the conversion of natives to the Catholic Church. In contrast, the English principle of the limited monarchy allowed some independence for colonial governments. The English also had less interest in converting natives to Christianity than they did in building prosperous, money-generating colonies. The French were unable to establish few colonial governments with wide control, partly because they found wealth in trading furs. Animal trapping required that men move up and down rivers, and they were unable to set up cities, except in New Orleans in the south, and Quebec in the north.

COLONIAL POLITICAL AND SOCIAL STRUCTURES

	Political Structures	Social Structures
Spain	<p>Both the Spanish and the Portuguese kings appointed viceroys, or personal representatives, to rule in the king's name. Spain set up a Council of the Indies, whose members remained in Spain, as a supervisory office to pass laws. Advisory councils were then set up within each viceroyalty, which divided according to region. Difficulty in communication caused viceroys and councils to have a great deal of independence</p> <p>Large bureaucracies developed in urban areas, such as Mexico City</p>	<p>Almost complete subjugation of Amerindians, placed at bottom of social structure</p> <p>A hierarchical class system emerged. Peninsulares (Europeans born in Spain) had the highest status, and creoles (Europeans born in the Americas) were second. In the middle were mestizos (blend of European and Amerindian) and mulattoes (blend of European and African), and at the bottom were full blood natives and Africans.</p> <p>Slavery common, also used encomienda and mita labor systems.</p>
England	<p>No elaborate bureaucracy like Spanish/Portuguese. Individual colonies allowed to set up their own structures, with most of them setting up representative bodies like the British Parliament</p> <p>British government formed partnerships with trading companies, and was most interested in profits. Practice of "salutary neglect" until mid-18th century allowed colonies to run many of their own affairs.</p>	<p>Less successful at subjugating Amerindians, who were generally more friendly to the French</p> <p>Colonies were more diverse than the Spanish, with South Carolina's social structure the most hierarchical and Massachusetts the least</p> <p>Mixing of races (European, Amerindian, African) blurred social distinctions, but still had divisions.</p> <p>Slavery common, especially in the agricultural southern colonies</p>

THE GUNPOWDER EMPIRES

In contrast to the sea-based empires developing in Europe, land-based empires remained the dominant political form in other parts of the eastern hemisphere. The era between 1450 and 1750 saw the appearance of several land-based empires who built their power on the use of gunpowder: the Ottomans and the Safavids in Southwest

Asia, the Mughals in India, the Ming and Qing in China, and the new Russian Empire. All had huge land armies armed with guns. These empires developed relatively independently from western influence, and to some extent they counterbalanced the growth of European power and colonization.

An important consequence of the appearance of the Gunpowder Empires was their conquest of most nomadic groups. Since the nomads had less access to guns, the empires were finally able to conquer and subjugate them. In many areas direct relations among states or merchant groups replaced nomadic intermediaries for international contact. For example, European kings invited diplomats from other countries to join their courts, and China also received foreign representatives.

THE MUSLIM EMPIRES

In the previous era, the political power of Muslim lands had been crushed by Mongol invasions in the 13th century and those of Timur, a central Asian of Mongol descent, in the 14th century. Three new empires – the Ottoman, the Safavid, and the Mughal - rose between 1450 and 1750, and collectively they supported a new flowering of Islamic civilization. However, competition between them also led to important political divisions and military clashes. All three originated in the Turkic nomadic cultures of the central Asian steppe, and they all had absolute monarchs who modeled their courts on those of earlier Islamic dynasties.

COMPARATIVE MUSLIM EMPIRES

	Geographic Characteristics	Political and Military	Economic and Social	Religious and Cultural
Ottoman Empire	It developed from modern-day Turkey. At its height, it encompassed lands around the southern and eastern Mediterranean, Constantinople, the Red Sea, the Tigris and Euphrates Rivers, and eastern Europe	Great army of mounted and foot soldiers; made use of Janissaries, Balkan Christians captured as boys who became skilled soldiers and bureaucrats Ruled by a sultan, an absolute ruler aided by strong bureaucracy, who often were army officers; top official was the "grand vizier"; Suleiman the Magnificent most famous ruler Great navy, as well	More sustained trade than the other empires, partly due to control of the Dardanelles, Black Sea, Mediterranean Sea More equality for women, with some trading in real estate	Most were Sunni Muslim, although a diversity of religions, including Christians Culturally diverse, largely due to trade connections and diversity of lands governed Important merchant class Constantinople highly sophisticated, cosmopolitan city
Safavid Empire	Developed east of the Ottomans, encompassing land space that is now modern Iran	Belief in the "Hidden Imam," a descendent of Ali that would return to rule; ruler is stand-in until then Strong army equipped with firearms; no navy	Marginal trade, inland capital Rigidly patriarchal, with few freedoms for women	Most were Shi'a Muslims, forced conversion by Ismail, 16th century ruler; deep chasms between Shi'a and Sunni felt here Less diversity of people
		Strong military that attacked from the west Muslim rulers with centralized power;	Limited trade, inland	Muslim rulers over Hindu population'

Mughal Empire	Mughal land included that of modern day Pakistan and Afghanistan, as well as the northern part of the Indian subcontinent	expensive war meant that high taxes were necessary. Muslim authority over rebellious Hindu population Most famous ruler was Akbar, who married a Hindu, tried to reconcile	capital Land grant system based on military service; conflicted with previous regional ruler claims	tensions from the beginning New faith – Sikhism, a blend of Islam and Hinduism; became militant after guru beheaded by Mughal ruler
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Although each of the Muslim Empires had their own special problems, they faced some similar ones that eventually led to their decline.

- **Inadequate transportation and communication systems** - Although they had the necessary military technology to control their empires, transporting it to where it was needed was another issue. The larger they grew, the more difficult it was for the infrastructure to be adequate for the task.
- **Unruly warrior elites and inadequate bureaucracies** - The military leaders knew their importance to the state, and they often operated quite independently of the government. Even in the Ottoman Empire, where the bureaucracy was the strongest, the sultan eventually lost control of the Janissaries, who rebelled against him when their constant demands went unfulfilled.
- **The rise of European rivals** - Ultimately, the Europeans benefited more from the gunpowder revolution than the Muslim Empires. European countries were smaller, both in population and land space, and so mobilization of their human and natural resources was easier. They were also in such strong competition with one another that the Europeans were spurred on to try new technologies and reforms.

THE MING AND EARLY QING DYNASTIES IN CHINA

The Ming Emperors continued to rule China until the mid-1600s, but the dynasty was in decline for many years before that. Although its cultural brilliance and economic achievements continued until about 1600, China had some of the same problems that the Muslim empires had: borders difficult to guard, armies expensive to maintain, and transportation and communication issues. Some particular factors that weakened Ming China included:

- **Climatic change** - A broad change of climate swept from Europe to China during the 1600s, with the weather turning much colder. This change seriously affected agriculture and health, and also contributed to serious famine across China. These conditions led frustrated peasants to frequent rebellion.
- **Nomadic invasions** - The 1500s saw the reemergence of the Mongols as a regional power, this time with the help and support of Tibet. In gratitude, the Mongols bestowed the Tibetan leader with the title of dalai lama, or "universal teacher" of Tibetan Buddhism. The Japanese also attacked Korea, a Chinese tributary state, requiring Ming armies to defend the area.
- **Pirates** - As sea-based trade became more and more important, the number of pirates also increased in the Chinese seas, just as they did in the Americas. Pirates were both Chinese and Japanese, and they lay in wait for ships going in and out of Chinese ports.
- **Decline of the Silk Road** - After so many centuries, the famed Silk Road trade finally fell into decline during this era. New technologies and European control meant that more and more trade was conducted by water, and land-based trade decreased.
- **Inept rulers** - The last emperors lived in luxury in the Forbidden City, and had little to do with governing the empire. For example, the last emperor was so disengaged that he did not know that he was under attack until the enemy literally was climbing over the palace walls.

The Early Qing Dynasty

The Ming Dynasty was finally overthrown in 1644 by the Manchus, a northern power that had previously helped Ming emperors fight the Mongols and Japanese. The Manchus turned on the Ming once they discovered how weak the empire was, and they called themselves the Qing ("pure") Empire because they saw themselves as restoring China to glory. However, the Manchu were seen by some as not being truly "Chinese" because they

were northern people from the outside, just as the Mongols had been almost four centuries before.

The Qing Dynasty was to rule China until 1911, and in the years before 1750, the empire was very strong. The emperors ruled under many of the same precepts that China had always had, such as the mandate of heaven, which they saw as justification for their takeover. The Manchu did keep their ethnic identity, forbidding intermarriage between Manchus and Chinese. They also outlawed the Chinese from learning the Manchurian language, and they required Chinese men to shave their heads and grow long queues at the back of their heads as a sign of submission.

Despite the problems that China faced as a land-based Gunpowder Empire, the early Qing Dynasty - until the late 18th century - ruled over a "golden age" of Chinese civilization. Two of its early emperors had long and prosperous reigns: Kangxi (1661-1722) and Qianlong (1736-1795). Kangxi was an enlightened, brilliant ruler whose many talents illustrate the era. He was a Confucian scholar, poet, and supporter of education, but he was also a conquering warrior who understood the importance of military might. China was so prosperous in these early Qing days that Qianlong cancelled taxes on several occasions because the government simply didn't need the money.

Chinese Contact with Europeans

East-west contacts between China and Europe intensified during the early Qing Dynasty. One type of contact - Christian missionaries from the west - had probably come to China as early as the 7th century, but the plague and the collapse of the Yuan Dynasty had all but stopped the interchange. Contact revived during the 16th century when the Jesuits first began arriving in China. The Jesuit priests were an order of the Catholic Church that specialized in international missionary work. One of the early Jesuits, Matteo Ricci, very much impressed the Chinese, who admired his education, brilliance, and respect for Chinese customs and accomplishments. The Jesuits dazzled their hosts with European science and technology. For example, they were able to use their math skills to correct Chinese calendars that up until then had miscalculated solar eclipses. They prepared maps of the world, and charmed the Chinese with gadgets (like chiming clocks), and the emperors saw to it that Jesuits had a special place in their courts. However, they had limited success in converting people to Christianity. After the Pope condemned what he called "ancestry worship," Kangxi ordered the end to Jesuit ministries.

The Jesuits did inspire trade demands as word about the riches and sophistication of Qing China got back to Europe. Chinese products - tea, porcelain, silk, wallpaper, and decorative items - became quite fashionable among the European elite, and Kangxi was commonly seen by Europeans as a great philosopher king. The Chinese reacted by opening the southern port of Canton to Europeans, but again, the Middle Kingdom was very wary of foreign contact, and so they closely supervised the trade.

TOKUGAWA JAPAN

A "gunpowder empire" emerged in Japan, unusual in the sense that Japan was not land-based. The Japanese daimyos, or regional lords, had operated fairly independently from the shoguns before the early 17th century, when these military, feudalistic leaders were unified under one powerful family, the Tokugawa. The emperor was still honored as the ceremonial leader, as reflected in the name given to the Tokugawa government - the bakufu, or the tent government that temporarily replaced the emperor. The tent government eventually settled in Edo (modern Tokyo), and ruled their independent subjects by instituting alternate attendance, the practice of daimyos spending every other year at the Tokugawa shogun's court. This requirement meant that daimyos had limited time to focus on building armies back home, and they also had to maintain expensive second homes in Edo.

The Tokugawa shoguns had less patience with Christian missionaries from the west than the Chinese did. Their aversion to Europeans was based partly on their observation of the Spanish conquest of the Philippines, a fate that they did not want to share. They also worried that Europeans might conspire with the daimyos to destroy Tokugawa control. In the 1630s the shogunate literally "closed Japan," by forbidding all Japanese from going abroad and expelling all Europeans from Japan. They carefully controlled trade with other Asians, and European traders could come no closer than nearby islands. These policies were strictly enforced as far as the shoguns were able to, although daimyos on far islands were difficult to control.

THE RUSSIAN EMPIRE

By the time of the golden age of the Qing Dynasty, the Russian Empire had expanded all the way from its origins in Eurasia east to the Pacific coast. There they came into border conflicts with the Chinese, but they also shared the problem of attack by Mongols and other nomadic people of Central Asia. However, Russian tsar Peter the Great, who ruled Russia during the late 17th and early 18th centuries, cast his eyes in the other direction, toward Europe, for guidance in strengthening his growing empire. Russia's early days had been

shaped by the Byzantine Empire, and when the Byzantine's power faded, so did that of the early Russian tsars. Before Peter's rule, Russians had had almost no contact with Europe, and their lack of access to warm water ports crippled their ability to participate in the Maritime Revolution. The feudalistic political and economic structure meant that tsars had trouble containing the boyars, or Russian nobility, who often plotted against them. Partly because of this threat, the tsars practiced absolutism, with the power of the tsar backed by divine right granted by the Russian Orthodox Church. Peter's Russia was a vast, cold empire with almost no infrastructure – no navy, a limited army, very few decent roads, and few warm water ports.

Peter hoped to strengthen his country by westernizing it. As a boy he frequently visited the "German suburb" of Moscow, the place where all foreigners were forced to live, apart from Russians. Peter was intrigued with their maritime talk and with the sea-faring instruments they showed him. As a young man he took the first of several trips to Europe, where he studied shipbuilding and other western technologies, as well as governing styles and social customs. He returned to Russia convinced that the empire could only become powerful by imitating western successes, and he instituted a number of reforms that revolutionized it:

- **Military reform** - He built the army by offering better pay and also drafted peasants for service as professional soldiers. He also created a navy by importing western engineers and craftsmen to build ships and shipyards, and other experts to teach naval tactics to recruits. Of course, his Gunpowder Empire developed better weapons and military skills.
- **Building the infrastructure** - The army was useless without roads and communications, so Peter organized peasants to work on roads and do other service for the government.
- **Expansion of territory** - The navy was useless without warm water ports, and Peter gained Russian territory along the Baltic Sea by defeating the powerful Swedish military. He tried to capture access to the Black Sea, but he was soundly defeated by the Ottomans who controlled the area.
- **Reorganization of the bureaucracy** - In order to pay for his improvements, the government had to have the ability to effectively tax its citizens. The bureaucracy had been controlled by the boyars, but Peter replaced them with merit based employees by creating the Table of Ranks, eventually doing away with titles of nobility.
- **Relocation of the capital** - Peter moved his court from Moscow to a new location on the Baltic Sea, his "Window on the West" that he called St. Petersburg. The city was built from scratch out of a swampy area, where it had a great harbor for the navy. Its architecture was European, of course.

When Peter died, he left a transformed Russia, an empire that a later ruler, Catherine the Great, would further strengthen. But he also left behind a new dynamic in Russian society – the conflicting tendencies toward westernization mixed with the traditions of the Slavs to turn inward and preserve their own traditions.

AFRICAN KINGDOMS

In 1450 Africa was a diverse continent with a blend of large civilizations, city-states, rural villages, and hunter and gatherer societies. Many people in the north, Sub-Saharan and eastern coastline areas were Muslim, but many native religions remained quite strong.

The largest and most organized empire of Africa from the middle of the 15th century until the late 16th century was Songhay (Songhai) in northwest Africa in areas that had been controlled by the earlier Kingdom of Mali. The empire was organized under Sunni Ali, a leader who brought the important trading cities of Timbuktu and Jenne under his control. He developed a centralized government with governors to oversee provinces, as well as an army and navy to protect trade. Songhay was prosperous, its cities boasted beautiful public buildings, and Islam was strongly supported by the elite. But the Songhay did not have guns, and that was their downfall. In 1591 a Moroccan army opened their muskets on the Songhay forces, and they were defeated.

The 16th century also saw the destruction of most of the Swahili city-states. Vasco da Gama had noticed them when he passed through on his way to India, and within a few years the Portuguese had aimed their cannons at all the cities, and either captured them or burned them to the ground.

The fate of the Kingdom of Kongo was an early sign of what contact with Europe was to bring to Africa. Kongo was on the Atlantic Ocean in central Africa, that developed into a centralized state during the 14th century. The Portuguese set up a trading relationship with them in the late 15th century and converted the Kongo kings to Christianity. From the beginning, the Portugues traded textiles, weapons, advisors, and craftsmen for gold, silver, ivory and especially slaves.

THE SLAVE TRADE AND SLAVE SYSTEMS

The Portuguese brought a few slaves home from Africa, but found that they were impractical for use in Europe with its small, family-based farms and town life. However, it soon was clear how slavery could be readily adopted in the Americas. Like the overwhelming majority of preindustrial societies, African kingdoms practiced slavery, and when Europeans offered to trade their goods for slaves, African traders accommodated them. As a general rule, African slave hunters would capture Africans, generally from other groups than their own, and transport them to trading posts along the coast for European ships to carry to the New World. However, despite the fact that slavery already existed in Africa, the Atlantic trade interacted with and transformed these earlier aspects of slavery.

THE AFRICAN SLAVE TRADE

Before the Atlantic slave trade began, slavery took many forms in Africa, ranging from peasants trying to work off debts to those that were treated as "chattel," or property. The Atlantic trade emphasized the latter, and profits from the trade allowed slaveholders both in Africa and the Americas to intensify the level of exploitation of labor. African slaves were traded to two areas of the world: the Western Hemisphere and Islamic lands in the Middle East and India.

TRADE TO MUSLIM LANDS

Fewer slaves crossed the Sahara than crossed the Atlantic, but the numbers were substantial. Whereas most slaves that went to the Americas were male, most of those destined for the Middle East and India were female. These women either became a part of a wealthy individual's harem, or collection of wives and concubines that filled his household. The wives were not slaves, and their children had higher status than those of the concubines. The African women were almost always granted the lower status as concubines. Other slaves in the Islamic lands were males who were often bought to fight in the large Gunpowder Empire armies.

TRADE TO THE AMERICAS

The major reason that slave labor was practical in the Americas was that so many of the Amerindians who probably would have done the work had died. The economic challenge was to get workers to the New World in as cost effective way as possible. The Spanish and Portuguese expeditions were government ventures, but the success of the Atlantic economy during the 17th and 18th centuries was based on private enterprise. The economic system of mercantilism was developed most effectively by the British and the Dutch, with private companies under charter from the governments carrying out the trade. Mercantilism's main goal was to benefit the mother country by trading goods to accumulate precious metals, and thus enriching the country. The African slave trade was an important piece of mercantile trade. The Great Circuit trade went something like this:

- 1) The first leg from Europe carried hardware, guns, and Indian cotton to Africa
- 2) The second leg was the notorious Middle Passage that carried African slaves to the New World. Slaves were packed as tightly as possible in the ships, often under very inhumane conditions.
- 3) The last leg carried plantation goods from the colonies back to Europe

The theory was that on every leg the ships carried goods from a place where they were abundant to a place where they were scarce. The profits could be enormous, but shipwrecks, slave deaths, and piracy could turn profit into loss. A subset of the Great Circuit trade was the Triangular Trade that carried run from New England to West Africa, slaves to the West Indies, and molasses and run back to New England.

LABOR SYSTEMS IN THE AMERICAS

The Spanish were most interested in finding gold and silver in the Americas, and so early on they began mining for it. In areas where no precious metals existed, they set up plantations to raise crops from bananas to sugar cane. They first tried these labor systems:

- Mita - The Inca had made extensive use of the mita system, a sort of labor tax to support elites and the elderly. Generally, an adult male had to spend 1/7 of his time working for the Inca, a few months at a time. When his obligation to the state was complete, he would return home until his service time came up again. The Spanish adopted this system, particularly for their silver mines in Bolivia and surrounding areas. The problem was that so many natives died, that the Spanish kept having to increase the time spent in the mines that it became impractical. Finally, the work in the mines was so grueling that no Indians were left to do the work.
- Encomienda - This system was used primarily for agricultural work. Natives in an area were placed under the authority of encomenderos, or Spanish bosses, who could extract labor and tribute according to the needs of the area. Again, this system only lasted during the 16th century because so many natives died.

In North America the English colonies had varying bases for their economies. In the north, farms were small and family run, and city-based trade was important. In the south the soil and climate were better suited for large farms, and so a plantation system developed. A labor system used both in North America and the Caribbean was indentured servitude, in which an employer would pay the passage of a person to the New World in return for several years of labor. After the debt was paid in years worked, the servant would be free. This system was limited in its usefulness, especially in the Caribbean where indentured servant eventually refused to go because of the harsh working conditions on the sugar plantations.

EARLY SLAVE SYSTEMS IN SOUTH AMERICA AND THE CARIBBEAN

Before 1650 most slaves were destined either for the sugar plantations in Brazil and mainland Spanish colonies, but during the second half of the 17th century, more and more went to the Caribbean. Sugar cane was not native to the areas, but once imported, it grew well and resulted in great profit. The strong demand for sugar in Europe was complemented by the trade with China for tea. Perhaps most stereotypically, the English teatime depended on a regular supply of these products. Sugar plantations required large investments of capital because the cane had to be processed within a few hours of when it was cut in order to extract the sugary syrup. So each plantation not only had vast fields of sugar cane, but also had a mill and processing plant. Many slaves were needed for the work, which was hot and grueling.

The demand was greater for male slaves than for females because of the nature of the work, so the sex ratio was such that family life was impossible for most. Disease among slaves was particularly problematic in the Caribbean and Brazil, with many dying from dysentery caused by contaminated water and malaria. As a result, slave populations in these areas did not experience a natural growth, and so had to be replaced by more through the slave trade.

EARLY SLAVE SYSTEMS IN NORTH AMERICA

Sugar plantations were among the first to appear in North America as well, mainly in the warm, humid lowlands of present-day Louisiana. However, in the mid-1600s tobacco smoking became fashionable in England, and so tobacco plantations rose in the tidelands of Virginia. North American climates were generally healthier than those in the Caribbean, so slaves in North America did experience a natural increase, requiring fewer new slaves for trade. However, as plantations spread across the South, and eventually began raising other crops, such as cotton, the slave trade remained vigorous.

WHICH CAME FIRST: RACISM OR SLAVERY?

This question is one that historians like to ask, but they seldom agree on the answer. Still, it is an important question to consider in thinking about how significant changes occur in world history. Slavery is an institution as old as civilization itself. We see examples of slavery in ancient river valley and classical societies, and most subsequent civilizations at least make some use of slaves. However, an intriguing fact is that slavery increased dramatically between 1450 and 1750 C.E. Much of the increase occurred in the New World, but we also see slavery intensify in the Middle East and Africa, where female slaves were often either servants or concubines, male children were trained as eunuchs, and adult males served in armies. Although slaves came from other places, most of the slave trade came out of Africa. Why did this phenomenon happen?

One answer is that it was mainly racism, or the belief that one race of people is inferior to another. If one assumes racial superiority, then it follows that slavery is justified because the inferior race is actually subhuman. In the 16th century, when Europeans first encountered Africans, they interpreted their ways of life as inferior to those in Europe, and so didn't think of enslavement as being immoral. Another version argues that everyone is ethnocentric, or believes that their ways of life are superior to others, and so any contact with different races brings out this natural human characteristic.

An opposite approach is to think of the main motivation for slavery as economic. Forcing someone to work for you brings an economic benefit. Civilizations throughout history have built their power on the backs of slaves. The 1450-1750 phenomenon occurred because European colonizers were looking for ways to make their colonies profitable, and slavery was one of the solutions. Once people were captured, transported, and put to work in the New World, racism came about in order to justify the way that these human beings were treated. So, the slave traders and holders came to say things like, "They're not really human anyway," or "They can't survive on their own because they can't think for themselves." Instead of racism causing slavery, slavery caused racism. What do you think? Take your pick:

DID RACISM CAUSE SLAVERY, OR DID SLAVERY CAUSE RACISM?	
Arguments for racism causes slavery:	Arguments for slavery causes racism:
All people are ethnocentric; they assume that their race is superior to others; slavery and the slave trade resulted	The Great Circuit was set up for profits. In thinking about what Africans had that was needed in the New World, slave labor was an obvious answer.
The cultures in Africa were very different from those Europeans had seen before; enslaving people that seemed so inferior did that appear to be immoral to them	The Europeans took advantage of the fact that Africans already practiced slavery. There was no need to capture them themselves. It was easy to arrange trade at posts along the Atlantic, a good way to make money.
How do you explain why Africans were specially victimized? Couldn't they have enslaved other Europeans, or people elsewhere in the world? There had to be racism.	Europe was on the rise, and the slave trade was a good way to assert their growing power. Trading slaves from Africa was a sign to all the world that Europeans were now dominant.
The missionary nature of Christianity assumed it to be a superior religion. Otherwise, why convert people? This assumption led to racism, or the belief that the cultures were inferior in other ways than religious beliefs	Once slaves went to work, they usually outnumbered their masters, a situation that invited uprisings, attempts to break free. This fear of being outnumbered caused the masters to be racist, imagining their captives to be evil schemers intent on killing them.
The harsh treatment of slaves on the trans-Atlantic crossing proves that traders did not really think of them as human. Racism caused the treatment.	Treatment on ships was economically motivated. Packing in as many as possible with little to eat meant that profits would be greater. Racism only justified the treatment.
Africans did capture other Africans, but they were ethnocentric, too, because they usually enslaved people from other groups; Europeans did the same thing	The economic reality was that Africans were in control in Africa. They too wanted profits, and so responded to European demand.

The treatment of slaves as chattel (things to be sold) can only be seen as racism, since Europeans did not think about enslaving one another. Europeans used economic incentives, such as selling guns, liquor, and tobacco, to convince the Africans to trade slaves. Slaves were simply the most lucrative product that Africans had.

DEMOGRAPHIC AND ENVIRONMENTAL CHANGES

Demographic changes between 1450 and 1750 were significant. Some major population shifts included:

- A rise in the population of Europe - Europe's population had been decimated by the 14th century plague epidemic, so during the 15th and 16th centuries population levels were growing to match previous levels. Even though population pressure is not a good explanation for the movement of Europeans across to the New World, a long-term population expansion can be seen. For example, in 1000 C.E., Europe had an estimated 36 million people. In 1700 the population had grown to 120 million, the largest percentage increase of any of the continents.
- A decrease in the population of the Americas - This trend may run counter to common knowledge, but it does reflect the decimation of Amerindian populations by their encounters with Europeans. For example, in the late 15th century North America had almost 4 million people, Mexico had more than 21 million, the Caribbean and Central America each had almost 6 million, and South America (Andes and Lowlands) had almost 30 million. By 1700 the entire western hemisphere had only 13 million, a decrease from 67 million or so in 1500. Even though Europeans had settled in both North and South America by 1700, their numbers were too few to make an overall demographic difference.
- No overall population decrease occurred in Africa - Again, counter to common belief, the slave trade did not decimate the populations of Africa. By 1700 Africa had more than 60 million people, almost doubling their population in 1000. To be sure, some areas of Africa did reflect huge population losses, and logically those were places where the slave trade was most vigorous. Because the Atlantic trade was so much larger than the Saharan trade, areas most affected were along Africa's west coast, such as the Gold

Coast and Slave Coast to the north, the Bight of Biafra in the middle, and Angola in the south.

Between 1000 and 1700 C.E., the populations of Asia - including the Middle East, Indian, and East Asia - more than doubled to a total of about 415 million. Clearly, overall world population grew, and the majority of people by the end of the time period still lived in the Middle East and Asia.*

The Columbian Exchange almost certainly caused some environmental changes that help to explain the population trends listed above. For example, maize and cassava (a nutritious plant used in modern day in tapioca) were transported by Portuguese ships from Brazil to Angola in southwest Africa. Angolans cultivated the crops, which adapted very well to their land. Some historians believe that this exchange provided the base for the population increase that followed, despite the fact that many Angolans were captured and deported to the New World as slaves. Likewise, the Andean potato eventually became the staple for poor people in Europe, sustaining population growth despite the number of people that began to migrate to the New World. Major environmental changes occurred in the New World in two major ways:

- Soil exhaustion - Plantations in the Americas tended to rely on single crops, a process that depletes the soil of nutrients, and since land was plentiful, often the planters just moved on to clear more land. For example, in the Caribbean, instead of rotating sugar with other crops, planters found it more profitable to clear new lands when yields began to decline. Eventually, they moved on to other islands.
- Deforestation - The Spanish first cut down forests in the Caribbean to make pastures for the cattle they brought, and deforestation accelerated when more areas were cleared for plantations. In North America, shipbuilding in the northern English colonies took its toll of forests. In all of the Americas, the forests near the coasts were the first to go, so that deforestation was significant in many areas by 1750.

Deforestation was also taking place in Europe during this period. Timber was needed for ships, buildings, wagons, barrels, and many other items. Wood shortages were made worse by the Little Ice Age that began in Europe during the 1590s. People burned wood to keep warm, and by the mid-17th century, forests were growing scarce and wood prices skyrocketed. This wood shortage encouraged the use of coal for fuel, and since England had coal in great supply, deforestation almost certainly helped their economy grow. However, deforestation had many negative effects, especially on the poor.

The Little Ice Age spread as far as China, where it caused hardship that led people to rebellion and discontent, a condition that contributed to the mid-17th century demise of Ming China.

CULTURAL AND INTELLECTUAL DEVELOPMENTS

Any study of the transformation of Europe in the era between 1450-1750 would be incomplete without considering the influence of vast cultural and intellectual changes that began in the Italian city-states before 1450. Trade stimulated by the Crusades had made several of the city-states wealthy, such as Venice, Genoa, and Florence. Wealthy families, such as the Medici in Florence, became patrons of the arts, encouraging and supporting such geniuses as Leonardo da Vinci and Michelangelo. Some of the biggest supporters of Renaissance art and sculpture were the Catholic Popes, who commissioned work for the Vatican and St. Peter's cathedral in Rome. The era also saw a revival of interest in reading, writing, architecture, and philosophy. Without the patrons' wealth, the Italian Renaissance would have been impossible, but it almost certainly was stimulated by contact with the more sophisticated civilizations of the Middle East and south and east Asia. The Renaissance, or "rebirth" was characterized by an attempt to revive the values of the classical civilizations of the Mediterranean, Greece and Rome. Although most of the major Renaissance figures did not actively defy the church, they put emphasis on other aspects of life than the religious. An important philosophical influence restored from ancient civilizations was humanism, which focused on the accomplishments, characteristics, and capabilities of humans, not of God. Humanism is reflected in Renaissance art, with newly skilled artists showing individual differences in faces and beautiful examples of human physiques. The Renaissance spread from Italy north, and by the 16th century had inspired new art styles in the Netherlands and Germany, as well as such literary geniuses as William Shakespeare in England. The importance of the European Renaissance goes far beyond art and literature because it encouraged people to think in different ways than they had before, a quality that Europeans would need as they ventured in science, technology, and eventually across the Atlantic to the Americas.

THE SCIENTIFIC REVOLUTION

The revival of interest in Greek and Roman influences also stimulated developments in math and science. The mathematical traditions that governed the conception of the universe were based in Greek mathematics that had been preserved and built upon by scientists in Muslim lands, such as Nasir al-Din in the 13th century. The

Catholic Church endorsed the views of Ptolemy, the Greek philosopher and astronomer who constructed a geocentric theory where all planets, the moon, and the sun revolved around the earth. Using calculations from al-Din, Polish monk and mathematician, Nicholas Copernicus, concluded that the geocentric theory did not make sense. Instead, his data indicated that the earth and all the other planets rotated around the sun, a conclusion that he did not share widely, for fear of retaliation from the church. In fact, his heliocentric theory was not published until after his death in 1543.

The scientist that really got into trouble over the heliocentric theory was Italian Galileo Galilei, who strengthened and improved Copernicus' theory. Other scientists, such as Johannes Kepler, had demonstrated that planets also moved in elliptical orbits, and Galileo confirmed those theories as well. Perhaps most famously, he built a telescope that allowed him to observe the phenomena directly, recording details of heavenly bodies that the ancients could never have known about. Galileo's theories were published in *The Starry Messenger* in 1610, a highly controversial book criticized by other scientists, as well as officials of the church. Galileo made the mistake of making fun of people that disagreed with him, and he was arrested and put on trial, eventually recanting his theory publicly in order to save his own life.

Perhaps the greatest scientist of the era was Isaac Newton (1642-1727), an English mathematician whose genius shaped many modern fields of science. He formulated the set of mathematical laws for the force of gravity, made discoveries regarding the nature of light, and built on earlier Indian and Arab ideas for algebra. Newton did not challenge the authority of the Catholic Church, but he did prove that the Greeks and Romans were mistaken in some of their theories, and that fact encouraged others to question traditions that had not been challenged before.

THE PROTESTANT REFORMATION

The Catholic Church had been a very important societal force in medieval Europe. Not only had people's lives revolved around religion, but the church had actively defined many other aspects of society, including politics, art, and science. During the era from 1450 to 1750 the church lost significant power in almost every way. Not only were scientists and literary writers beginning to challenge the church, but the Pope's political power was compromised as centralization of government gave more authority to kings. Starting in the early 16th century, the church's religious authority was seriously weakened by the Protestant Reformation, a movement led by Martin Luther, a German priest who believed that the church was seriously flawed.

The Catholic Church was very rich by the early 1500s. Popes were often from Italian merchant families, and their wealth was bolstered by the many lands that church officials claimed all over Europe. Their land ownership in turn led to great political power that many kings deeply resented. Martin Luther, a priest and teacher at the University of Wittenberg, was troubled by all of these trends, especially as he compared the situation to the modest beginnings of Christianity and his interpretation of the teachings of Jesus. His doubts were provoked by priest named Tetzel.

Luther placed a great deal of emphasis on the importance of faith, the glue that he believed formed the bond between Christians and God. According to his own writings, his most important revelation was that faith and actions cannot be separated. A true believer will naturally do good works, so the two are intertwined. He believed that the church practice of accepting indulgences directly contradicted this basic building block of true Christianity. Indulgences were payments to the church that insured eternal salvation, or life after death in heaven. For example, in 1519, when Luther openly challenged the religious authority of the church, the Pope was conducting an indulgence campaign to raise money for a new basilica for St. Peter's Church in Rome. Tetzel was the priest collecting indulgences in Wittenberg, who so enraged Luther with his blatant selling of indulgences for promises of salvation that he wrote and openly displayed the 95 Theses, which listed 95 problems with church practices. With this action, Luther did what no priest had dared to do before – openly defy the authority of the church.

The developments after Luther's posting of the 95 Theses indicate just how dramatically times were changing in Europe. Luther was excommunicated from the church, but he managed to hide from them throughout his long life with the help of many German princes. His writings were widely accepted in Germany, where Protestantism, as the protest movement came to be called, took firm root. Other Protestant groups sprang up in France, and from their found new vitality in Geneva, Switzerland, where John Calvin started yet another branch of Protestantism called Calvinism. Calvinism was carried to Scotland by one of Calvin's admirers, John Knox, and from there it made its way into England. Another blow to the church came when King Henry VIII of England separated religious institutions in his kingdom from the church when the Pope refused to grant him an annulment from his first wife, Catherine of Aragon.

By the end of the 16th century, large parts of Europe, particularly in Germany and Britain, were no longer under the authority of the Catholic Church. The church responded with its own internal reformation, but the result was a Europe deeply divided between Protestants and Catholics, a dynamic that fed the already intense competition among European nations.

THE IMPORTANCE OF THE PRINTING PRESS

Johannes Gutenberg, a printer from Mainz Germany, contributed greatly to the rapid spread of Protestantism. He died in 1468, many years before the Reformation began, but without his construction of a workable printing press around 1450, Luther's word almost certainly never would have gotten out. In 1454 he printed his famous Gutenberg Bible with moveable type, and the book inspired early Renaissance writers, such as Erasmus, to use the technology to print their own works. By 1550 at least 10 million printed works were circulating around Europe from presses in hundreds of towns. Guttenberg did not invent moveable type or the printing press. Both the Chinese and Koreans had used them in earlier years, and they too had spread literacy in Asia by printing books and making them accessible to more people. In Europe the device appeared as a critical invention at a critical time in European history. Without it the Renaissance, the Scientific Revolution, the Protestant Reformation, and ultimately the Maritime Revolution would not have been possible.

THE EARLY EUROPEAN ENLIGHTENMENT

During the 17th century, the Scientific Revolution began to be applied to social and political areas of life, a movement known as the Enlightenment. Enlightenment philosophers believed that human reason that discovered laws of science could also discover the laws that governed social and political behavior. The movement was also inspired by the Reformation, which had challenged and revised accepted religious thought, and by contact with political and social philosophies from other parts of the world.

In England the English Civil War shaped political thought. The king was decapitated, and political authority fell to Parliament, causing English political philosopher John Locke to reconsider the nature of government. In his famous Second Treatise of Civil Government, he argued that rulers get their right to rule not from the heavens, but from the consent of the governed. His philosophy laid the basis for rule of law, not by the whim of the monarch, an idea that was far from new. However, he added that if monarchs overstepped the law, citizens not only had the right, but the duty to rebel. His philosophy influenced thinkers in the late 1700s, who in turn inspired democratic revolutions in many places, including North America and France.

CULTURAL AND INTELLECTUAL LIFE IN CHINA

The Ming and early Qing emperors of this era continued to look to Chinese traditions to strengthen cultural and intellectual life. Neo-Confucianism, which had first emerged as a powerful philosophy during the Song era, was very strong, and numerous Confucian schools were founded by the emperors to reinforce its beliefs. The civil service exams were maintained, and other Chinese philosophy, literature and history were compiled during this time. For example, Emperor Kangxi compiled a Collection of Books that he had printed and distributed throughout China, reflecting the influence of the printing press in Asia as well as in Europe. Emperor Qinglong's Complete Library of the Four Treasures was too large to print, but he had seven manuscript copies placed in different libraries around China.

The printing press also made popular novels available, which were read by literate businessmen. Confucian scholars looked down on popular novels, but their appearance indicates the spread of literacy beyond the bureaucratic elite. Perhaps the most famous of these books was Journey to the West, an account of the journey of famous Buddhist monk Xuanzang to India to retrieve the Buddhist canon, thus bringing Buddhism to China. The novel featured a magical monkey who was Xuanzang's traveling companion, a character who became one of the most celebrated in Chinese literature.

PATRONAGE IN THE ISLAMIC EMPIRES

Just as wealth in the Italian city-states prompted patronage of the arts, so it did in the Islamic Empires as well. The emperors competed to attract the best scholars, literary writers, artists, and architects to their courts. The Ottoman sultans built beautiful palaces and mosques, with the most famous religious complex built by Suleyman the Magnificent called Suleymaniye, a blend of Islamic and Byzantine architectural features. The Safavid capital, Isfahan, was considered to be one of the most architectural beautiful in all the world, with its monumental entryways, large courtyards, and intricate decoration.

Perhaps the most famous monument in Islamic lands was the Taj Mahal, built by Mughal Emperor Shah Jahan, who dedicated the white marble mosque and tomb to the memory of his wife. He planned to build a similar mausoleum out of black marble for himself, but he was deposed by his son and spent the rest of his life in prison, where he supposedly could see his wife's tomb through a small window with the help of a mirror.

By 1750 the world was a much different one than had existed in 1450. This era saw the rise of Europe, though scholars debate just how much power Europeans actually had in the world economy. They dominated the New World, which was connected by regular, sustained contact to the eastern hemisphere during this time. They also controlled much of the African slave trade, but it is important to note that no European had ventured far into the interior of the continent by 1750. They were still dependent on African kingdoms to bring the slaves to the trading posts, and Europeans had not set up significant colonies in Africa, except at the very southern tip, Capetown near the Cape of Good Hope. This situation would change dramatically during the following era. Great empires continued to form in East Asia, the Middle East, and India, as the technological invention of gunpowder allowed them to conquer the nomadic groups that had challenged their authority for centuries. However, land-based empires clearly lost power in proportion to sea-faring powers, as world trade routes connected the western hemisphere to the east. These increased contacts were to have important consequences for people all over the world in the period from 1750-1914.

References:

* Population statistics modified from Dennis H. Wrong, ed., *Population and Society* (1977); William M. Deneven, *the Native Populations of the Americas in 1492* (1976), 289-292.