

**CALIFORNIA STATE UNIVERSITY
FULLERTON
OSHER LIFELONG LEARNING
INSTITUTE**

**“The World, its Resources, and the
Humankind”**

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WHY THIS NEW COURSE?

- A life-time preoccupation about world resources and their impact on human development
- Human settlements and life depend on **resources** ⇔ economy of life ⇔ social life ⇔ politics ⇔ civilization ⇔ culture
- The world is a complex physical-chemical and biological phenomenon in continuous evolution

WHAT DO WE NEED FOR THIS COURSE?

1. Some knowledge of geography
2. Some knowledge of history
3. Some knowledge of how things work and human relationships
4. Abandon any bias. Keep an open mind
5. Willingness to acquire new knowledge

Bibliography is provided

WHAT I WILL AND WHAT I WILL NOT DO

I will answer questions

I will avoid giving medical consultations

I will regret absences

I advice not to miss lectures because of their
interconnection and

Lecture topics may extend on more than one session

I will avoid talking about religion

I will avoid talking about politics

**My aim is to stimulate wonder, thought, and
knowledge**

“KNOWLEDGE IS POWER”

SOCRATES (469–399 BCE)

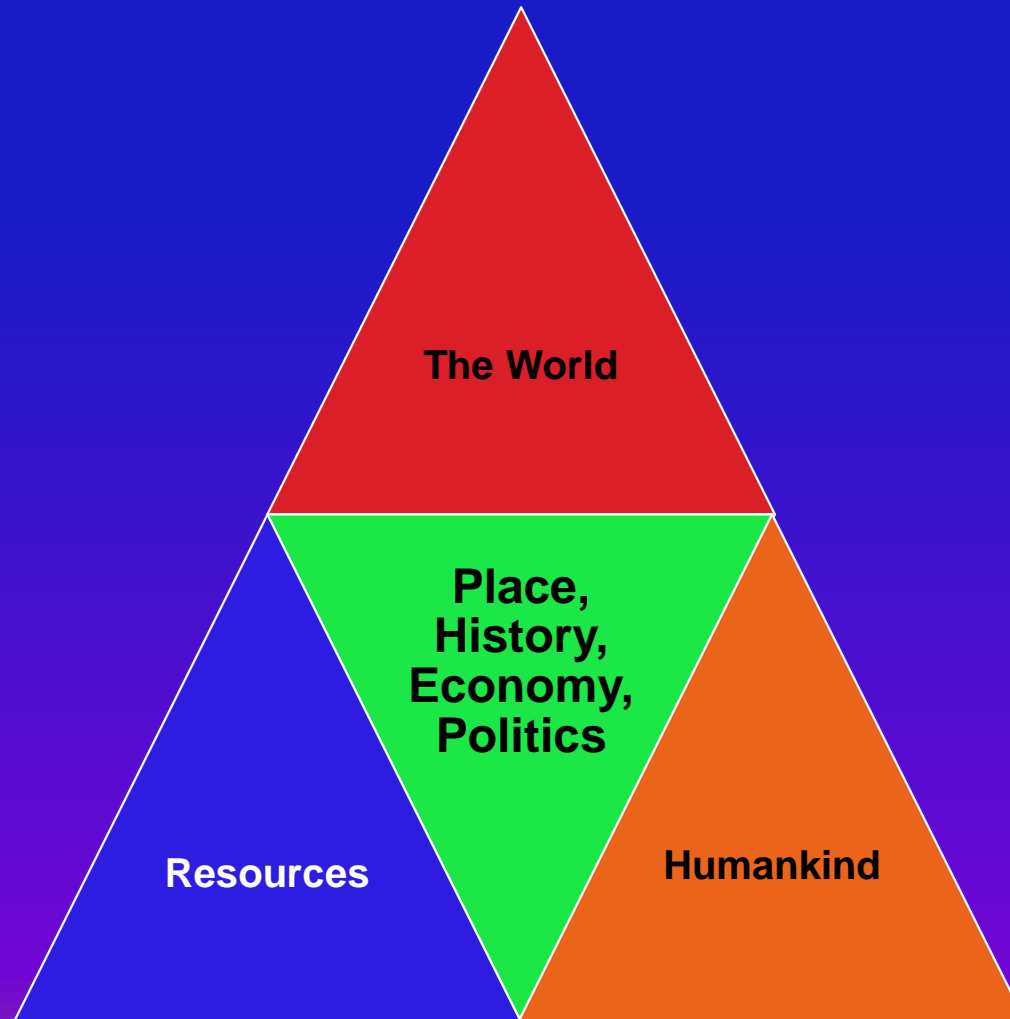
DISCLAIMER

Nothing to declare

Source of data:

- Personal files, notes, and photos
- Textbooks, journals
- Internet

The World, its Resources, and Humankind. Topics of Study



PLAN OF STUDY

Eight sessions

Resources to be reviewed:

- Air
- Water
- Food
- Metals and Minerals
- Construction materials
- Energy: Renewable: Solar, water, wind, and nuclear
- Energy: Coal, oil, and natural gas

Comments on:

- Geography
- History
- Economy
- Politics

LECTURE # 1

HUMANKIND

Key Events/Situations in Human Development

Serendipity

Observation ⇒ Action and Reaction

Chance vs. Need (?)

Contagious diseases and other calamities

⇒ **Massive destructions**

⇒ **Belief in the Supernatural**

Survival

Reconstruction

Communication (oral and written)

MILESTONES OF HUMANKIND

Homo erectus – 1,200,000 - 200,000 BC

Fears cold, hunger, thunder, lightning, wild animals

Dies of exposure, accidents, infections

Lives in caves about 20-40 years. Procreates many children

Invents the fire

Is a hunter and gatherer. ***Invents fishing***

Doesn't have an articulate language

Eats berries, fruits, roots, raw meat

Is not very mobile, does not go far from his place

Fire – Man's Worst Enemy



***Homo erectus* (reconstruction)**
Earliest Human who Controlled the Fire
1.7 – 0.2 Million Years ago - Kenya



“Modern Humans”

Anatomically, modern humans first appear in the fossil record in Africa about 195,000 years ago.

Studies of molecular biology give evidence that the approximate time of divergence from the common ancestor of all modern human populations was 200,000 years ago.

Homo Sapiens

The Only Survivor From *Homo Erectus*

Presumed Characteristics

- Adaptability
- Endurance
- Perseverance
- Curiosity
- Inquisitiveness
- Observation
- Imagination
- Inventiveness
- Dexterity
- Constructiveness
- Pragmatism
- Artistic imagination

Homo Sapiens vs. Mankind

Helpful to his mates but also ignoring the needs of his neighbors

Envious, greedy, and violent

Evolving and reinventing self to master new conditions of life

Ancient foragers were the most knowledgeable and skillful people in history

Self-reliant

**A Lot of What Happened in the Past Was
Not Understanding Why or Where We Were**

A Recordless Human Society

The Cognitive Revolution ~ 70,000 years ago

Observation ⇒ Imagination

Self-questions: “What if?” “Why not?” “Let’s try it”

Thinks outside the box



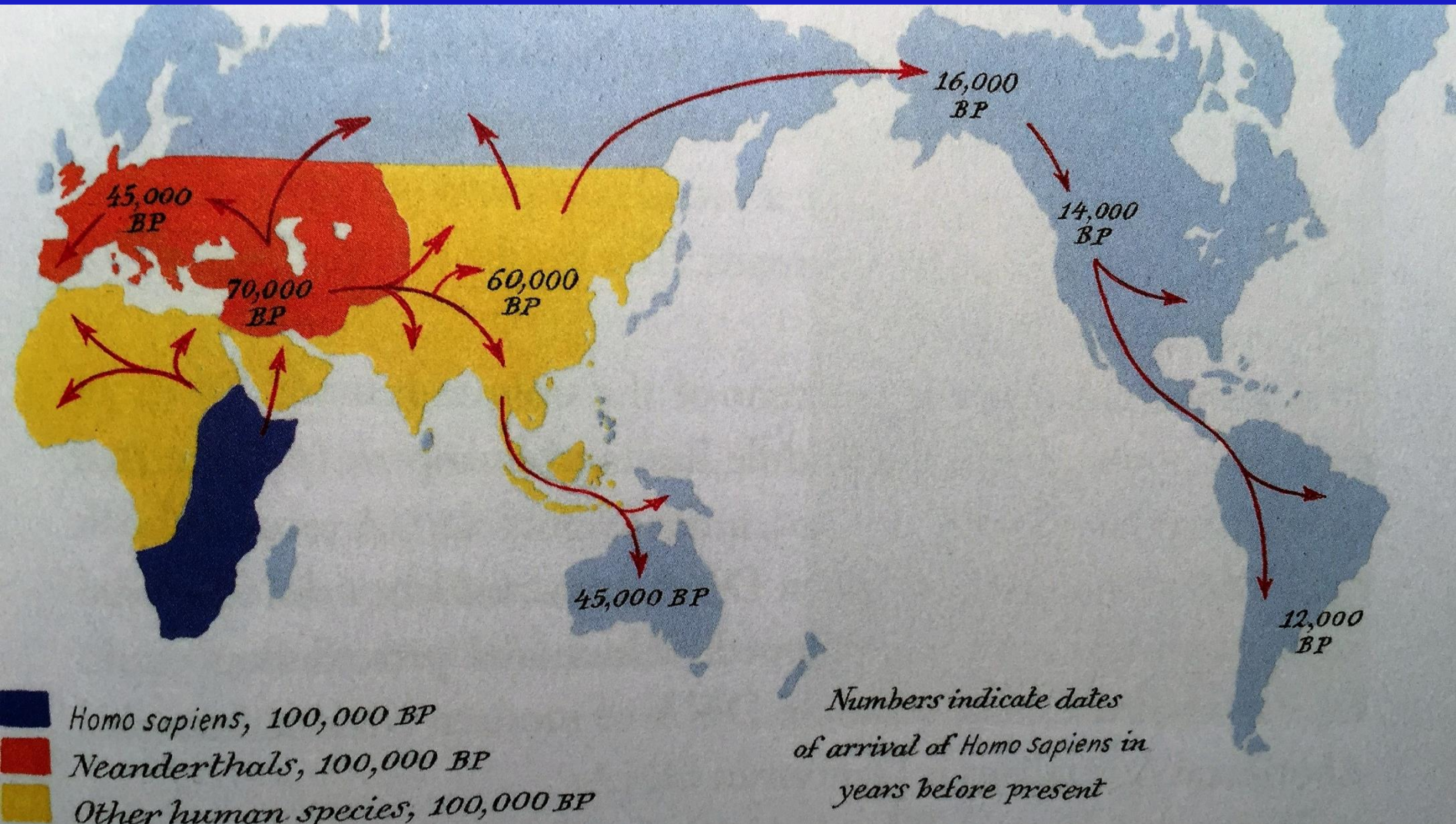
Breaks established modules

Fiction ⇒ Myths ⇒ **New Concepts (not physical)**

⇒ Abstract thought ⇒ **Societal Evolution**

(customs, religions, languages, manufacturing, finances,
human rights, political ideology, etc.)

Homo sapiens Conquers the World



FROM Y. N. HARARI "SAPIENS, A BRIEF HISTORY OF HUMANKIND"

Lion-man (Löwenmensch) ~35,000-40,000 years ago – Stadel cave, Germany, ivory ~12" x 3" x 3"



**Venus of Schelklingen (Germany) – Upper
Paleolithic ~35,000 - 40,000 Years
Mammoth ivory tusk**



**Human Art ~30,000 Years Ago
Chauvet-Pont-d'Arc Cave, SE France**



A Venus – Clay figurine Before 25,000 BC



Altamira, Spain ca. 18,500 Years ago



Art of 17,000 Years ago Lascaux Cave, SE France



**The oldest depiction of human sex ~12,000 BCE
The “Ain Sakhri Lovers” - Natufian culture - Betlehem
(British Museum)**



History of Mankind and the Agricultural revolution



Mankind and its Environment

1. Damage people inadvertently inflict on their environment (deforestation)
2. Climate change
3. Hostile neighbors (Roman empire and the Barbarian invasions)
4. Decreased support by friendly neighbors (changing economic opportunities)
5. Society's response to its problems

Mankind and its Environment

Failures of Group Decision-making:

1. Group's failure to anticipate a problem;
2. Group's failure to perceive it (false analogies:
French generals and the Maginot line in WW2);
3. Group's failure to solve the problem;
4. Collapse of the society

Governments and Politicians

Leaders may use the “90-day focus,” ignoring the later effects because the later bad effects affect citizens who cannot vote today.

Politicians think of the next election. Statesmen think of the next generation.

Tacitus (Roman historian 56-120 AD): *“Chief among the forces affecting political folly is the lust for power, the most fragrant of all passions”.*

Citi-States and Civilizations

- Agriculture
- Central government ⇔ Cities
- Social structure
- Economy
- Language
- Writing
- Religion
- Arts

Major Formative Events in the Neolithic Era (Mesopotamia, Nile's banks, Indus River valley, and major rivers of China)

By 10,000 BC humans colonized all ice-free parts of the globe.

Future of humankind was molded by:

- **Domestication** of animals and plants
- **Agriculture** - developed c. 8000 - 5000 BC. ⇨ Man settled becoming a farmer

Oldest continuously inhabited towns: Jericho, Byblos (wells)

- The **wheel** - invented – 6.500 – 4.500 BC in Mesopotamia ⇨
 - facilitated transportation
- **Navigation** – from rivers to the sea

Major Formative Events in the Neolithic Era (cont'd)

- **Agriculture** and the **wheel** allowed the greatest human progress
- Accounting became necessary
- **Writing invented** - 3500 BC ⇒ Accounting
⇒ Communication
- Grains in excess of the need
- Social classes ensued ⇒ **“Haves”** and **“Have-nots”**
- **Humans are in 3 classes: nobility, citizens, and slaves**
- Creation of **city-states** and military for defense
- **“Have nots”** ⇒ revolts or **“Outsiders”** ⇒ invasions
- ***Destruction and rebuilding became the norm***

The World and its Mankind

10,000 BCE - **5-8 Mil. hunters-gatherers** (foragers)

1st cent. CE - 1-2 Mil. foragers (Australia, Africa)
and **250 Mil. farmers**

1500 CE - 500 Mil. mostly farmers occupying 2% of the
Earth

The Hunter-Gatherer (Forager) and the Agricultural Revolution

Imagination and Inspiration = hallmarks of the forager

The forager was physically well developed, sturdy, muscular, flexible, alert, highly intelligent, and knowledgeable of the surroundings, with a keen memory.

Was the man better after the agricultural revolution?

As a farmer, he became less alert, less knowledgeable of the surroundings, more sedentary, and dull.

His food was more assured and plenty.

The Wheel (Mesopotamia, 6,500 – 4,500 BC)



Ceramic Vessel from Mesopotamia 4,500 – 4,000 BC



Major Formative Events in the Neolithic Era

The NAVIGATION

On rivers and on seas

Exchange of goods, ideas, inventions ⇔

Development of new civilizations and conquest

**1. Resources ⇔ Trade ⇔ Dominance ⇔
Conflicts**

**2. Humankind evolution – Actions and
Reactions**

Dugout Canoe of Ancient Americans



First Sailing Ship on the Indian Ocean



First Egyptian Ship 1,420 BC



Major Cultures in the Neolithic Era

The “Cradle of Civilization”

5000 - 1750 BC – Sumer (Mesopotamia)

3300 - 1300 BC - Harappa civilization (India-Pakistan)

3500 - 1800 BC - Norte Chico Civilization (S. America)

3100 BC - 300 CE - Egypt Kingdom

2700 - 1200 BC - Minoan (Knossos, Crete) - First in Europe

2500 - 612 BC - Assyria empire (Mesopotamia)

2334 - 2083 BC - Akkadian Empire (Mesopotamia)

3300 – 700 BC - The Bronze Age

Sumer Civilization c.5,000 – 1,750 BC

Major inventions:

The **wheel**

Writing Pictograms ⇒ **Cuneiform script**

The **sail boat**

Agricultural processes such as **irrigation**

The concept of **the city**

Trade

Cuneiform Writing

Sumerian (Mesopotamia) 3,500-3,000 BC



Major Cultures in the Neolithic Era

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Norte Chico Civilization 3,500 – 1,800 BC

North-central coast of Peru. **Oldest known civilization in the Americas**

Contemporaneous with the Egyptian pyramids

Located and developing at the confluence of 3 rivers

Founded on **seafood** and **maritime resources**

Growth of cotton ⇔ Textile technology

Economy of maritime subsistence

Maize - staple presence

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Harappa Civilization (3,300 – 1,300 BC)

Indus valley: So. Pakistan, NW India, Afghanistan



Harappa Civilization 3,300 – 1,300 BC

~1000 settlements in the Ghaggar-Hakr river valley. Mohenjo-daro a city in Pakistan

Brick-built houses. Conventional city plan

Script



Harappa Civilization (3,300 – 1,300 BC)

Mohenjo-daro

(Excavated ruins in Sindh, Pakistan)



Contemporaneous with the Civilizations of Ancient Egypt, Mesopotamia, Minoa (Crete), and Norte Chico

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3100 BC - Egypt

EGYPT

~3100 BC - Make **papyrus** from reed plants

~3000 BC – Major agriculture along the Nile Valley

~2650 - 2500 BC - Built Pyramids - by slaves

Know to **Cut stones** precisely

Know astronomy

Navigators on the Nile and on the Mediterranean
Sea



Egyptian Agriculture c. 3,000 BC



Domestication of Wheat and Cattle Egypt 2000 BC

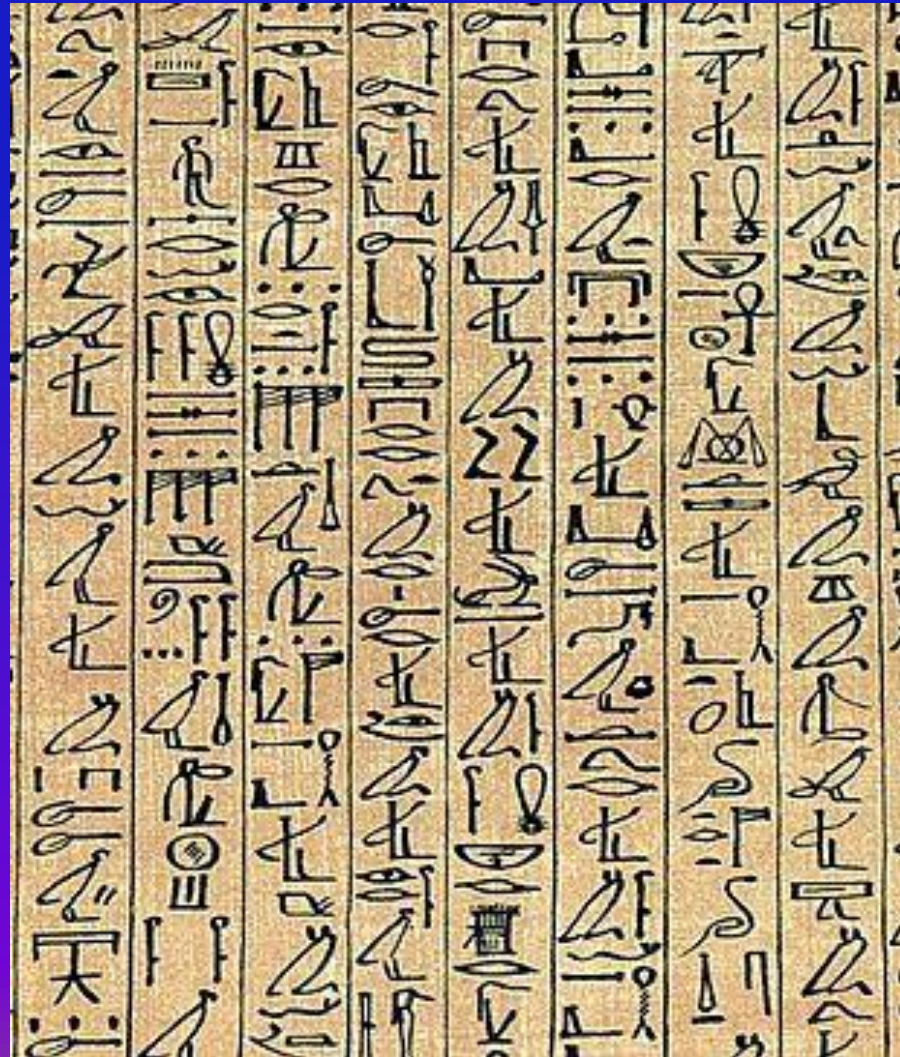


Domestication of Animals in Egypt 2,200 BC



Egyptian Hieroglyphs

3,300 BC



The Scribe – Egypt – 2,600 BC

The Louvre Museum



First Egyptian Ship 1,420 BC



Bust of Nefertiti (c.1,370 – 1,330 BC)

Neues Museum, Berlin



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2700-1200 BC - Minoan (Knossos, Crete) = First in Europe

2,700-1,200 BC - The Minoan Civilization



A Minoan **copper ingot**

The Snake Priestess



**2,700-1,200 BC Minoan (Knossos, Crete)
First In Europe
The Palace of Minos, king of Minoan Empire**



Minoan Fresco Showing the Fleet and Settlements

There were 90 Cities in Crete



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2500 - 612 BC - Assyria empire in Mesopotamia

The Fertile Crescent in Mesopotamia



Mesopotamia (Land Between the Rivers) The Fertile Crescent

Dramatic variety of elevation ⇒ many species of
edible plants

Home to the eight Neolithic **crops** important in early
agriculture: progenitors to **emmer wheat**
einkorn, barley, flax, chickpea, peas, lentils

Home to five most important species of **domesticated**
animals: cows, goats, sheep, pigs, and horse

Assyria 2,500 – 612 BC

The Assyrian kingdom was well organized

Major source of **metal ore**, as well as **lumber**

The priesthood became a major power in the Assyrian society

Long wars fought that helped build Assyria into a warrior society

Social position of women was lower than in the neighboring societies.

Assyria was open to homosexual relationships between men

Under Ashurbanipal (669–627 BC), Assyrian domination spanned from the Caucasus Mountains in the north to Egypt, Lybia, and Arabia in the south, and from Cyprus in the west to Persia and the Caspian Sea in the east

Decline due to civil wars and **political instability**

Assyria conquered by Alexander Macedon in 322 BC

Assyrian Art - Ishtar Gate – Babylon, 575 BC

Pergamon Museum, Berlin



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2334-2083 BC - Akkadian Empire (Mesopotamia)

The Akkadian Empire – 2,334-2,083 BC

Unified indigenous Akkadian and Sumerian speakers for the first time under one rule.

The Akkadian Empire included Mesopotamia (modern Iraq, Kuwait, northeast Syria, and southeast Turkey), modern Syria and Lebanon, and eastern and southern parts of Iran.

Akkadian Empire and Sargon of Akkad (2,334–2,279 BC)

“Trade extended from the **silver mines** of Anatolia to the **lapis lazuli** mines in modern Afghanistan, the **cedars** of Lebanon and the **copper** of Magan (Oman).”

Consolidation of the city-states of Sumer and Akkad ⇒ Growing economic and political power of Mesopotamia.

The empire's breadbasket was the rain-fed agricultural system of Assyria and a **chain of fortresses** was built to control the **imperial wheat production**.

Many cruel battles

Resources ⇒ Trade ⇒ Dominance ⇒ Destruction

Sargon of Akkad

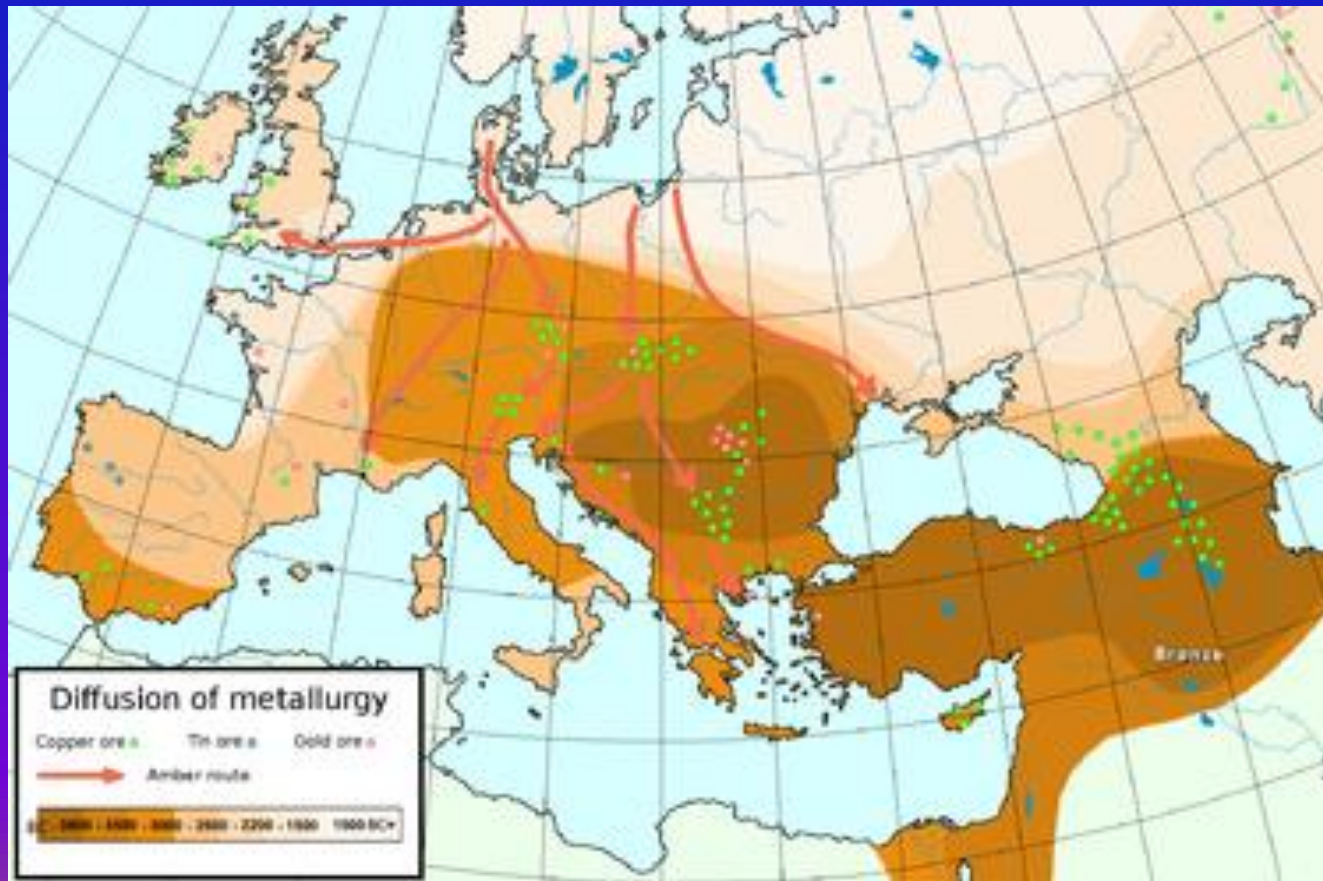
“It’s for your own good that we must conquer you”

Emperor Sargon, Akkadian Empire,
first empire in the world, c. 2400 BC

INTERMISSION

The Bronze Age – Diffusion of Metallurgy

Darkest areas are the oldest



Patterns of Human Societies Since the End of the Ice Age (12,000 yrs. BC)

	<i>Tools used</i>
Hunter-gatherer	Stones
Farming society	Metals
Industrial societies	Writing

THE BRONZE AGE

Near East - c. 3300 -1200 BC

South Asia - c. 3000 - 1200 BC

Europe - c. 3200 - 600 BC

China - c. 2000 -700 BC

Major Civilizations in the Bronze Era

2070 – 1600 BC - Xia Dynasty in China

2000 – 771 BC - Bronze Age of China

1600 – 1160 BC - The Hittite Civilization

1600 – 1100 BC - Mycenaean civilization

Xia Dynasty in China

c. 2,070 – c.1,600 BC

First dynasty in the traditional Chinese history

Yu – First emperor of this dynasty

Stopped the Yellow river floods by building **canals**
for drainage and irrigation of fields

Vast agricultural progress

Early **medicine**

Major Civilizations in the Bronze Era (cont'd)

2070 – 1600 BC - Xia Dynasty in China

2000 – 771 BC – Bronze Age of China

The Bronze Age of China (2,000 – 771 BC)

Started under the Shang dynasty – Yellow river valley, Henan province

Imported technology or invented locally (?)

Bronze artifacts: utilitarian, ritual, tools, weapons

Taotie motifs (animal-like masks)

Jade carving

Irrigation

Innovative medical thinking

Bronze Age of China

“China has been long one of the richest, one of the most fertile, best cultivated, most industrious, and most populous countries in the world.”

The Wealth of Nations

Adam Smith (1723 – 1790)

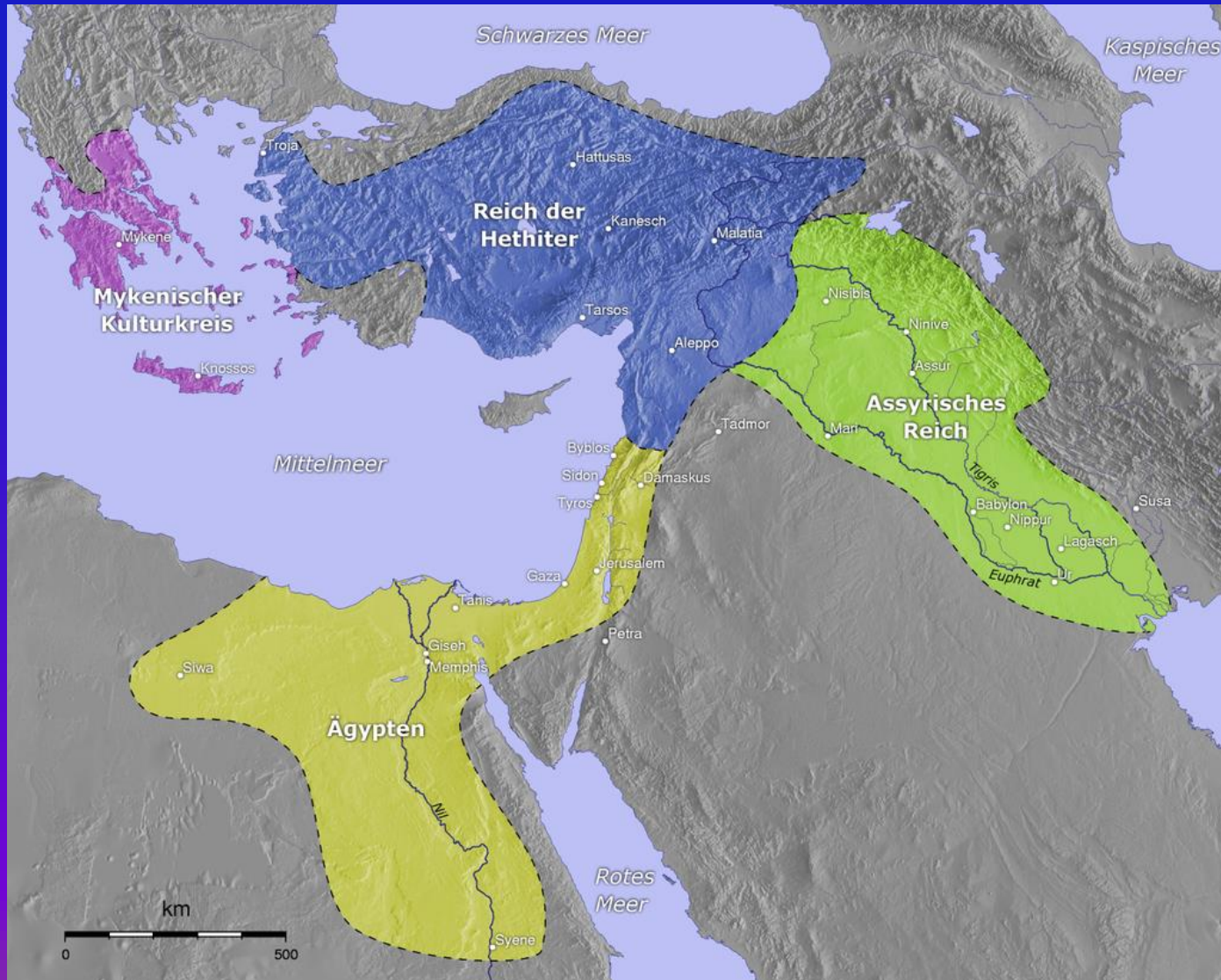
Major Civilizations in the Bronze Age (cont'd)

2070 – 1600 BC - Xia Dynasty in China

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1600-1160 BC – The Hittite Empire

The Hittite Empire c.1,600 – c.1,180 BC



Cappadocia, Turkey





The Hittite Empire (1,600 – 1,160 BC)

Book of Kings: Hittites supplied Israelites
with **cedar, chariots, and horses**

1906 - Archeological discovery in
Boğazköy of 10,000 tablets written
in cuneiform

Hittites – Masters of Metal Work in the Bronze Era



Major Civilizations in the Bronze Age

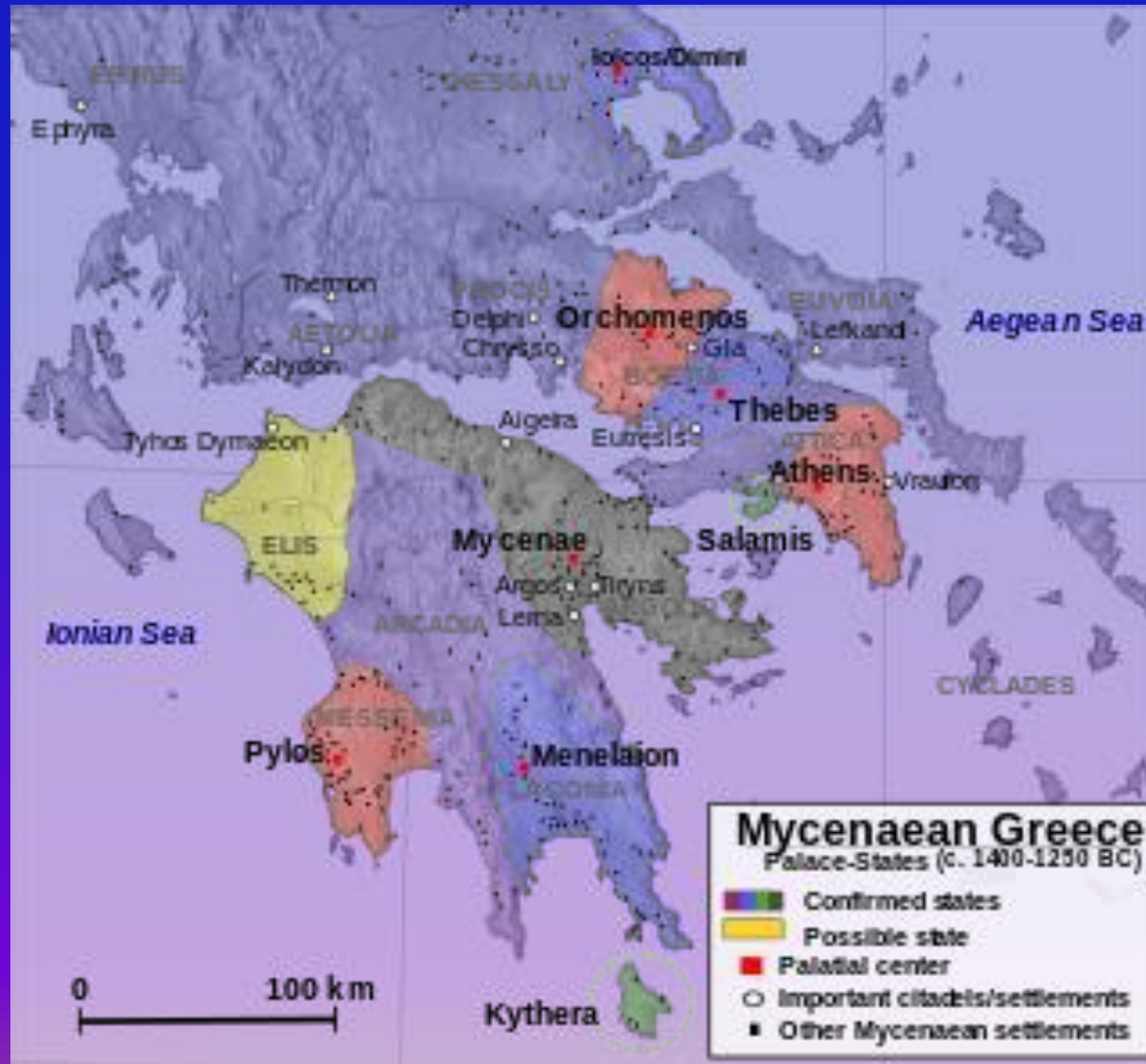
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1600 -1160 BC - The Hittite Empire

1600 - 1100 BC - Mycenaean Greece

Mycenaean Greece



Mycenaean Civilization

Innovations in: Engineering

Architecture

Military infrastructure – **Metal work**, defensive walls

The **script** = first written record of the Greek language

Metal working. **Gold** ornaments

Homer's *Iliad* written in 8th cent. BC

Extensive trade and political influence in Asia Minor (Hitites)

Well-defined three classes:

- King and his court
- People
- Slaves

Mycenaean writing

Syllabic Writing Borrowed from Minoan Writing



Cyclopean Masonry Walls of Mycenae



Mycenaean Pottery



Mycenaean Krater (c.1,250 BC)
It shows marching soldiers with spears



Mycenaean Gold Earring – 1,600 BC



Mask of Agamemnon – 1,600 BC
National Archeological Museum, Athens

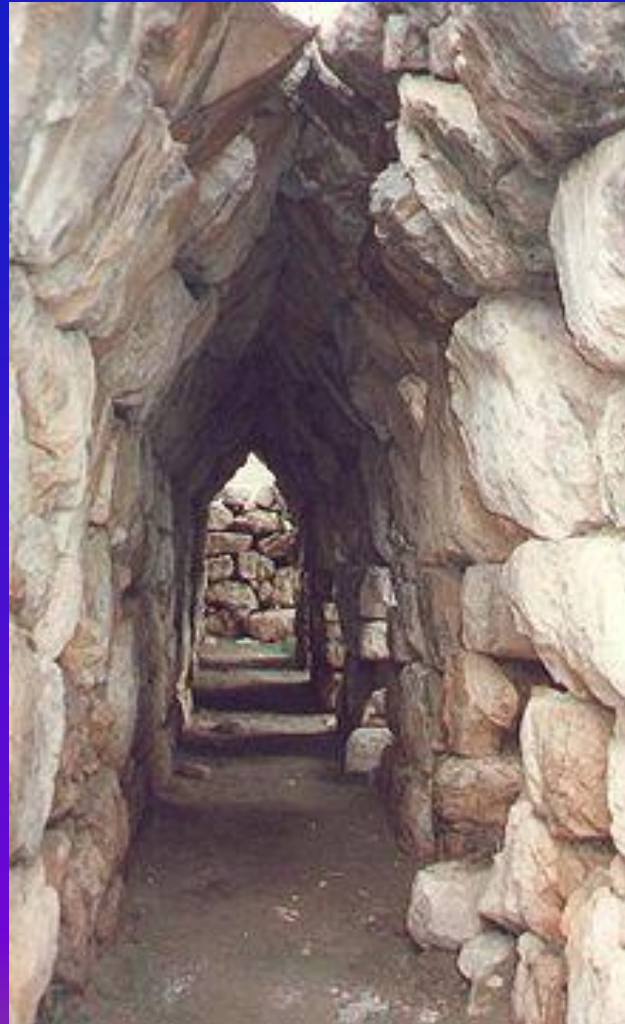


A Mycenaean Boat



Gallery in the Walls of Tiryns, Mycenae

The vault will be introduced much later by
the Romans



Mycenaean Civilization Swords and Cups



Major Civilizations in the Bronze Era

2070 - 1600 BC - Xia Dynasty in China

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1600 - 1160 BC - The Hittite Empire

1600 - 1100 BC - Mycenaean Greece

1500 BC–500 CE - Olmec, Maya, Zapotec in Mesoamerica

MESOAMERICA

By 6000 BC, the early inhabitants of Mesoamerica were domesticating plants. Barley and wheat cultivated

All regions of Mesoamerica cultivated the base crops of **maize, beans, and squashes**

All Mesoamerican cultures used stone age technology

After c.1000 AD **copper, silver, and gold** were worked

Mesoamerica lacked draft animals. Did not use the wheel, and possessed few domesticated animals

The principal means of **transport** was on foot or by **anoe**

Olmec Civilization – 1400 – 1200 BC



1,500 BC – 1,697 CE – Mesoamerica – Olmec, Maya, Zapotec

OLMEC – Southeast Mexico (Veracruz and Tabasco)

Well-watered alluvial soil ⇒ **High soil productivity** ⇒ Rich class

The elite class demanded the production of the symbolic and sophisticated luxury artifacts

Many of these luxury artifacts were made from materials such as **jade, obsidian, magnetite (iron oxide)** – far away – extensive trading network in Mesoamerica

Colossal heads and **jewelry**

- Bloodletting
- First writing 900 BCE - 650 BCE
- Concept of **zero**
- **Calendar**

Decline caused by earthquake

“The Wrestler,” an Olmec Era Statuette, 1,200 – 800 BCE



Olmec Art. Face Mask Made in Jade African origin (?)



Maya Civilization

Area: Yucatan, Guatemala, Belize, San Salvador, Honduras

First Maya cities developed around 750 BC, and by 500 BC these cities possessed monumental architecture

Abilities: **Hieroglyphic script** - the only known fully developed writing system of the pre-Columbian Americas

Art, architecture, mathematics, calendar, and astronomical system

Diet: Sophisticated agriculture, shifting fields, terracing, **Irrigation**
Maize, manioc, sunflower, cotton, and other crops. Pressing seeds for **cooking oil**

Chilies and **tomatoes**. **Cotton, cacao** and **vanilla**

Cotton was spun, dyed, and woven into valuable **textiles** – traded

Aztec capital Tenochtitlan fell to the Spanish in 1521 CE. Successive battles.

1697 - Last Maya city fell.

Maya territory Yucatan, Guatemala, Honduras



Chichen Itza – El Castillo



Chichen Itza – The Observatory



Painted Mural



Ceramic Vessel with Maya Script

Ethnographisches Museum, Berlin



Maya Scribe



Obsidian spearheads



Timeline of American Crop Cultivation

Date	Crop	Location
7000 BC	Maize	Mexico
5000 BC	Cotton	Mexico
4800 BC	Peppers, squash avocados	Mexico
4000 BC	Beans	Mexico
4000 BC	Nuts	South America
2000 BC	Sunflowers, beans	South America

Ancient American Crops

Cereals: maize (corn), barley

Pseudo-cereals: Quinoa, sunflower

Pulses: Beans, peanuts

Fiber: Cotton, yucca, agave

Roots: potatoes, jicama, many tubers

Fruits: Tomatoes, peppers, avocados, many sorts of berries, papayas, passion fruit

Melons: Squashes

Nuts: Peanuts, walnuts, pecan, and others

Meat and Poultry: Turkey, bison

Other: Tobacco, vanilla, cocoa, chocolate, rubber

American Crops



Corn, a Staple in Mayan Diet



Iron Age 1,200 – 200 BC

Ancient Near East 1200 – 500 BC

India 1200 – 200 BC

Europa 1200 - 1 BC

China 600 - 200 BC

Korea 400 BC - 400 CE

Japan 100 BC - 300 CE

Iron Age

Copper's melting point 1,085°C

Tin's melting point 232°C

Iron's melting point 1,538°C

3000 BC - Steel made in Anatolia - Carbon 0.3%

1200-1000 BC - Large scale iron production

Classical Antiquity

*"The Glory that was Greece, and the
Grandeur that was Rome"*

Edgar Allan Poe

8th – 7th cent. BC – From the Greek poetry of Homer to
5th cent. CE – Decline of the Roman empire

Classical Greece

Greco-Persian wars Naval battles

Athenian-Spartan rivalry

5th Cent. BC - the Century of Pericles

508 BC – Democracy instituted at Athens

Parthenon built, School of Sculpture. Philosophy (Socrates,
Plato, Aristotle)

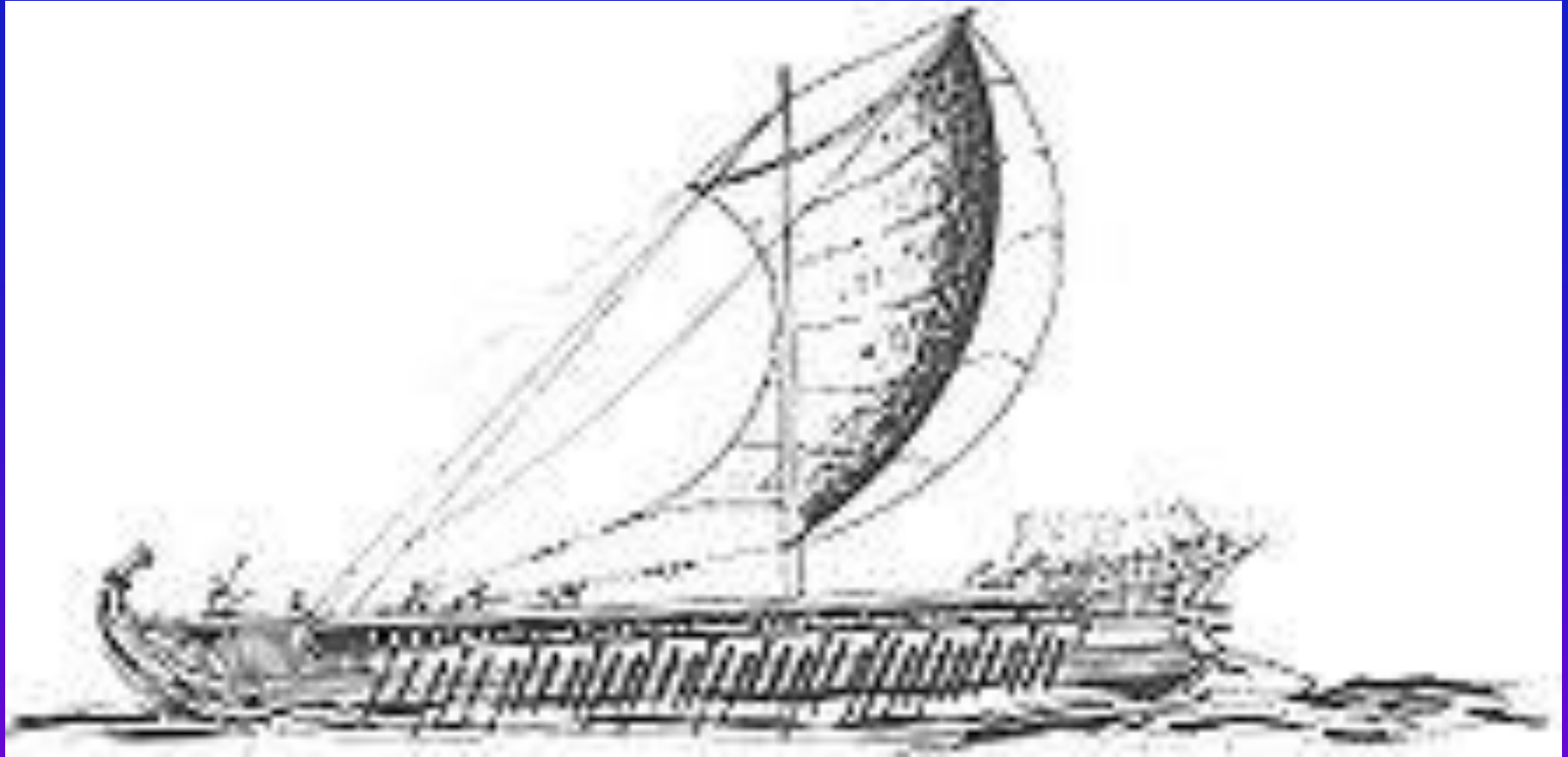
Alexander Macedon empire (356 – 323 BC)

Eupalinos Tunnel

Island of Samos (Greece) - 550 BC



The Greek Triereme



The Parthenon, Athens, Greece

Fifth Century BC



Water Pipes - Madradag Aqueduct Pergamon, Turkey, 2nd Century BC



Aphrodite (Venus of Milo) 130-100 BC Discovered 1820, Louvre Museum



Roman Empire

753 BC - Founding of Rome

Roman Republic

Laws

Roman Empire

Roads and bridges

476 CE - End of the empire

Pont du Gard, near Nîmes, France Roman, 60 AD

Length 902 ft., Gradient 1", Height 160 ft.



The Common Era

Empires and Imperialism

Byzantine empire (476 - 1453)

Arab Caliphates (632 - 1517)

Ottoman empire (1517- 1924)

Western empires (1492 - ?)

The Stages in the Evolution of an Empire

1. A small industrious and talented, people make an empire
2. An imperial culture is forged
3. The imperial culture is adopted by the subjects
4. Subject people demand equal status
5. Empire founders lose their dominance
6. Imperial culture continues to develop

A small group establishes an empire

Romans develop the Roman empire

Arabs establish the Arab Caliphate

Various Europeans develop their empires

Mantra: *“It’s for your own good that we conquer you”*

Emperor Sargon, Akkadian Empire, first empire, c. 2400 BC

An imperial culture is forged

Greco-Roman culture

Arab-Muslim culture

Western culture

Adopting the new culture

Roman law and political ideas are adopted

Arabic science and architecture is used

The languages of the new empires are

learned and used: English, French,

Spanish, Portuguese, Dutch

New ideas are learned: Democracy, Human

rights, Socialism, and Nationalism

Subject peoples demand equal status

Roman empire: Illyrians, Gauls, Punics

Arab Caliphate: Egyptians, Iranians, Berbers

Western empires: Indians, Chinese, Africans

The empires founders lose their dominance

Multi-ethnic groups with the learned values

Further developments

Byzantine Empire 476 – 1,453 AD

At its greatest extent

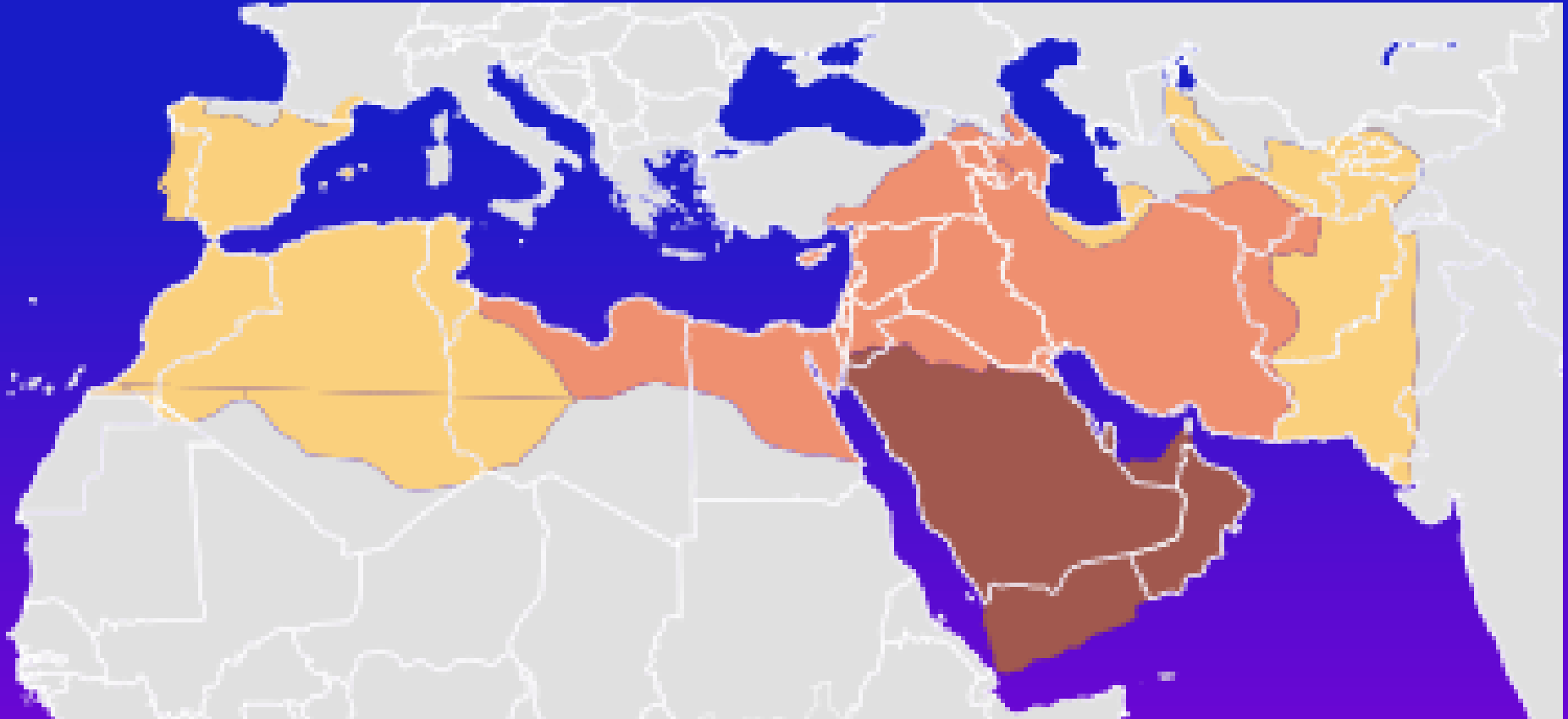


Hagia Sophia - Istanbul

Built by Emperor Justinian 532 – 537 CE



Early Muslim Conquests 622 – 750 CE



Western Imperialism – An Overview

1492 – Columbus Discovery of America

Started the Western expansion

Started the “colonialism” – political

Started the “imperialism” - economical

Discovery of America

Christopher Columbus -1492 - “was one lucky devil”
(*Saveur, 2016*)

**Brought to Americas: Small pox, chicken pox,
syphilis, firearms, gunpowder**

**Brought to Spain: Peppers (pimiento), corn,
potatoes, gold**

Taj Mahal – Agra, India

Mughal emperor Shah Jahan – 1,632



Victoria Terminus – Mumbai, India
Built 1,887 to commemorate the Golden
Jubilee of Queen Victoria



Major Epidemics

Date	Location	Disease	Death toll
541	Europe	Plague	40% of pop.
1346	Europe	Plague	30-60% of pop.
1616	So. England	?	30-90% of pop
1816	Asia-Europe	Cholera	>100,000
1829	Asia, Europe, No. America	Cholera	>100,000
1852	Russia	Cholera	1,000,000
1889	Worldwide	Influenza	1,000,000
1899	Europe, Asia, Africa	Cholera	>800,000
1918	Worldwide	Influenza	75,000,000
1960	Congo	HIV/AIDS	>30,000,000

Industrial Revolution and World Population

1800 – 1 Billion people on Earth

1930 – Second billion (in 130 years)

1959 – Third billion (in 29 years)

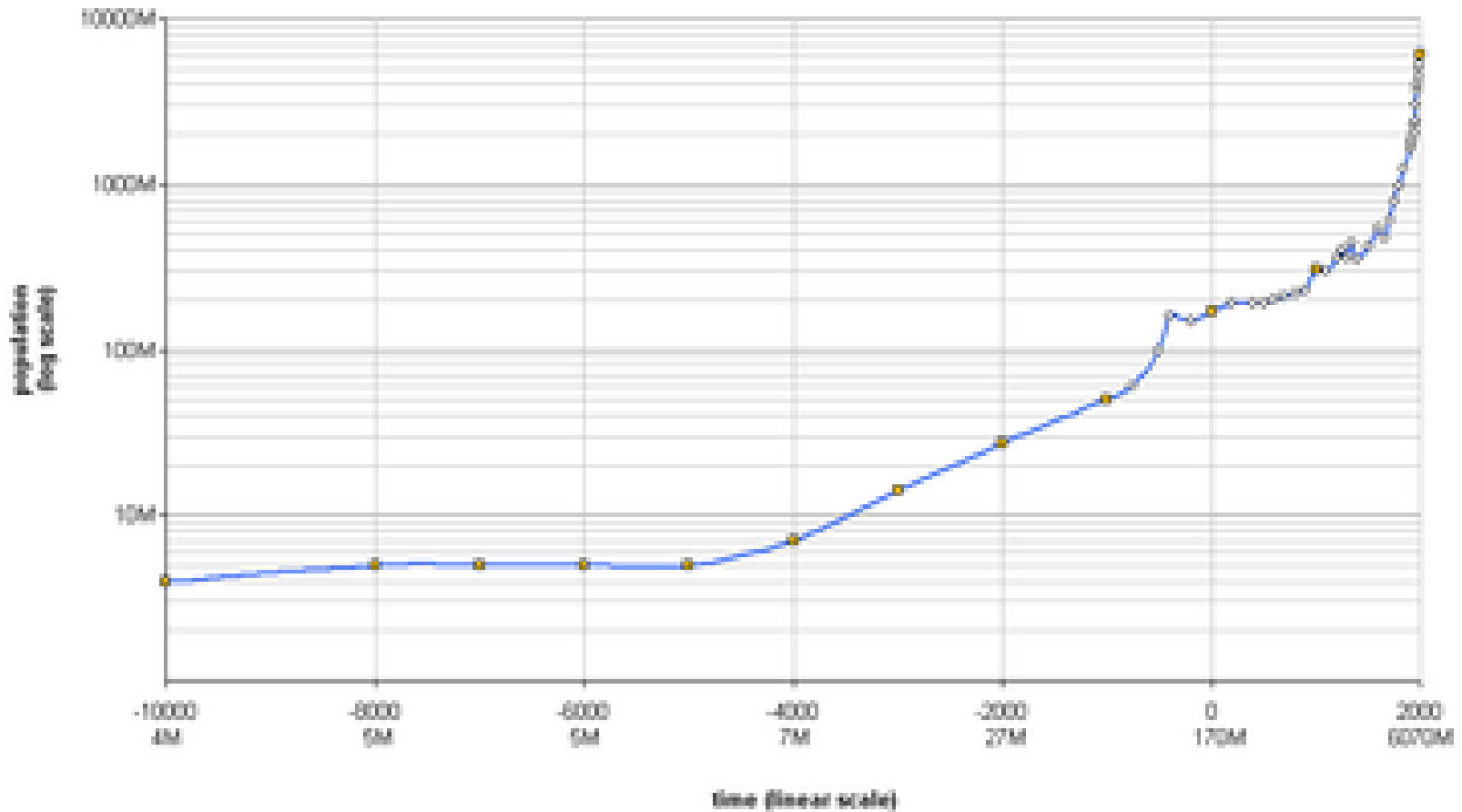
1974 – Fourth billion (in 15 years)

1987 – Fifth billion (in 13 years)

2050 - Expected world population = 9 billion

Declining growth rates \Rightarrow doubling will take 200 yrs.

World Population - 10,000 BC – 2,000 CE



2016 World Population = 7,442,000,000

In millions

China	1,410
India	1,297
USA	324
Indonesia	258
Brazil	205
Pakistan	191
Nigeria	188
Bangladesh	162
Russia	141
Mexico	162

In millions

Japan	126
Philippines	103
Ethiopia	101
Vietnam	94
Egypt	86
Germany	82
Iran	80
Turkey	77
Congo	73
Thailand	67

END OF LECTURE # 1