

GLOBAL 10



Chapter 22: Enlightenment and Revolution 1550-1789

Section 1: The Scientific Revolution
Section 2: The Enlightenment in Europe
Section 3: The Enlightenment Spreads
Section 4: The American Revolution

Newton Explains Law of Gravity

- Isaac Newton (Eng)
- develops Single theory of Motion
- Law of gravity linked motion in heavens with motion on Earth
- Every object in the universe attracts every other object
- Degree of attraction depends on the mass of the objects + the distance between them
- 1687 "The Mathematical Principles of Natural Philosophy" described universe as Giant Clock with its parts all working together perfectly
- God was clock maker that created orderly UNIVERSE

Bacon + Descartes

- Francis Bacon (Eng) urged experimentation or Empiricism
- René Descartes (France) developed analytical geometry which linked algebra + geometry for Scientific Method
- He relied in math + logic + all should be doubted until proven by logic. The only thing certain was he existed "I think Therefore I am"

The Scientific Method

- A Logical procedure for gathering + testing ideas
- STARTS with → Problem Then:
 - Question
 - Observation
 - Hypothesis
 - Experiment + Data

Robert Boyle = Boyle's LawThe Roots of Modern Science

- Ed Jenner invents Vaccine for Polio
 - Galen (Greek) defines Human Anatomy until proven wrong By Vesalius (Flemish)
 - Anders Celsius (Swed) Makes Another Scale w/ Mercury to Measure Temp. - Freeze at 0° Challenged long held ideas
 - Gabriel Fahrenheit (Germ) makes 1st thermometer that used mercury - Freeze at 32° In past Refer to Greek or Roman authors + The Bible
 - 1643 Evangelista Torricelli develops 1st mercury barometer (Atmospheric pressure) New Thinkers observe for themselves Medieval View = EARTH Centered View of the Universe or geocentric Theory from Aristotle (Greek) + Ptolemy (Greek astronomer) Also Supported by the Bible
 - Zacharias Janssen (Dutch) 1590 makes First Microscope
 - Anton van Leeuwenhoek 1670's (DUTCH) discovers Red Blood Cells
- Scientific Revolution Spreads

THE
Scientific
REVOLUTIONGalileo's Conflict with Church

- His findings scared Protestant + Catholics
- Fear other Church Teachings would be disputed
- 1616 Church warn Galileo but he printed "Dialogue Concerning the Two Chief World Systems" that supported Copernicus Theory + jailed Galileo
- STANDS Trial before the Inquisition (1633) + Under threat of Torture signs Confession that denied Copernicus Theory
- He lived under house arrest in Florence until his death (1642)

Galileo's Discoveries

- Italian Scientist who built telescope + discovers laws of motion + published (1610) "STARRY Messenger" = Jupiter had 4 moons + Sun had dark spots, rough surface on the Moon

The Heliocentric Theory or a SUN Centered Universe according to COPERNICUS (Polish Cleric) publish (1543) his findings in "On the Revolutions of the Heavenly Bodies" just before his death because he feared

Persecution From Church Over 150 yrs later

Tycho BRAHE + Johannes KEPLER Confirm Theory w/ mathematical laws Found Earth Revolved IN Elliptical Orbits

Women + the Enlightenment

- Philosophes took traditional view toward women.
- Very little respect for women + educating them
- Mary Astell "A Serious Proposal to the Ladies" 1694 address lack of education for women
- Questioned unequal relationship between men + women in marriage
- 1792 Mary Wollstonecraft wrote "A Vindication of the Rights of Women"
- Argues women need education to become virtuous + useful
- Urged politics + medical career for women.
- Emilie du Chatelet = Math + physicist

BECCARIA + Criminal Justice

- Italian Philosophe believed laws were to preserve social order NOT to avenge crimes
- Criticized abuses of justice such as torture, irregular trials + cruelty
- Believed in speedy trial
- Punishment = Crime only
- Abolish Capital punishment
- Govt should seek greatest good for greatest #.
- Separation of powers + checks + balances

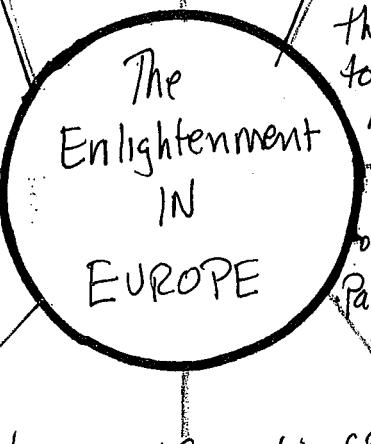
Rousseau: Champion of Freedom

- Committed to individual freedom
- Did not believe reason improved life
- Believed civilization corrupted people's natural goodness
- Believed only good govt was by "general will" of society
- People agree to give up some freedoms for common good
- 1762 "The Social Contract" differs from Hobbes + Locke

2 Views on Govt (Age of Reason)

- Govt was for individual's economic benefit
 - Adam Smith (Eng) Extends individual thinking into economic + created idea of capitalism
 - Promote religious tolerance + stress the individual = individualism
 - More secular outlook + questioning of the church - look to yourself
 - Belief in progress inspired by science + explains mysteries
 - These theories inspired American and French Revolutions
 - Although they encouraged reform, they were not active revolutionaries.
- Legacy

- Hobbes's Social Contract
- Wrote "Leviathan" 1651
- He was influenced by English Civil War horrors
- Saw all humans as evil + need to control w/ strong govt
- Need power of Leviathan (sea monster) for law + order
- Social Contract demanded total control of people
- John Locke had more positive view of human nature + believed in natural rights + condemns absolute king
- He believes in self-govt + consent of the people + people had a right to break social contract when natural rights were denied.



The Enlightenment
IN
EUROPE

Montesquieu + Separation of Powers

- Devoted to study of political liberty
- Believed Britain was best governed + balanced
- Adminined their separation of powers between 3 branches
- He oversimplified British system, separation not a reality
- 1748 wrote "On the Spirit of Laws" There should be check to power
- Separation of powers + checks + balances used in U.S. Constitution

The Philosophes + Reason

- Enlightenment peaks in France 1700's
- Paris = meeting place for politics + ideas
- PHILOSOPHES = social critics of this era
- Belief = reason applied to all aspects of life

① Reason: logical thinking = TRUTH

② Nature: Natural was good/reasonable

③ Happiness: find joy in present

④ Progress: Stress Society + Humans Could Improve

⑤ Liberty: Found in Bill of Rights + Glorious Revolution

⑥ Separation of powers + checks + balances

Voltaire Combats Intolerance

- Francois Marie Arouet = pen name
- Publish 70 books, + used satire
- Targets clergy + aristocracy, govt.
- After 2nd jail term, exiled to England
- Supported freedom of speech + religion

Catherine the Great

- 1762 to 176 Russian Ruler Well-educated + Reader of philosophes such as Voltaire
- 1767 forms Commission to Review Russian laws + use Reforms by Montesquieu + Beccaria
- She wanted Religious toleration, Abolish Torture, Capital punishment but Commission accomplished none.
- 1773 Uprising by Serfs changed her reform ideas for Serfs, + gave Nobles Absolute power over SERFS.

She helped make Russia an International Power
She was most Admired

- Further Partitions in 1793 + 1795 + denied Poland Independence for Next 100 yrs

- 1772 FIRST Partition of Poland = All 3 Nations take a Piece of Poland

Expands East to Poland competing with Prussia + Austria and won it

- 1700's Fought for a port on Baltic Sea against Ottomans

Catherine Expands Russia

The

Enlightenment

SPREADS

Enlightenment + MonarchyJOSEPH II

- 1780-1790 = Austrian Ruler who Succeeded Maria Theresa and Most Radical Reformer of Despots
- Introduced Legal Reforms, Freedom of Press, Religious Tolerance + Abolished Serfdom. + ordered Peasants be paid for their labor w/ cash. Nobles resisted change his reforms ended with his death.

Voltaire believed best form of govt was Monarchy respecting people's Rights.
Known as Enlightened Despots (Absolute Rulers)
They had no intention of giving up Power but motivated by ① Make their Country stronger + ② their rule more effective

FREDERICK The Great

- 1740-1786 Prussian King Who Called himself "First Servant of State" wanted to Serve + strengthen his Country. He appealed to Philosophes
- Reformed Courts, Abolishes Torture, granted Religious freedoms, Reduced Censorship, Improved Education
- Believed Serfdom was wrong but did not end it because Nobles did not support it.

A World of Ideas

Many philosophes were jailed or exiled

Paris = Cultural + Intellectual Capital of Europe

Salons = Social gatherings to discuss ideas. In 1751 D

Diderot's Encyclopedia Was Large Set of books w/ leading Scholars' Contributing Articles + Essays

Financed by Marie-Therese Geoffrin Angered both French govt. + Church

Censors ban the Book = IT Spread Revolt

Both Salons + Encyclopedia helped spread Enlightenment along w/ newspapers, political songs + pamphlets

Ideas about govt + Equality especially spread to growing Middle Class

NEW ARTISTIC STYLES

NeoClassical Style Emerges 1600's + 1700's Called BAROQUE OR a grand, ORNATE design especially seen at Versailles

Borrowed Ideas from Rome + Greece Changes in Music = BACH (Germany)

HanDEL (ENG) wrote dramatic organ + Choral music

Haydn, Mozart, + Beethoven add lighter, more elegant style called Classical

Changes in Literature

Novels OR lengthy works of prose fiction w/ Carefully Crafted plots, Suspense + Character Development were popular with Middle Class + Included Women Writers

Pamela by Samuel Richardson = 1st Eng Novel
Tom Jones by Henry Fielding = Orphan Story

Enlightenment Influences Govt.

- MONTESQUIEU believed in Separation of power and Checks + Balances
- VOLTAIRE believed in Free Speech + Religious Toleration which influenced Bill of Rights.
- BECCARIA believed accused have Rights = No Torture, a speedy trial, jury, Due Process
- ROUSSEAU believed in Direct Democracy
- LOCKE believed Govt's power comes from the people who have natural rights
 - Right to Rebel + break Social Contract.

Federalism

- Solution to Failure of Art. of Confederation
- Idea of Shared Powers to avoid Tyrant.
- Separation of Powers between State, Local + Federal govts
- AND: Branches of Federal Govt = Legislative, Judicial + Executive.
- Checks + Balances limits Power of each
- Bill of Rights protects Individual Rights.

Americans Create Republic

- Republic = Representative govt.
- 1781 America's 1st govt was ARTICLES of Confederation in which Citizens rule through Elected Representatives
- But fails because it is Weak National govt.
 - Lt. power to tax, declare WAR, Treaties + Trade + Coin

Britain + its Colonies

- It put into effect Enlightenment ideas using Reason + Reform
- Antifederalists or opponents wanted Bill of Rights to Protect Individuals from govt.
- Papers Argue Federalism provides Better Balance between Nati + States
- Federalists or Supporters of Constitution use Federalist Papers

Bill of RightsTHE AMERICAN REVOLUTION

- New Sense of Identity grows in American Colonies = 150 yrs of Colonial Rule Brought Resentment
- 13 colonies with Self-govts. + a great deal of Independence
- But Part of Eco System = Mercantilism or Complete Economic Control by England
- 1651 Parliament passes Navigation Act or FIRST of a Series of trade laws Restricting Economic activities of Colonists
- Plus Colonists payed high taxes

AMERICANS WIN Independence

- Causes for growing Tensions
- ① FRENCH + Indian War Debt was the responsibility of Colonist → 1763
- ② STAMP Act = Tax on all documents which brought Protest = No Tax w/o Representation
- ③ 1773 Boston Tea Party was protest against Tax on Tea
- ④ 1774 1st Continental Congress voted to PROTEST
- ⑤ 1775 Lexington + Concord
- ⑥ 2nd Continental Congress voted to raise army

Influence of Enlightenment

- Colonist felt justified because Social Contract was Broken
- Thomas Jefferson's Dec of Independence was Influenced by John Locke
- King's abuses justified Call for Independence