World History

Egypt(3000 BC)

Early ancient Egypt was the first empire; it socio-politically tradition-bound and extremely conservative. Egyptians were the most tradition-bound people in the history of the world. They preferred tradition over change thinking that change for the sake of change is a principle of dubious merit. The Pharaohs agreed because that allowed them to keep their power. Egyptian society was organized hierarchically, with gods at the top, the Pharaohs beneath, humanity next, and the dead at the bottom. Pharaoh was a god-man. Egyptians excelled at agriculture and at immense construction projects such as the Great Pyramids. They spent their lives and fortunes preparing for death.

India(2500 BC)

The ten centuries about 2500 BC saw the rise and fall of an ancient river valley culture based on the Indus River. Classes of society in India dominated by the caste system to maintain order. Indian civilization is best known for the caste system, it hierarchical ordering of civilization. The caste system was helpful for controlling a massive society with vastly different socioeconomic classes. The caste system of: Brahmans (priests), Barons (warriors), Commoners (merchants), and Sudras (artisans and laborers).

Mesopotamia(3500 BC)

Mesopotamia is earliest human civilization; first to use written language. The Sumerians lived in lower Mesopotamia (Iraq) during the fourth and third millennia BC. Mesopotamia was placed between the rivers, Tigris river and Euphrates river. in lower Mesopotamia (Iraq) during the fourth and third millennia BC.

China(221 BC)

China built the Great Wall and employed Confucian doctrine in their governance. China unified in 221 BC. Their first "sovereign emperor" was Shih Huang-ti. First, He built a massive network of roads and then began construction of the Great Wall. He also abolished the feudal system and replaced with a state bureaucracy built on Confucian principles, the most important of which is that society should be a meritocracy. Confucius (551BC~479) was the most famous teacher in Chinese history and one of the most influential men of all time. Huang-ti tortured hundreds of dissenting intellectuals. He also wished to be immortal, and sought out any divinity that would promise an elixir of life. He died twelve years after taking the throne. Shih Huang-ti's innovations were crucial to the task of ruling a nation as large as China.

Aztec(1427 AD) and Inca(1438 AD)

Both Aztec and Inca's rulers governed by fear and force, and human sacrifice was pervasive. Both crumbled before the challenge of European arms. The Aztecs (Mexico) created a written language and an accurate calendar. They constructed elegant and elaborate buildings made of stone. They developed an agricultural system that included a sophisticated irrigation system. Montezuma II was the last king. The Incas (Peru) constructed great buildings and road systems. Machu Picchu is the one of the greatest building of Inca. Both people groups were violence and fear, and human sacrifice was practiced.

Babylonian Empire(1728-323B.C.)

Babylonia, ancient cultural region occupying southeastern Mesopotamia between the Tigris and Euphrates rivers (modern southern Iraq from around Baghdad to the Persian Gulf). Because the city of Babylon was the capital of this area for so many centuries, the term Babylonia has come to refer to the entire culture that developed in the area from the time it was first settled, about 4000 BCE. Before Babylon's rise to political prominence (*c.* 1850 BCE), however, the area was divided into two countries: Sumer in the southeast and Akkad in the northwest.

Hammurabi

One of the earliest and most complete ancient legal codes was proclaimed by the Babylonian king Hammurabi, who reigned from 1792 to 1750 B.C. Hammurabi expanded the city-state of Babylon along the Euphrates River to unite all of southern Mesopotamia. His code, a collection of 282 laws and standards, stipulated rules for commercial interactions and set fines and punishments to meet the requirements of justice. Hammurabi's Code was proclaimed at the end of his reign and carved onto a massive, finger-shaped black stone stela (pillar) that was looted by later invaders and rediscovered in 1901 by a French archaeological team in present-day Iran.

Assyrian Empire(2500-625B.C.)

Assyria, in its original geographical and historical sense, was a small triangular-shaped land lying between the Tigris and the Zab Rivers and the Median Mountains. When the Assyrians gained in power and numbers, they soon extended their dominion beyond these very narrow boundaries so that even in early times the name Assyria was carried westward to the Euphrates and southward as far as Hit. At the Zenith of its rule, Assyria could lay claim to an empire that stretched from Egypt in the west to the borders of Iran in the east that encompassed the whole of the Fertile Crescent in the realm of a single imperial domain. The beginning of the Assyrian Empire can be traced to a small town called Ashur from where the name Assyria has been derived. The merchants of the city of Ashur became wealthier which in turn influenced the growth and prosperity of the town.

Human Sacrifice

All ancient religions practiced some kind of sacrifice; the Jews may have been the first to disavow human sacrifice. Almost all world religions have practiced sacrifice. Usually they sacrificed animals,

but some of the first agricultural peoples, and a number of later people groups, practiced human sacrifice. Usually the victim was chosen for his/her youth and beauty, was clothed in beautiful garments; they were sacrificed by cut throats, drowning, and/or burial. There were two ways of sacrifice; first, In one, victim was killed, a part of the body was burned, and the remainder was eaten in a joyous meal of communion. Second, object was burned so that goes upward, if gods lived in underworld, then victim was buried. The Jews possibly were the first people to refrain from human sacrifice. Buddhism and Islam reject it.

Judaism

Judaism is defined by the Law of Moses, the covenant God made with Abraham, and their monotheistic witness to the reality of God. Usually they sacrificed animals, but some of the first agricultural peoples, and a number of later people groups, practiced human sacrifice. Usually the victim was chosen for his/her youth and beauty, was clothed in beautiful garments; they were sacrificed by cut throats, drowning, and/or burial. There are three ways to describe the Judaism. They were given the law, via Moses, at Mt. Sinai. They were given a covenant in which God promised never to desert them. They were required to be a witness to the world by showing God's being, goodness, and justice.

Christianity

Christianity is focused on the life, death, and resurrection of Jesus; Christ's Sermon on the Mount and command to take up the cross and follow him basically sum up its teaching. The most trenchant statement of the new doctrine is contained in Christ's Sermon on the Mount. He established the Christian Church, upon rock, by a play upon words, upon disciple Peter. He claims that the best way to sum up Jesus' teachings is, "Whosoever will come after me, let him deny himself, and take up his cross, and follow me."

Islam

Muhammad began receiving divine message from the angel Gabriel in AD 610 "You are the Messenger of God."; he founded both a state and a religion. Muhammad found a new religion, Islam, and unite all the Arabs and Arabia into one nation. He received revelation-verbal messages and it calls Koran, sacred scripture of Islam. He is one of the most remarkable and charismatic men in history. Muslims attempt to walk "the straight path" (Sur 1), a path with clear commands such as the five pillars. I will also mention a sixth practice that pervades Islam and serves as a pillar: missiology/jihad(holy war).

Buddhism

Mainly a system of ethical thought and mystical contemplation began by Siddhartha Gautama in 528 BC. Siddartha Guatama, the Buddha (Enlightened One) was born in 563 BC to a regal and wealthy family. He was married. But when he was 29, he began to reflect on man's fate, which is sickness and death. He was sad, and wanted some alleviation to this life's pain. So he wandered south to the Magadha kingdom, hoping to find the teacher to give him the answer. At first, He contemplated. At second, He undertakes a life of extreme ascetic(금욕). One morning, in 528 BC,

he sat down cross-legged under a great bo tree (banyan) at Buddha Gaya to meditate and seek enlightenment. During that time, Mara, devil, tempted him all night. By the next morning, when he was 35, he had become enlightened (knowing the Truth) and was a supreme Buddha. A man should seek the middle path between self-indulgence and self-mortification, it called Noble Eightfold Path; right view, right thought, and right speech. There are four noble truths. Man's existence is full of conflict, sorrow, and suffering. All difficulty and pain is caused by man's selfish desire. There can be found emancipation and freedom-Nirvana. The Noble Eighfold Pate is the way to this liberation. He claims social equality.

Alphabets and the Zero

There were differences in the first alphabets developed among ancient civilizations. The Mesopotamians were probably the first to develop an alphabet, Phoenician alphabet contained only consonants. The Greeks were first to have one with vowels; writing clearly is a tool for thinking clearly. Mayan and Egyptians using numbers first, but Babylonian deserves to have a credit. The Babylonians discovered positional notation in doing calculations (Sexigesima number system), but didn't understand until much later what the "0" in a number like 508 meant, and they often left it out. Egyptians and Late Greek astronomers use "0" but they could not fully understand it.

Thales(624-546 BC)

The ancient Greek philosopher Thales was born in Miletus in Greek Ionia. Aristotle, the major source for Thales's philosophy and science, identified Thales as the first person to investigate and basic principles, the question of the originating substances of matter and, therefore, as the founder of the school of natural philosophy. Thales was interested in almost everything, investigating almost all areas of knowledge, philosophy, history, science, mathematics, engineering, geography, and politics.

Pythagoras(570-495 BC)

Pythagoras was an Ionian Greek philosopher, mathematician, and the putative founder of the movement called Pythagoreanism. Most of the information about Pythagoras was written down centuries after he lived, so very little reliable information is known about him. He was born on the island of Samos, and travelled, visiting Egypt ad Greece, and maybe India. Around 530 BC, he moved to Croton and there established some kind of school or guild. Pythagoras made influential contributions to philosophy and religion in the late 6^{th} century BC.

Socrates(470-399 BC)

Viewed by many as the founding figure of Western philosophy, Socrates is at once the most exemplary and the strangest of the Greek philosophers. He grew up during the golden age of Pericles' Athens, served with distinction as a soldier, but became best known as a questioner of everything and everyone. His style of teaching-immortalized as the Socratic Method- involved not conveying knowledge but rather asking question after clarifying question until his students arrived at their own understanding. He wrote nothing himself, so all that is known about him is filtered

through the writings of a few contemporaries and followers, most of all, his student Plato. He was accused of corrupting the youth of Athens and sentenced to death. Choosing not to flee, he spent his final days in the company of his friends before drinking the executioner's cup of poisonous hemlock.

Democritus(460-370 BC)

Democritus, known in antiquity as the 'laughing philosopher' because of his emphasis on the value of 'cheerfulness,' was one of the two founders of ancient atomist theory. He elaborated a system originated by his teacher Leucippus into a materialist account of the natural world. The atomists held that there are smallest indivisible bodies from which everything else is composed, and that these move about in an infinite void. Of the ancient materialist accounts of the natural world which did not rely on some kind of teleology or purpose to account for the apparent order and regularity found in the world, atomism was the most influential.

Plato(428-347 BC)

The Athenian philosopher Plato (c.428-347 B.C.) is one of the most important figures of the Ancient Greek world and the entire history of Western thought. In his written dialogues he conveyed and expanded on the ideas and techniques of his teacher Socrates. The Academy he founded was by some accounts the world's first university and in it he trained his greatest student, the equally influential philosopher Aristotle. Plato's recurring fascination was the distinction between ideal forms and everyday experience, and how it played out both for individuals and for societies. In the "Republic," his most famous work, he envisioned a civilization governed not by lowly appetites but by the pure wisdom of a philosopher-king.

Herodotus(425 BC)

Sometime around the year 425 B.C., the writer and geographer Herodotus published his magnum opus: a long account of the Greco-Persian Wars that he called The Histories. (The Greek word "historie" means "inquiry.") Before Herodotus, no writer had ever made such a systematic, thorough study of the past or tried to explain the cause-and-effect of its events. After Herodotus, historical analysis became an indispensable part of intellectual and political life. Scholars have been following in Herodotus' footsteps for 2,500 years.

Thucydides(460-400 BC)

One of the greatest ancient historians, Thucydides (c.460 B.C.–c.400 B.C.) chronicled nearly 30 years of war and tension between Athens and Sparta. His "History of the Peloponnesian War" set a standard for scope, concision and accuracy that makes it a defining text of the historical genre. Unlike his near-contemporary Herodotus (author of the other great ancient Greek history), Thucydides' topic was his own time. He relied on the testimony of eyewitnesses and his own experiences as a general during the war. Though specific in detail, the questions he addressed were timeless: What makes nations go to war? How can politics elevate or poison a society? What is the measure of a great leader or a great democracy?

Aristotle(384-322 BC)

The Greek philosopher Aristotle (384-322 B.C.) made significant and lasting contributions to nearly every aspect of human knowledge, from logic to biology to ethics and aesthetics. Though overshadowed in classical times by the work of his teacher Plato, from late antiquity through the Enlightenment, Aristotle's surviving writings were incredibly influential. In Arabic philosophy, he was known simply as "The First Teacher"; in the West, he was "The Philosopher."

Roman Empire(100 BC- 400 AD)

Beginning in the eighth century B.C., Ancient Rome grew from a small town on central Italy's Tiber River into an empire that at its peak encompassed most of continental Europe, Britain, much of western Asia, northern Africa and the Mediterranean islands. Among the many legacies of Roman dominance are the widespread use of the Romance languages (Italian, French, Spanish, Portuguese and Romanian) derived from Latin, the modern Western alphabet and calendar and the emergence of Christianity as a major world religion. After 450 years as a republic, Rome became an empire in the wake of Julius Caesar's rise and fall in the first century B.C. The long and triumphant reign of its first emperor, Augustus, began a golden age of peace and prosperity; by contrast, the empire's decline and fall by the fifth century A.D. was one of the most dramatic implosions in the history of human civilization.

Cicero(106-43 BC)

Greek philosophy and rhetoric moved fully into Latin for the first time in the speeches, letters and dialogues of Cicero (106-43 B.C.), the greatest orator of the late Roman Republic. A brilliant lawyer and the first of his family to achieve Roman office, Cicero was one of the leading political figures of the era of Julius Caesar, Pompey, Marc Antony and Octavian. A string of misjudged alliances saw him exiled and eventually murdered, but Cicero's writings barely waned in influence over the centuries. It was through him that the thinkers of the Renaissance and Enlightenment discovered the riches of Classical rhetoric and philosophy.

Augustine(354-430 AD)

Born in Tagaste, North Africa; he wrote many famous and influential works, e.g. Confessions; City of God, Enchiridion, etc. Embraced the philosophy of Cicero as a young man, then imbibed Manicheanism (a form of good/ evil dualism). Became dissatisfied and began to follow Plotinus (founder of Neoplatonism). Yet, the prayers of his mother prevailed and in 386, He converted to Christianity and thereafter became the most influential Christian thinker this side of the Apostle Paul. Later became the Bishop of Hippo in Africa and took the British Monk Pelagius to the theological woodshed. However, his most influential and wrestled-over work is The City of God.

Constantine(287-337)

Constantine I was born circa 280 in Naissus, Moesia (now Niš, Serbia). His father became the Western Roman emperor in 305; after his father's death, Constantine fought to take power. He became the Western emperor in 312 and the sole Roman emperor in 324. Constantine was also the first emperor to adhere to Christianity. He issued an edict that protected Christians in the empire and converted to Christianity on his deathbed in 337.

Decline of Rome

To many historians the fall of the Roman Empire has always been viewed as the end of the ancient world and the onset of the Middle Ages, often improperly called the Dark Ages, despite Petrarch's assertion. Since much of the west had already fallen by the middle of the fifth century, when a writer speaks of the fall of the empire, he or she generally refers to the fall of the city of Rome. Although historians generally agree on the year of the fall, 476 CE, they often disagree on its causes. English historian Edward Gibbon, who wrote in the late 18th century CE, points to the rise of Christianity and its effect on the Roman psyche while others believe the decline and fall was due, in part, to the influx of 'barbarians' from the north and west

Middle Age

People use the phrase "Middle Ages" to describe Europe between the fall of Rome in 476 CE and the beginning of the Renaissance in the 14th century. Many scholars call the era the "medieval period" instead; "Middle Ages," they say, incorrectly implies that the period is an insignificant blip sandwiched between two much more important epochs.

Boethius (480 – 524)

Anicius Manlius Severinus Boethius has long been recognized as one of the most important intermediaries between ancient philosophy and the Latin Middle Ages and, through his *Consolation of Philosophy,* as a talented literary writer, with a gift for making philosophical ideas dramatic and accessible to a wider public. He had previously translated Aristotle's logical works into Latin, written commentaries on them as well as logical textbooks, and used his logical training to contribute to the theological discussions of the time. All these writings, which would be enormously influential in the Middle Ages, drew extensively on the thinking of Greek Neoplatonists such as Porphyry and Iamblichus. Recent work has also tried to identify and evaluate Boethius's own contribution, as an independent thinker, though one working within a tradition which put little obvious weight on philosophical originality. Both aspects of Boethius will be considered in the sections which follow.

Psuedo-Dionysius(650-725)

Dionysius is the author of three long treatises (*The Divine Names*, *The Celestial Hierarchy*, and *The Ecclesiastical Hierarchy*) one short treatise (*The Mystical Theology*) and ten letters expounding various aspects of Christian Philosophy from a mystical and Neoplatonic perspective. Presenting himself as Dionysius the Areopagite, the disciple of Paul mentioned in Acts 17:34, his writings had the status of apostolic authority until the 19th century when studies had shown the writings denoted a marked influence from the Athenian Neoplatonic school of Proclus and thus were probably written ca. 500. Although the attribution of authorship has proven to be a falsification, the unknown author (hereafter referred to as Ps-Dionysius) has not lost his credibility as an articulate Athenian Neoplatonist expressing an authentic Christian mystical tradition. Indeed with eloquent poetic language and strong exposition of ideas, the Dionysian corpus ranks among the classics of western spirituality.

Avicenna (980 – 1037)

Avicenna was from Bukhara, memorized the Qur'an by age 10, and surpassed his teachers by age 18. By the time he was 21, he was a famous physician.

His most significant works are:

1. *The Book of Healing* was an encyclopedia of philosophy and science based on Aristotelian theory.
2. *The Canon of Medicine* was an encyclopedia of medical knowledge.

Westerners benefited from his works, which were translated into Latin, because it was for the West a source of information about Greek thought in general and Aristotle in particular. Muslims, however, have tended to call Avicenna a heretic for imbibing so much of Aristotle. One of Avicenna' main contributions to medieval thought is his defense of the transcendental agent intellect. The basic idea is that there exists an intellect that transcends the human intellect and causes us to obtain knowledge of the world.

Averroës (1126 – 1198)

Averroes wanted to raise the profile of philosophy in the Muslim world. He wrote critical commentaries on Aristotle's work (that included portions of Aristotle's original text), interpreted Plato's *Republic* as being lacking only in the need for Allah and Muhammad, and argued that women's rights should be raised the way Plato raised them.

Many Western thinkers interpreted Averroes to be teaching that truth is split into two truths, one in the natural world and one in God, both which are worthy of study. This split-level world was a serious challenge to the Augustinians.

Aquinas(1225-1274)

Philosopher and theologian St. Thomas Aquinas was born circa 1225 in Roccasecca, Italy. Combining the theological principles of faith with the philosophical principles of reason, he ranked among the most influential thinkers of medieval Scholasticism. An authority of the Roman Catholic Church and a prolific writer, Aquinas died on March 7, 1274, at the Cistercian monastery of Fossanova, near Terracina, Latium, Papal States, Italy.

Dante(1265-1321)

Dante's Divine Comedy serves as a great marker for the end of the Middle Ages and the beginning of the Renaissance. He divides it into three parts: hell, purgatory, and heaven. Virgil guides Dante through Hell and purgatory, but Beatrice guides him to heaven's door and St. Bernard guides him to Mary, who helps him take the final step toward God. In heaven, former enemies are united (Albertus Magnus, Peter Lombard, Solomon, Boethius, Pseudo-Dionysius). His work was an artistic culmination of a millennium of obsession with God.

Renaissance

Renaissance, literally "rebirth," the period in European civilization immediately following the Middle Ages and conventionally held to have been characterized by a surge of interest in Classical scholarship and values. The Renaissance also witnessed the discovery and exploration of new continents, the substitution of the Copernican for the Ptolemaic system of astronomy, the decline of the feudal system and the growth of commerce, and the invention or application of such potentially powerful innovations as paper, printing, the mariner's compass, and gunpowder. To the scholars and thinkers of the day, however, it was primarily a time of the revival of Classical learning and wisdom after a long period of cultural decline and stagnation.

The Black Death(1347)

When the Kipchaks and Mongols besieged a Genoese trading post in 1347, they brought the Plague with them. The Kipchak commander decided to catapult several infected corpses into the town. Because the community had not immunity, they began to die. The Black Plague was carried by rodents (usually rats), and spread by the fleas that infested the rats. It spread especially well in crowded medieval cities. Somewhere between 25-50% of Europeans died from the plague. The epidemic lasted for twenty years. On the positive side, the survivors inherited the wealth of the dead, which catalyzed a long period of prosperity. In fact the surplus of rags and garments led to the manufacture of rag paper. Also significant is the fact that Byzantium was one of the first cities infected. Many of the educated and cultured persons from Byzantium fled to the West, which catalyzed the cultural advances of the West.

Gutenber(1398-1468)

Johannes Gutenberg, in full Johann Gensfleisch zur Laden zum Gutenberg (born 14th century, Mainz [Germany]—died probably February 3, 1468, Mainz) German craftsman and inventor who originated a method of printing from movable type that was used without important change until the 20th century. The unique elements of his invention consisted of a mold, with punch-stamped matrices (metal prisms used to mold the face of the type) with which type could be cast precisely and in large quantities; a type-metal alloy; a new press, derived from those used in wine making, papermaking, and bookbinding; and an oil-based printing ink. None of these features existed in Chinese or Korean printing, or in the existing European technique of stamping letters on various surfaces, or in woodblock printing.

Leonardo da Vinci(1452-1519)

Leonardo da Vinci (1452-1519) produce a small body of work (including *Mona Lisa* and *The Last Supper*) but is very famous. In addition to his famous paintings, he wrote thousands of pages of knowledge about many topics, including anatomy, architecture, animals, and angels. He included many sketches. Significantly, he advanced knowledge by rejecting Aristotle's "stasis" as the supreme principle of the world; instead force and restlessness were the supreme principles.

Pico della Mirandola(1463-1494)

Pico della Mirandola (1463-1494) lived only to his early thirties, but was astonishingly learned. He received a humanistic education and knew Hebrew, Aramaic, and Arabic. He published a list of 900 theses and challenged any man in Europe to dispute them. The only "person" to take him up on the offer was the Vatican, which declared 13 of the theses heretical. Pico recanted. Later, he wrote *On the Dignity of Man*, in which he argued that man is either the spiritual center of the universe or he is a co-center with God.

Montaigne(1533-1592)

Michel de Montaigne was a French author who was taught Latin as his first tongue and French as his second. After political service for Henry IV, he began to write *Essays*. They are linguistic masterpieces that are also quintessentially Renaissance-oriented. They are the first Renaissance book whose purpose was to explore the author's mind and heart in a relentlessly honest way. The book is about self-knowledge; it is a literature of revealment rather than concealment.

Cervantes(1547-1616)

Miguel de Cervantes Saavedra (1547-1616) was first a soldier, then a writer. He was a great soldier and even endured five years of captivity. But even while he was a soldier, he wanted to be a writer. So he wrote all sorts of pieces (plays, stories, romances), all of which failed. Then he wrote a fictional story about an old gentleman who decided to be a knight. This gentleman, Don Quixote, set forth on his old horse Rosinante with a rusty sword and battered shield. He intended to conquer dragons, but, as it were, only found sheep and giant windmills. He thought the windmills were knights. In almost all of his adventures he was tricked and betrayed. His partner was a round peasant named Sancho Panza, who eventually began to imagine himself the squire of a true knight. Eventually, he was transported home in a cage. Don Quixote was a great success, and in no small part because it helped usher in a new world by mocking the old one. The medieval world had promoted chivalry in which knights-errant were emissaries of God's kingdom who did justice as they rode through the fields. Cervantes was juxtaposing this beautiful ideal with the reality of whirling windmills and other technological developments. He wanted to show how we could enjoy both romance and progress.

Francis Bacon(1561-1626)

Francis Bacon (1561-1626) was a politician who was accused and convicted of taking bribes. He withdrew from the public eye, at which time he did some amazing intellectual work. He is famous for *Essays*, *Advancement of Learning*, and *Novum Organon*. Bacon opposed Aristotle's deductive

method and proposed his own inductive method for science. (Today, we realize that scientists must use both methods.)

Shakespeare(1564-1616)

We are not sure if "Shakespeare" is the real name of a real author, the pseudonym of a real author, or, perhaps, the pseudonym of a group of authors.

But Shakespeare was a genius. He didn't know the Greek tragedians, and only knew of a handful of playwrights. He was equally good at tragedy and comedy. His expanded and transformed the English language. He minimizes Christianity and focuses on humanity. He was brilliantly perceptive of the human condition, revealing to us things about ourselves that we've always known but never faced or articulated.

Nation-State

The small Italian communes, however, soon fell prey to larger city-states. A new political paradigm was needed. That new paradigm was the "nation," which is quite difficult to define, but which has something to do with commonalities such as language, tradition, geography, and the ability to defend itself. Over time, the larger nations tended to conquer the smaller ones, and centralize their own economies. The kings of these nations tended to help bolster the Renaissance because they did diplomacy in Latin (which forced them to rely on Humanists), employ artists to decorate their palaces and throne rooms, etc. They taxed their people in order to build new roads and larger ships, expand their military presence, and make various types of progress. People began to believe that progress was possible.

Mongol Empires

As we learned earlier, the Huns broke through the Great Wall of China and initiated a movement that would later destroy the Roman empire. After that, Mongolia was quiet for a long time. But then at the beginning of the thirteenth century, the Mongolians created the world's largest empire, and did it via ruthless horsemen warriors. The most famous of all was Genghis Khan (1167-1227), who unified the Mongols by 1206 and then proceeded to conquer Asia. Then Kublai Khan (1215-1294) became the Chinese emperor. Then Timur, or Tamerlane (1336-1405), conquered Russia, India, Persia, etc.

Marco Polo(1254-1324)

Marco Polo (1254-1324) was born and died in Venice, but was an adventurer in the years between. He met Kublai Khan, moved to the Mongol empire, wrote "The Travels of Marco Polo," became a sort of roving ambassador for the empire, and then moved back to Europe. As he returned home, robbers took almost everything he and his family owned. But soon, within a hundred years or so after Polo's death, China walled itself off from the world for 500 years.

Columbus(1451-1506)

The Portuguese were irritated that Indian middlemen ate up much of their profits. So they began to dream about a westward route to the East Indies, that would cut out the Indian middlemen. Christopher Columbus (1451-1506) was an excellent navigator and experienced seaman who

plotted a route to the Indies. The route was right, but he made a number of miscalculations that ended up dumping him out on the Americas. He proposed his plan to the Spanish king and queen (1490), who were taken aback that Columbus, upon completion of the route, wanted to be made a nobleman and for the title to remain in his family in perpetuity, and he wanted a 10 percent commission. At first, they declined, but later agreed to it. Columbus assembled his crew and ended up in America, but never knew he had discovered a new world.

Ferdinand Magellan (1480-1521)

Ferdinand Magellan (1480-1521) was chosen to find out if the world is really round, if a person can sail West from Europe and eventually end up back in Europe. Magellan was chosen to find out. After a difficult voyage in which he lost two of its five ships, it made landfall at the island of Guam. Then he sailed and found the Philippines (claiming it for Spain), where soon he was killed in a knife fight. Only one ship ended up returning to Spain.

Niccolo Machiavelli(1469-1527)

Machiavelli (1469-1527) was born in Florence, Italy. He lived during some very prosperous and happy years under Lorenzo I de Medici, and during some years of turmoil that followed afterwards. He walked in elite circles and saw corruption and scandal both in the political and ecclesiastical realms. Based on what he saw, he concluded that both God and man are wicked.

Aristotelian Motion

This view of the world made a lot of sense at the time. It sure seems to us that everything is at rest, or is seeking rest. Even humans and animals seek a resting place (their grave). Christian theology taught that humanity sought its final rest in God. Aristotle taught that there were two kinds of motion: natural motion that results from the weight of a thing (something falling) and unnatural motion that happens when forced is applied to a thing (baseball bat hits a ball).

Copernicus(1473-1543)

Nicolaus Copernicus (1473-1543) lived in Poland mostly. By the time he was in his late twenties, he had mastered medicine, law, mathematics, and astronomy. He began with the Aristotelian-Ptolemaic theory of the heavens, but soon left it. The theory was unnecessarily complicated, as it tried so very hard to explain why and how the stars rotate around the earth every day. Why not posit that the earth rotates and, in so doing, solve the problem? Also, why not posit that the earth revolves around the sun and, in so doing, make the planetary orbits so much easier to explain. Copernicus developed his theories (rotating earth, heliocentric system) throughout his life, but because of the gravity of them, only allowed them to be printed when he was on his deathbed. A copy was brought to him the day he died in 1543.

Tycho Brahe(1546-1601)

Tycho Brahe (1546-1601) was a Danish astronomer who had inherited incredible wealth. He used that wealth, along with financial aid from the Danish king, to build his own observatory, from which he corrected the gross inaccuracies of existing astronomical records. In 1572, he discovered a bright new star. In 1573, he published a book about it, which made him famous but also

sparked controversy. In the Aristotelian and Roman church's view of things, there were not supposed to be new stars. As they saw it, the heavens did not change, even though the earth was chaotic and changeable. The Roman powers criticized Tycho, but Tycho was protected by the Danish king, who was Lutheran. When that kind died, and the next king was less interested in Tycho's work, Tycho moved to Prague, where he continued his work with the assistance of a young student named Johannes Kepler.

Gilbert(1544-1603)

William Gilbert (1544-1603) was an English physician whose hobby was science. His hobby made him famous. He was fascinated by lodestone because of its magnetism, and eventually discovered that the world itself is a magnet. He suspected that gravity and magnetism were related, but wasn't sure how. He supported Copernicus' heliocentrism and suggested that some kind of magnetism held the planets in their orbits.

Kepler(1571-1630)

Johannes Kepler (1571-1630) was Tycho Brahe's student. When Brahe died, Kepler received all of his papers and was appointed imperial mathematician in Prague. He is best known for his three laws of planetary motion, because these laws made sense of the planets' epicycles and eccentric orbits: First Law: planetary motion is not uniformly circular. It is elliptical. Second Law: a radius vector joins a planet to the sun; it sweeps out equal areas in equal times. Planets travel more quickly when they are in orbit closer to the sun than when they are in orbit farther away from it. Third Law: there is a mathematical relation between a planet's distance from the sun and its period of revolution. He was also fascinated by an unsolved problem: what holds the planets in orbit, and what drives them forward? He tried to answer that problem by drawing upon Aristotle's assumption of inertial rest. The fact that he did not discard Aristotle's errant assumption kept him from discovering what Newton discovered.

Galileo(1564-1646)

Considered the father of modern science, Galileo Galilei (1564-1642) made major contributions to the fields of physics, astronomy, cosmology, mathematics and philosophy. He invented an improved telescope that let him observe and describe the moons of Jupiter, the rings of Saturn, the phases of Venus, sunspots and the rugged lunar surface. His flair for self-promotion earned him powerful friends among Italy's ruling elite and enemies among the Catholic Church's leaders. His advocacy of a heliocentric universe brought him before religious authorities in 1616 and again in 1633, when he was forced to recant and placed under house arrest for the rest of his life.

Descartes(1596-1650)

Rene Descartes (1596-1650) was a French Catholic philosopher whose work revolutionized philosophy and undermined the authority of the Roman church. After having received a fine Jesuit education, he set forth to find certainty. He wanted philosophy and theology to achieve the type of certainty that mathematics had achieved. He read voluminously, traveled widely, and engaged in conversation with the most progressive thinkers in Europe. He wanted to write a magnum opus

in which he would organize all knowledge into a grand structure, based on a foundationalist method that would lead to certainty. However, Galileo's condemnation made him shy away from doing so. Instead, he wrote a summary of his philosophy entitled, *The Discourse on Method*. In *Discourse*, he limited himself to talking about method. He told the story of his own intellectual development, focusing on his doubts and his desire for certainty. His conclusion is that there is one thing that cannot be doubted: I think, therefore I am. Then, he built a method in which all knowledge is built upon, and tied to, that one foundational belief. He made a mathematical proof for God's existence and showed how God created the world to run without his existence. He did all of this in the space of 25 pages.

Newton(1642-1727)

Sir Isaac Newton, (born December 25, 1642 [January 4, 1643, New Style], Woolsthorpe, Lincolnshire, England—died March 20 [March 31], 1727, London) English physicist and mathematician, who was the culminating figure of the scientific revolution of the 17th century. In optics, his discovery of the composition of white light integrated the phenomena of colours into the science of light and laid the foundation for modern physical optics. In mechanics, his three laws of motion, the basic principles of modern physics, resulted in the formulation of the law of universal gravitation. In mathematics, he was the original discoverer of the infinitesimal calculus. Newton's *Philosophiae Naturalis Principia Mathematica* (*Mathematical Principles of Natural Philosophy*, 1687) was one of the most important single works in the history of modern science.

The Industrial Revolution

For millennia, humanity had used five simple machines: lever, wedge, wheel/axle, pulley, screw. Those machines had been refined, improved, and combined in various ways in order to produce new machines to control and direct motion, and to multiply force. However, many of these machines were awkward and inefficient. Then, all of a sudden in the aftermath of Galileo, Descartes, and Newton, men began reflecting upon why machines worked, and how to make them better. They made machines powered by coal and steam. They made new kinds of high-tolerance steel. And so forth.

John Locke(1632-1704)

John Locke was among the most famous philosophers and political theorists of the 17th century. He is often regarded as the founder of a school of thought known as British Empiricism, and he made foundational contributions to modern theories of limited, liberal government. He was also influential in the areas of theology, religious toleration, and educational theory. In his most important work, the *Essay Concerning Human Understanding*, Locke set out to offer an analysis of the human mind and its acquisition of knowledge. He offered an empiricist theory according to which we acquire ideas through our experience of the world. The mind is then able to examine, compare, and combine these ideas in numerous different ways. Knowledge consists of a special kind of relationship between different ideas. Locke's emphasis on the philosophical examination of the human mind as a preliminary to the philosophical investigation of the world

and its contents represented a new approach to philosophy, one which quickly gained a number of converts, especially in Great Britain. In addition to this broader project, the *Essay* contains a series of more focused discussions on important, and widely divergent, philosophical themes. In politics, Locke is best known as a proponent of limited government. He uses a theory of natural rights to argue that governments have obligations to their citizens, have only limited powers over their citizens, and can ultimately be overthrown by citizens under certain circumstances. He also provided powerful arguments in favor of religious toleration. This article attempts to give a broad overview of all key areas of Locke's thought.

Thomas Jefferson(1743-1826)

Thomas Jefferson (1743-1826), author of the Declaration of Independence and the third U.S. president, was a leading figure in America's early development. During the American Revolutionary War (1775-83), Jefferson served in the Virginia legislature and the Continental Congress and was governor of Virginia. He later served as U.S. minister to France and U.S. secretary of state, and was vice president under John Adams (1735-1826). Jefferson, who thought the national government should have a limited role in citizens' lives, was elected president in 1800. During his two terms in office (1801-1809), the U.S. purchased the Louisiana Territory and Lewis and Clark explored the vast new acquisition. Although Jefferson promoted individual liberty, he was also a slaveowner. After leaving office, he retired to his Virginia plantation, Monticello, and helped found the University of Virginia.

The American Declaration of Independence

In the spring of 1776, a Continental Congress assembled, with Thomas Jefferson as its thought leader. Jefferson drew upon Locke to write a Declaration of Independence. He began by drawing upon Locke's concept of dissolution: "When, in the course of human events, it becomes necessary for one people to dissolve the political bands which have connected them with one another...." The English government was furious and waged war, mostly with foreign mercenaries who were not only skilled soldiers, but unlikely to be persuaded by the colonies' logic. The Americans won the war, partly because its people fought hard, partly because France helped America. Because of the American Revolution, and the United States' continued success, Locke's doctrine has been dominant on the world stage.

Robespierre(1758-1794)

Maximilien François Marie Isidore de Robespierre (May 6, 1758 – July 28, 1794) was one of the primary leaders of the French Revolution. His supporters knew him as "the Incorruptible" because of his austere moral devotion to revolutionary political change. He was an influential member of the Committee of Public Safety and was instrumental in the period of the revolution commonly known as the Reign of Terror that ended with his arrest and execution in 1794. Politically, Robespierre was a disciple of Jean-Jacques Rousseau, among other Enlightenment *philosophes*, and a capable articulator of the beliefs of the left-wing bourgeoisie. He was described as

physically unimposing and immaculate in dress and personal manners. His name is associated with the Reign of Terror which claimed thousands of lives of "enemies of the Revolution."

Napoleon(1769-1821)

Napoleon Bonaparte (1769-1821), also known as Napoleon I, was a French military leader and emperor who conquered much of Europe in the early 19th century. Born on the island of Corsica, Napoleon rapidly rose through the ranks of the military during the French Revolution (1789-1799). After seizing political power in France in a 1799 coup d'état, he crowned himself emperor in 1804. Shrewd, ambitious and a skilled military strategist, Napoleon successfully waged war against various coalitions of European nations and expanded his empire. However, after a disastrous French invasion of Russia in 1812, Napoleon abdicated the throne two years later and was exiled to the island of Elba. In 1815, he briefly returned to power in his Hundred Days campaign. After a crushing defeat at the Battle of Waterloo, he abdicated once again and was exiled to the remote island of Saint Helena, where he died at 51.

Mozart(1756-1791)

Wolfgang Amadeus Mozart**,** in full Johann Chrysostom Wolfgang Amadeus Mozart, baptized as Johannes Chrysostomus Wolfgangus Theophilus Mozart (born January 27, 1756, Salzburg, archbishopric of Salzburg [Austria]—died December 5, 1791, Vienna) Austrian composer, widely recognized as one of the greatest composers in the history of Western music. With Haydn and Beethoven he brought to its height the achievement of the Viennese Classical school. Unlike any other composer in musical history, he wrote in all the musical genres of his day and excelled in every one. His taste, his command of form, and his range of expression have made him seem the most universal of all composers; yet, it may also be said that his music was written to accommodate the specific tastes of particular audiences.

Beethoven(1770-1827)

Ludwig van Beethoven, (baptized December 17, 1770, Bonn, archbishopric of Cologne [Germany]—died March 26, 1827, Vienna, Austria) German composer, the predominant musical figure in the transitional period between the Classical and Romantic eras.

Widely regarded as the greatest composer who ever lived, Ludwig van Beethoven dominates a period of musical history as no one else before or since. Rooted in the Classical traditions of Joseph Haydn and Mozart, his art reaches out to encompass the new spirit of humanism and incipient nationalism expressed in the works of Goethe and Friedrich von Schiller, his elder contemporaries in the world of literature; the stringently redefined moral imperatives of Kant; and the ideals of the French Revolution, with its passionate concern for the freedom and dignity of the individual. He revealed more vividly than any of his predecessors the power of music to convey a philosophy of life without the aid of a spoken text; and in certain of his compositions is to be found the strongest assertion of the human will in all music, if not in all art. Though not himself a Romantic, he became the fountainhead of much that characterized the work of the Romantics who followed him, especially in his ideal of program or illustrative music, which he

defined in connection with his *Sixth (Pastoral) Symphony* as "more an expression of emotion than painting." In musical form he was a considerable innovator, widening the scope of sonata, symphony, concerto, and quartet; while in the *Ninth Symphony* he combined the worlds of vocal and instrumental music in a manner never before attempted. His personal life was marked by a heroic struggle against encroaching deafness, and some of his most important works were composed during the last 10 years of his life when he was quite unable to hear. In an age that saw the decline of court and church patronage, he not only maintained himself from the sale and publication of his works but also was the first musician to receive a salary with no duties other than to compose how and when he felt inclined.

Goethe's Faust

The legend of Faust is as ancient as the legend of Don Juan. The historical Faust lived ~1540 as a magician who tricked and manipulated young men and women. In the stories told about him, Faust is always condemned to hell. Johann Wolfgang von Goethe (1749-1832) wrote *Faust* as his magnum opus. In the first part of *Faust*, Faust falls in love with a simple young virgin, Gretchen, who lives in a small town ruled despotically by traditional values. Faust woos her with jewels; she knows the excitement and the danger implied by his gift. She gives in to his advances. (The power of this story stems from the fact that for centuries the Western world had been wrestling with tradition, often trying to escape it. So Gretchen appears courageous and full of life.)

The Rise of the Labor Market

Since 1800, things have changed rapidly. Money is no longer invisible, but everywhere prominent. Most human beings work a job with a salary. Economics is one of the most important sciences in the world. In *The Wealth of Nations*, Adam Smith was the first to describe the labor market. He realized that labor is a commodity like any other, and that labor was for sale. Everything is for sale. The market, as he argued, served as an "invisible hand" ensuring economic efficiency. Efficiency, in turn, insured profit which in turn insured happiness. Other famous economists followed Smith: Robert Malthus, John Stuart Mill, John Maynard Keynes, etc.

Faustian Development

Goethe completed the second part of Faust 24 years after the first part, and just a few months before his death. In the first part, he had depicted the dying of an old world. In the second part, he depicts the birth of a new world. Goethe's *Faust* is bored with everything he has and always wants more. He ends up destroying innocent and helpless people to get what he wants,, but that is ok because you can't make something new without destroying something old. What's old is bad; what's new is good. The new world will be cruel to some, but it will be better for most people.

Karl Max(1818-1883)

As a university student, Karl Marx (1818-1883) joined a movement known as the Young Hegelians, who strongly criticized the political and cultural establishments of the day. He became a journalist, and the radical nature of his writings would eventually get him expelled by the governments of Germany, France and Belgium. In 1848, Marx and fellow German thinker Friedrich Engels

published "The Communist Manifesto," which introduced their concept of socialism as a natural result of the conflicts inherent in the capitalist system. Marx later moved to London, where he would live for the rest of his life. In 1867, he published the first volume of "Capital" (Das Kapital), in which he laid out his vision of capitalism and its inevitable tendencies toward self-destruction, and took part in a growing international workers' movement based on his revolutionary theories.

Marxism

Karl Max was an unhappy man who lived an unhappy life, but he produced a theory of history and a practical program for revolutionaries. This Marxism profoundly changed the world. He was influenced by Hegel, who metaphysicized everything, discerning in every concrete reality the working of some Idea or Universal Mind. But he modified Hegel. Instead of dialectic idealism, Marx promoted dialectic materialism which, he said, could help us know why things happen and to predict the future. Marx argued that there is a historical struggle between social and economic classes; this struggle would cease only when communism triumphed. When communism triumphed, the working class (proletariat) would no longer be dehumanized and impoverished by the wealthy (bourgeoisie). Marx died in 1883, but in 1917 Vladimir Lenin (1870-1924) led a Communist revolution in Russia.

Maxim(1840-1916)

Hiram Stevens Maxim (1840-1916) invented the modern machine gun. His father had dreamed of inventing a fully automatic machine gun, but it was the son who actually did it. He was born American, but moved to London to set up shot. His 1884 gun fired 11 rounds per second. But soon he and his brother invented better smokeless powders and better guns. They supplied Maxim guns to many nations in the world. The Maxim gun was the distinctive weapon of WWI.

Electricity

In the history of electricity, no single defining moment exists. The way we produce, distribute, install, and use electricity and the devices it powers is the culmination of nearly 300 years of research and development. Efforts to understand, capture, and tame electricity began in the 18th century. For the next 150 years, dozens of "natural scientists" in England, Europe, colonial America, and later the United States analyzed electricity in nature, but producing it outside of nature was another matter. That didn't happen on any large scale until the late 19th century. Setting the stage for widespread commercial use of electricity were international researchers engaged in pure scientific research, and entrepreneurial businessmen who made their own major discoveries or produced, marketed, and sold products based on others' ideas.

The End of Slavery

Matthew Brady learned photography and made it his mission to photograph battlefields and battles during the Civil War. His phots were horrifying. The Emancipation Proclamation (1863) did very little to free the 4 million slaves, because most of them were behind enemy battle lines. But it was abolished again in the 13th Amendment to the Constitution (1865), just after the war ended and Lincoln died. Van Doren argues that the abolition of slavery was the 19th century's greatest

achievement. He quotes Lincoln's Second Inaugural Address (March 15, 1865). Soon after the address, on April 9, General Robert E. Lee surrendered to General Ulysses S. Grant at Appomattox Court House, Virginia. The was over. Five days later, on April 14, John Wilkes Booth shot Lincoln at Ford's Theatre in Washington, DC.

Charles Darwin(1809-1882)

Charles Darwin**,** in full Charles Robert Darwin (born February 12, 1809, Shrewsbury, Shropshire, England—died April 19, 1882, Downe, Kent) English naturalist whose scientific theory of evolution by natural selection became the foundation of modern evolutionary studies. An affable country gentleman, Darwin at first shocked religious Victorian society by suggesting that animals and humans shared a common ancestry. However, his nonreligious biology appealed to the rising class of professional scientists, and by the time of his death evolutionary imagery had spread through all of science, literature, and politics. Darwin, himself an agnostic, was accorded the ultimate British accolade of burial in Westminster Abbey, London. Darwin formulated his bold theory in private in 1837–39, after returning from a voyage around the world aboard HMS *Beagle*, but it was not until two decades later that he finally gave it full public expression in *On the Origin of Species* (1859), a book that has deeply influenced modern Western society and thought.

Sigmund Freud(1856-1939)

Sigmund Freud**,** (born May 6, 1856, Freiberg, Moravia, Austrian Empire [now Příbor, Czech Republic]—died September 23, 1939, London, England) Austrian neurologist, founder of psychoanalysis. Freud may justly be called the most influential intellectual legislator of his age. His creation of psychoanalysis was at once a theory of the human psyche, a therapy for the relief of its ills, and an optic for the interpretation of culture and society. Despite repeated criticisms, attempted refutations, and qualifications of Freud's work, its spell remained powerful well after his death and in fields far removed from psychology as it is narrowly defined. If, as the American sociologist Philip Rieff once contended, "psychological man" replaced such earlier notions as political, religious, or economic man as the 20th century's dominant self-image, it is in no small measure due to the power of Freud's vision and the seeming inexhaustibility of the intellectual legacy he left behind.

Colonialism

Colonialism: in the 19th and early 20th century, European countries made arrangements in Africa and SE Asia so that they could control world markets. European industrialization outstripped its own population, and needed extra populations to consume the goods they produced. In exchange, Europe received coffee, rubber, oranges, etc. However, Germany felt left out and wanted to join the game. Germany was emerging already as perhaps the most powerful nation-state in the world. And yet, it had come to the game too late and there was nothing left to win. The only way Germany could change the game was to disrupt the balance of power in Europe. Between 1889-1914, several small wars broke out in African and Asia, each of them being wars of position.

The Boer War(1899-1902)

In South Africa, Dutch settlers (the Boers) warned the British that they would not accept English rule there is southern Africa. The Boers fought the better war but eventually were overpowered by Lord Kitchener. Kitchener won with a scorched-earth policy, burning the farms of Africans and Boers, and herding 100,000 adults and children into camps. More than 20,000 died. The Brits considered South Africa their own.

World War I(1914-1918)

In late June 1914, Archduke Franz Ferdinand of Austria was assassinated by a Serbian nationalist in Sarajevo, Bosnia. An escalation of threats and mobilization orders followed the incident, leading by mid-August to the outbreak of World War I, which pitted Germany, Austria-Hungary and the Ottoman Empire (the so-called Central Powers) against Great Britain, France, Russia, Italy and Japan (the Allied Powers). The Allies were joined after 1917 by the United States. The four years of the Great War–as it was then known–saw unprecedented levels of carnage and destruction, thanks to grueling trench warfare and the introduction of modern weaponry such as machine guns, tanks and chemical weapons. By the time World War I ended in the defeat of the Central Powers in November 1918, more than 9 million soldiers had been killed and 21 million more wounded.

World War II(1939-1945)

The instability created in Europe by the First World War (1914-18) set the stage for another international conflict–World War II–which broke out two decades later and would prove even more devastating. Rising to power in an economically and politically unstable Germany, Adolf Hitler and his National Socialist (Nazi Party) rearmed the nation and signed strategic treaties with Italy and Japan to further his ambitions of world domination. Hitler's invasion of Poland in September 1939 drove Great Britain and France to declare war on Germany, and World War II had begun. Over the next six years, the conflict would take more lives and destroy more land and property around the globe than any previous war. Among the estimated 45-60 million people killed were 6 million Jews murdered in Nazi concentration camps as part of Hitler's diabolical "Final Solution," now known as the Holocaust.

Communism

Communists strove for a noble (but flawed ideal) but strove for it in a very ignoble manner. They were better in theory than they were in practice. The Communists killed millions of kulaks (independent farmers) who wanted to retain their own land so they could sell their produce in a free market, and millions of peasants, Christians, and Muslims, who transgressed their Communist ideals. In practice, Communism has been a brutal tyranny of a small minority over the vast majority.

Totalitarianism

At least the Communists were aiming for justice. But totalitarians are all about glory and honor and power. (He goes on an excursus about how America has abused its power in nasty ways.) Totalitarians take away the power of society's mediating institutions so that individuals are left naked and alone before the government's power. Totalitarian regimes neuter corporations,

churches, clubs, and charitable organizations. Italy and Germany are famous for having done so. Hitler promised Germany that he'd make them great if they'd give total control over all things to him and to the state. Desperate times, he said, call for desperate measures. So Hitler centralized everything, made public operations more efficient, and then made the nation of Germany itself into a sword. Mussolini and Italy did likewise, and even did it a few years before Hitler did.

United Nation

United Nations (UN), maintaining peace and security, other important objectives include developing friendly relations among countries based on respect for the principles of equal rights and self-determination of peoples; achieving worldwide cooperation to solve international economic, social, cultural, and humanitarian problems; respecting and promoting human rights; and serving as a centre where countries can coordinate their actions and activities toward these various ends. The UN formed a continuum with the League of Nations in general purpose, structure, and functions; many of the UN's principal organs and related agencies were adopted from similar structures established earlier in the century. In some respects, however, the UN constituted a very different organization, especially with regard to its objective of maintaining international peace and security and its commitment to economic and social development. Similar Topics Changes in the nature of international relations resulted in modifications in the responsibilities of the UN and its decision-making apparatus. Cold War tensions between the United States and the Soviet Union deeply affected the UN's security functions during its first 45 years. Extensive post-World War II decolonization in Africa, Asia, and the Middle East increased the volume and nature of political, economic, and social issues that confronted the organization. The Cold War's end in 1991 brought renewed attention and appeals to the UN. Amid an increasingly volatile geopolitical climate, there were new challenges to established practices and functions, especially in the areas of conflict resolution and humanitarian assistance. At the beginning of the 21st century, the UN and its programs and affiliated agencies struggled to address humanitarian crises and civil wars, unprecedented refugee flows, the devastation caused by the spread of AIDS, global financial disruptions, international terrorism, and the disparities in wealth between the world's richest and poorest peoples.

Atomic Bomb

When Hitler rose to power in Germany, Einstein fled to the US. He continued to work on General Theory. In 1939, he learned that two German physicists had split the uranium atom. He was aware of the implications. He sat down to write a letter to President Roosevelt, explaining the magnitude of what would happen if Germany came into possession of a weapon based on fission of the uranium atom. Unknown to Einstein, the US had already initiated the Manhattan Project which had as its goal the creation of an atom bomb. By July 16, 1945, they were able to test a bomb outside of Albuquerque, New Mexico. Its explosion was the equivalent of 20,000 tons of TNT. Hiroshima was bombed on August 6, only three weeks later.

DNA

And yet, Mendel had not discovered the mechanism that makes heredity work. That discovery was left to an American, James D. Watson (1928-) and an Englishman, Francis Crick (1916-), who at Cambridge University in 1953 discovered the structure of the DNA molecule. The DNA molecule is a double helix and can be viewed with the aid of an electron microscope. It is two strings made of nucleotides. There are four types of nucleotide. Each nucleotide in one string corresponds to nucleotides in the other strings. The discovered that a gene is a portion of a DNA molecule, a substring with hundreds or thousands of nucleotides, that determines a given trait. Aristotle was right. There is such a thing as catness. But what he did not know is that catness is a quality that resides in the nucleus of every cell of every cat. Substrings have subtle differences that issue forth in differences among individual cats. Substrings can be faulty, which causes diseases.

Big Bang Theory

In 1929, American astronomer Edwin Hubble demonstrated the expansion of the universe by measuring the red shifts in starlight from distant galaxies. In 1965, two astronomers, Robert Wilson and Arno Penzias, discovered cosmic microwave background radiation, and argued that is was the cooled aftermath of the Big Bang explosion. Their proofs convinced most scientists that some form of Big Bang cosmology must be true. The big point of the theory is that the universe is expanding outward from a point of infinite density. There is quite a bit of evidence for a Big Bang, including the fact that all observable things are moving away from us, and the further away the move the faster they move. The Big Bang theory is premised on two assumptions: First, it assumes that Einstein's theory of general relativity holds for all matter at all times. Second, it assumes that the universe has neither a center nor an edge.

Green Rebellion

The Green movement urges us not to view Earth and its atmosphere as indestructible, and not to pollute it.

Alan Turing(1912-1954)

Alan Turing (1912-1954) set forth to answer the question of whether digital computing is inherently inaccurate. He answered it while he was still a student. In 1935, he wrote a brilliant paper, "On Computable Numbers." In 1937, he published it, showing that a universal machine could be designed to do any type of problem solving. Such machines are called Turing machines. Also, it showed that a digital computer could do anything an analog computer could do. Therefore Turing is the founder not only of modern digital computing, but the whole field of artificial intelligence. In the mid-twentieth century, digital computers came into use. In the 1960s, they were still huge, slow, and expensive. By the 1970s, computers used integrated circuits and computer chips. By the 1980s, computers were much smaller and the density of the chips was increased. There were personal computers and supercomputers. Now, in the 21st century, we have experienced the proliferation of all sorts of computers.

Computer

Computers truly came into their own as great inventions in the last two decades of the 20th century. But their history stretches back more than 2500 years to the abacus: a simple calculator made from beads and wires, which is still used in some parts of the world today. The difference between an ancient abacus and a modern computer seems vast, but the principle—making repeated calculations more quickly than the human brain—is exactly the same.

Triumphs of Medicine

One of the greatest advances in knowledge has been the conquest of infectious disease. During the first half of the 20th century, many children died from whooping cough, diphtheria, typhus and typhoid fever, polio, tuberculosis, pneumonia, smallpox, and other diseases. But scientists invented vaccines, antibiotics, antivirals, etc. Researchers and doctors also made breakthroughs in organ transplants and other amazing surgeries such as pacemakers. In the 21st century, new diseases appeared (such as HIV) but researchers are working to finding cures or ways to curb the diseases.

Drug Cultures

Almost all medicines and drugs that we use today were discovered after WWII. Perhaps the most important discovery of all was penicillin. Alexander Fleming (1881-1955) was a Scottish-born medical researcher who investigated antibacterial substances that could be used on human tissues and would not be toxic. Up to that point, the antibacterial poisons that had been used, such as carbolic acid, were likely to kill the patient rather than heal him. In 1928, Fleming noticed that a bit of mold had somehow found its way onto one of his slides. It was the sort of mold that grows on bread. Interesting there was a bacteria-free zone encircling the mold. He named this mold "penicillin" and it was used to treat pneumonia, strep, syphilis, gonorrhea, and other diseases.

The AIDS Challenge

In 1979, we discovered a new disease, which is now called HIV, and which turns into AIDS. This virus attacks the T-lymphocytes which are important to the immune system. When a person reaches the later stages of AIDS, their immune system has difficulty fighting off even the most ordinary of sicknesses.