

Lessons from Ancient History

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Ecology – Water Quality Financial Assistance

General Disclaimers

1. I am not a historian
2. This is only an overview. I skip around a ton (sorry)
3. Ancient Figures are mostly terrible

Earliest Civilization in Mesopotamia



What do you mean: “Civilization”?

- All ancient humans were amazing and creative.
- A Civilization is a culture that has monumental architecture.
 - Temples, Palaces, Tombs, Monuments.

Romans



Greeks



Maya



Chinese



Egyptians



Sumerians



How did they do that?

- Spoiler: It wasn't aliens.
- Monumental Architecture requires:
 1. Population Density
 2. Social Stratification
 3. Infrastructure

Look for the underlying infrastructure systems!



LESSON 1

Infrastructure matters.
Every Civilization on the planet
builds up from their
infrastructure systems.

Role of Archeology





The problem with ancient written records

- Third, fourth, or fifth hand sources
 - Many sources did not survive
 - Conflicting sources
 - Motivated sources
 - Metaphor and Myth
 - Sources pass down through many different copyists
-
- **Bottom Line: If we have solid evidence, follow the archeology.**

LESSON 2

“As-Built” record drawings are only as good as the contractor and engineer at the time.

When it matters field verify important details.

What about the “uncivilized barbarians”?



Two very different cultures:

People of Soil

- Stay in Once Place
- Soil is the center of life
- Accepts strong government
- Your neighbors problem is theirs
- Taking stuff is wrong
- War

People of Grass

- Constantly on the move
- Animals are the center of your life
- No government at all.
- Your neighbors problem is your problem
- Taking stuff is normal
- Migration

LESSON 3

Develop a sense of perspective
about our differences.

We have much more in common
that at any other time in history.

Mesopotamia



Mesopotamia

- Two fertile river valleys,
- Earliest large scale agriculture
- Dozens of small city states.
 - Nineveh • Nippur
 - Assur • Lagash
 - Palmyra • Uruk
 - Babylon • Ur
 - Kish



Mesopotamian Firsts

- Agriculture
- The wheel,
- Writing,
- Potter's wheel,
- Centralized government,
- Written law codes,
- Bronze,
- Medicine,
- Organized religion,
- Astronomy,
- Mathematics, and
- Slavery,
- Organized warfare

First War over water

- City state of Umma cut off irrigation water to Lagash
- Lagash invades Umma
- 3600 soldiers die.
- Oldest known peace treaty, and oldest international water rights treaty recorded on stelae.



LESSON 4

Conflict over water is as old as Civilization

The Bronze Age

- Relative date, not absolute.
- Bronze is a alloy of Copper and Tin
- Requires international trade
- Trading relationships from Indus River to Mediterranean.
- It all collapses around 1000 BCE.

Rise and Fall of Neo-Asyria

- 911 BCE - First major power to recover after the collapse.
- 745 BCE - Tiglath Pileaser conquers to the Mediterranean and fully absorbs Babylon.
- 669 BCE - Ashurbanipal has conquered the known world. (height of Assyrian Power)
- Decline - Civil wars, rebellions, independence, raids by Scythian and Cimmerian horse archers.
- 609 BCE – Fall of Assyria. Alliance of Babylon, Media, Scythians and Cimmerians.

Tiglath Pileaser III



Post Neo-Asyria

4 world powers.

- Egypt
- Babylon
- Media
- Lydia



Lydia

- Small but rich.
- Early use of coins.
- Deposits of pure Electrum, a gold silver alloy.
- King Croesus ("Rich as Croesus") invented Bi-Metal monetary system using the gold and silver "Croeseid"



LESSON 5

Innovation is impossible to predict, but always seems obvious in hindsight.

PostNeo-Asyria

4 world powers.

- Egypt
- Babylon
- Media
- Lydia



Cyrus II of Persia - "The Great"



Rise of Persia

- 609 BCE – Fall of Assyria.
- 597 BCE – Conflict between Babylon and Egypt; Destruction of Jewish Temple; Deportation of Judah to Babylon
- May 28 585 BCE – Battle of the Halys River, Media and Lydia.
- 550 BCE – Cyrus Conquers Media.
- 547 BCE – Lydia attacks the Persians. And looses.
- 539 BCE – Cyrus conquers Babylon.
- 525 BCE – Cambyses conquers Egypt.

Croesus and the Oracle of Delphi



- “If you attack the Persians, you will destroy a great empire”

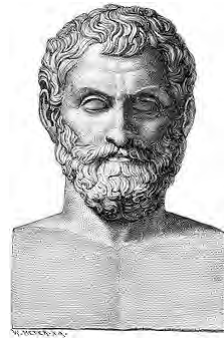
LESSON 6

No matter how much you pay your Oracle for advice,
it isn't always good advice.

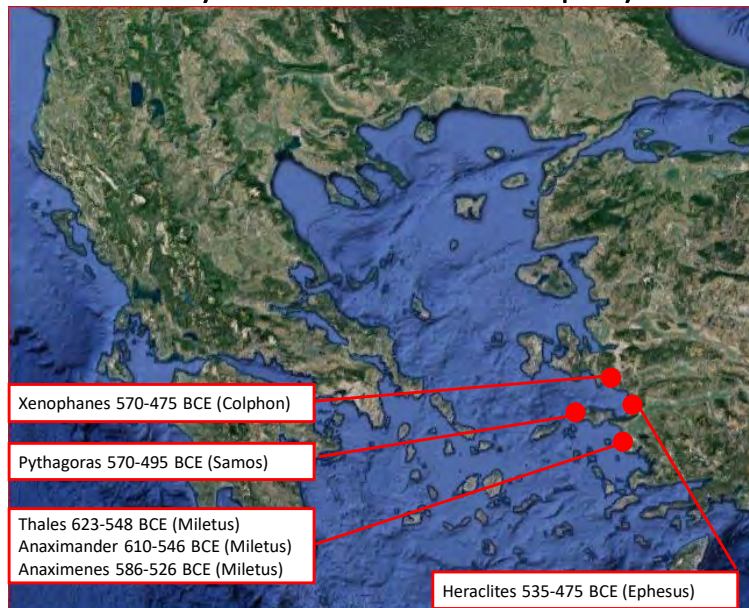
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If you are paying your Oracle for advice, and you are
not sure what they mean; Ask follow up questions.

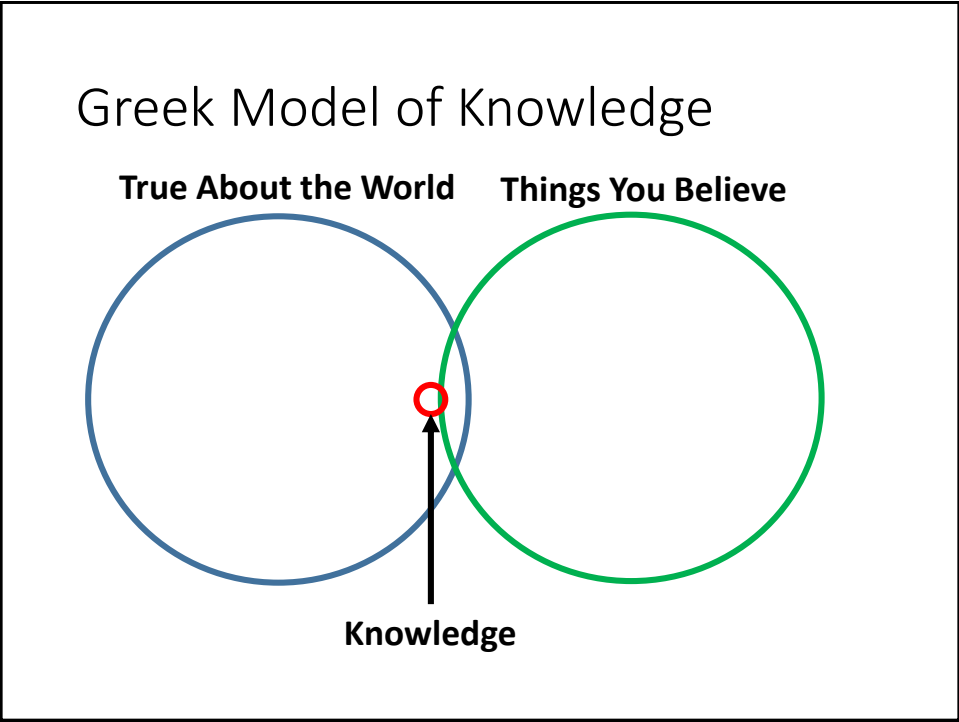
Thales of Miletus

- Born in Miletus. 624 BCE
- Predicted Eclipse in that occurred in 585 BCE
- Socrates credits Thales as the beginning of Greek philosophic tradition.
- Water is fundamental
- Magnets have souls
- Not really from “Greece”



Early Greek Philosophy

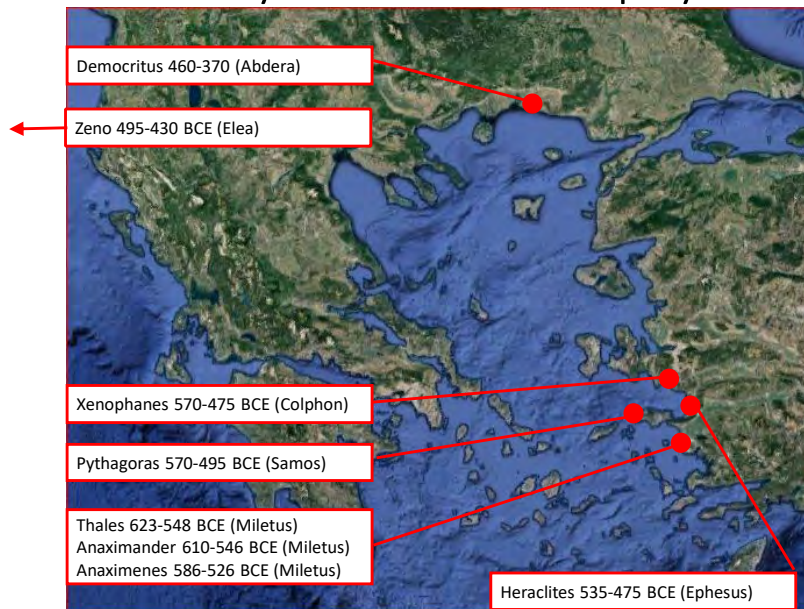




Zeno of Elea

- Everything you “know” is wrong.
- Everything you believe is an illusion.
- Everything is one.
- Change is impossible.
- Paradoxes to prove it:
 - Movement is impossible
 - Just say “No” to Non-being.
 - All things are one.

Early Greek Philosophy



Democritus of Abdera

- Born in Abdera, Thrace. 480 BCD.
- Rich Family. Traveled extensively.
- Known as the “laughing Philosopher”.
 - “Seeing the folly of man most are moved to anger, but Heraclitus would cry and Democritus would laugh.”
Source?
- Or “The Mockers” if he was laughing at your ideas.
- Plato hated him. Wanted to see his writings burnt.
- Builds off Zeno’s crazy ideas.

Tangent about Alchemy

By 1300 There are 12 known elements. Not called elements yet, but are isolated and properties are known.

- | | |
|----------|------------|
| • Copper | • Tin |
| • Lead | • Sulphur |
| • Gold | • Mercury |
| • Silver | • Zinc |
| • Iron | • Antimony |
| • Carbon | • Bismuth. |

Henning Brand: Putting the “P” in Phosphorus



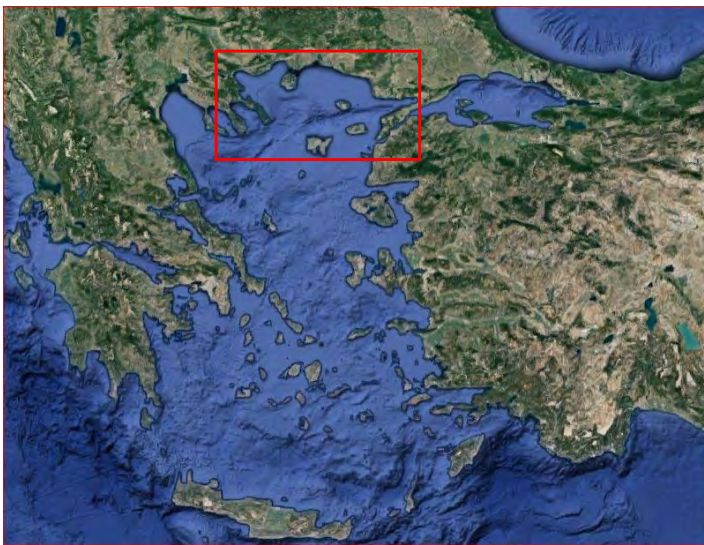
500 BCE Greece vs. Persia!



Greco-Persian Wars

- 498 BCE - Ionian cities, lead by Miletus, revolt against Persia.
- Athens send troops to support Miletus.
- Darius crushes the rebellion.
- 490 BCE – Re conquest of Macedonia
- 492 BCE – First Invasion of Greece, Battle of Marathon.
- 480 BCE – Second Invasion of Greece, Thermopile, Athens burns.

Xerxes Invasion



Xerxes Invasion



Second Persian Invasion

- Massive Canal to avoid the sea off Mt. Athos.
- A floating bridge across the Hellespont.
 - First bridge is a failure.
 - The river itself is punished; lashed, branded, and shackled.
 - Supervisors are beheaded.
 - Second bridge is a success!

Xerxes approach to construction management.

Herodotus:

“Bitter Water, your master is imposing this penalty upon you for wronging him, even though you had suffered no injustice from him. And King Xerxes will cross you whether you like it or not. It is for just cause that no people offer you sacrifice. You are a turbid and briny river.” Thus he ordered that the sea was to be punished, and also that the supervisors of the bridge over the Hellespont were to be beheaded.”

LESSON 7

Good engineering is nice; but construction inspection, quality assurance, and oversight are what makes a project successful.

&

Find out what is going to motivate your contractor.

Athens is in Trouble

- The canal is finished.
- The bridge is functioning.
- Xerxes is coming.
- Athens knows they are on the Persian naughty list.
- What to you do?

Athens asks the Oracle of Delphi



- “You are basically doomed.”
- Follow up question: “Should we invest in the Navy or the Army?”

Oracle at Delphi to Athens

“Why sit so idle you poor wretched men. To the ends of the land you should flee. Leave your homes leave the heights of your circular fortress, for neither the head nor the body remains in its place, nor the feet underneath, nor the hands nor the middle is left as it was, but now all is obscure. For casting it down is fire and Ares so sharp on the heels of Assyrian chariot and he will destroy many cities with towers and not yours alone. And into the devouring fire he will give the temples of eternal gods which now drip with sweat and shake in their fear. As blood gushes darkly from the top of their roofs foreseeing the force of compelling disaster. Now step out of this shrine and shroud over your heart for the evils to come.”

LESSON 8

If the Oracle gives you the straight truth,
but you don't want to hear it,
and you ignore that advice;

You can't blame the Oracle for what happens.

Greek Geo-Politics

- 479 BCE – Persian army exits mainland Greece.
- 477-460 BCE – Wars of the Delian League.
- 460-445 BCE - First Peloponnesian War
- “30 year peace” lasts 14 years .
- 431-404 BCE - Second Peloponnesian War
- 401 BCE Cyrus the younger 's rebellion in Persia.
- 394-386 Corinthian war
- 378-362 BCE – Theban-Spartan War.
- 359-338 BCE – Phillip of Macedon goes to war with somebody every year.
- 338 BCE – Macedonia dominates the peninsula. “The league of Corinth”

Wars of the Delian League 477-460 BCE



First Peloponnesian War
460-445 BCE



Second Peloponnesian War
431-404 BCE



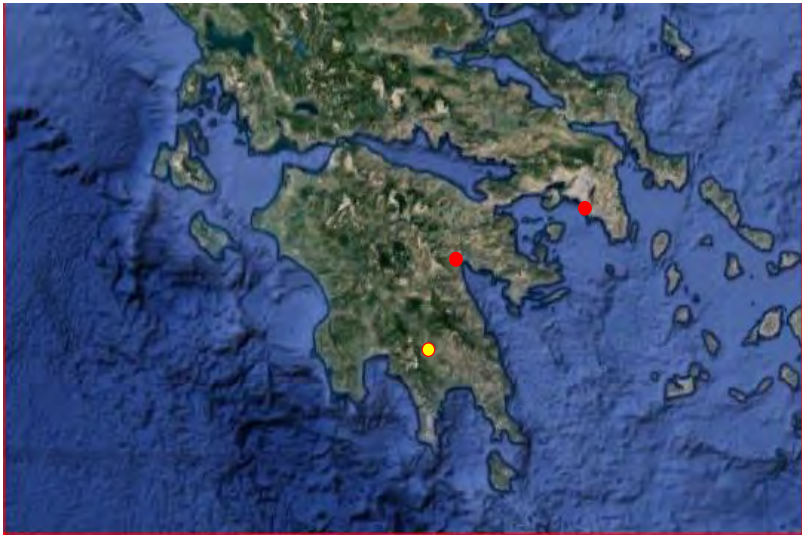
Corinthian War
394-386 BCE



Corinthian War
394-386 BCE



Theban-Spartan War
394-386 BCE

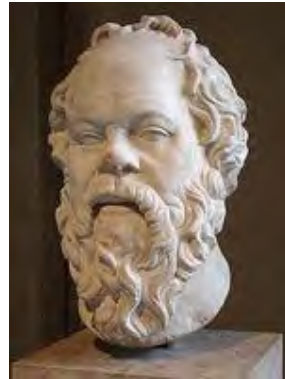


Theban-Spartan War
394-386 BCE



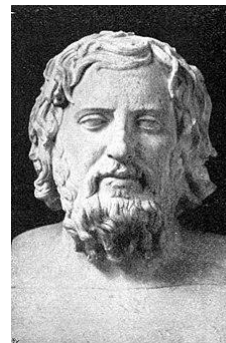
Socrates

- No direct writings.
- Lived a life of voluntary poverty and pursued **virtue** above everything.
- “Socrates was the wisest man in Athens” - Oracle at Delphi
- The “gadfly of Athens”
- Socratic questions.
- Students include Plato, Xenophon, Critias, Antisthenes,
- 399 BCE - Executed for “corrupting the youth and introducing new gods”



Xenophon

- Born in Athens.
- Becomes student of Socrates in 403 BCE
- Visits Persia 401-397 BCE
- Mercenary for Sparta,
- Philosophy late in life.



Xenophon at the Oracle of Delphi



- “I already know what I want to do.”

LESSON 9

When you hire someone for advice, ask
the right question.

The *Anabasis* of Xenophon



LESSON 10

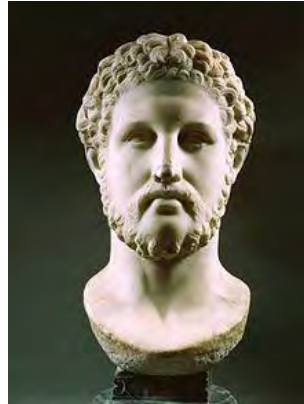
Leadership is more than telling people what to do.

Leadership means sharing the burden.

Sometimes leadership means you becoming the leader.

Phillip II of Macedonia

- 364 BCE – Captured and held hostage in Thebes
- 359 BCE – Becomes king of Macedonia
- 359-338 BCE – Goes to war with somebody every year.
- 357 BCE – Marries Olympias,
- 356 BCE – Alexander (soon to be “the Great”) is born.
- 343 BCE – Hires Aristotle as Alexanders private tutor.
- 338 BCE – “The league of Corinth”
- 336 BCE – Assassinated at his daughters wedding.



Phillip is Murdered! Who Done it?

- His bodyguard: Pausanius. But why?
 - A personal grudge?
 - Paid off by the Persians?
 - In the employ of Olympias?
 - Working for Alexander?
 - Jilted lover?
 - Working for one of the Greek cities? Thebes maybe?

A full-length marble statue of Aphrodite of Knidos, standing and holding a mirror. The statue is positioned in a museum setting, with informational panels visible in the background.

332 BCE - Egypt



331-329 BCE – Babylon and Persia



328-325 BCE – Bactra and Indus



June 11, 323 BCE – Alexander Dies

- The empire fractures into:
 - Greek mainland and Macedonia
 - Egypt (Ptolemy)
 - Core Persia (Seleucid)
 - Bactrian Kingdoms (Greco-Buddhism)
- Sets up the Hellenistic Age

Inheritors of Socrates' legacy

- Plato and the Academy,
- Aristotle and the Lyceum
- Cynics
- Stoics
- Epicureans
- Cyrenaics
- Skeptics.

Epicureans

- Epicurus was born 341 BCE on Samos
- 311 BCE – Teaching in Myletus.
- 306 BCE – Moves to Athens.
- Epicureans are hedonists, but life-cycle cost-benefit hedonists
- Mathematics and logic are critical to maximizing pleasure.
- Some of their rules of thumb:
 - No to the “Sex, drugs, rock-n-roll” lifestyle.
 - Yes to deep and meaningful friendships.
 - NO to getting involved in politics
 - YES to helping out friends when they really need it.

LESSON 11

You can use cost benefit analysis for all kinds of stuff.

Thank You!