Making of the Western Mind
Institute for the Study of Western Civilization
Week Six: Aristotle
Mycenae
Settled circa 2000 BC by Indo-European Invaders who settled down.

The Age of Heroes
1600-1100 BC
The Mycenaean Age
The Bronze Age Collapse, 1184 BC

The Bronze Age collapse is a transition in the Aegean Region, and the Eastern Mediterranean from the Late Bronze Age to the Early Iron Age that historians, such as M. Liverani, S. Richard, Robert Drews, Frank J. Yurco, Amos Nur, Leonard R. Palmer, and others, believe was violent, sudden and culturally disruptive. The palace economy of the Aegean Region and Anatolia which characterised the Late Bronze Age was replaced, after a hiatus, by the isolated village cultures of the Greek Dark Ages. In the first phase of this period, almost every city between Pylos and Gaza was violently destroyed, and often left unoccupied thereafter: examples include Hattusa, Mycenae, and Ugarit.
HOMER
AND TROY
ANADOLUDAKI YUNAN KENT BİRLİKLERİ

- Aiol Birliği
- İon Birliği
- Dor Birliği
- İç halka kentin ait olduğu ilk birliği, dış halka sonradan katıldığı birliği gösterir.
The Renaissance of the Eighth Century B.C.

Developments in the eighth century B.C. enabled states to reemerge. The ports of Argos and Corinth, on the eastern shore of the Peloponnesus, grew very fast, trade with the Near East began to flourish, and increased domestic production enabled a new, wealthy elite to rise. Commercial activity centered on the acquisition of metals from the Near East for the manufacture of luxury goods. In this process, the Greeks came in contact with and adopted the alphabet of the Phoenicians, as well as other innovations that accelerated change in Greek civilization.
The Ionian Coast of Asia Minor
700-500 BC
Smyrna
Colophon
Ephesus
Samos
Miletus
Halicarnarsus
(World of Homer)
1. Expanding exploring commercial society.
2. Political Constitutional experimentation
4. Alphabetic writing and papyrus.
Thales of Miletus, 624 - 546 BC
Bertrand Russell: "Western philosophy begins with Thales."
The cosmos is a complex and orderly system; the opposite of chaos. It is the universe regarded as an ordered system. The philosopher Pythagoras is regarded as the first person to apply the term cosmos (Ancient Greek: κόσμος) to the order of the universe. The 19th century geographer and polymath, Alexander von Humboldt, resurrected the use of the word cosmos from the ancient Greek, assigned it to his multi-volume treatise, Kosmos, and, along the way, influenced our present and somewhat holistic perception of the universe as one interacting entity.
Cosmos versus Chaos

In other words:
For the Greeks
The Divine Order
of the Universe
The Umoved Mover
(Aristotle)
all signified
a fundamental order
in all of creation
all the universe.

Cosmic Order  (Word Cosmos MEANS Order)
Thales an active politician
Thales an active commercial entrepreneur
The Presocratic philosophers
(Before Socrates)
Thales, Anaximander,

rejected traditional mythological explanations of
the phenomena they saw around them in favor of
more rational explanations.

These philosophers asked questions about
"the essence of things":
• From where does everything come?
• From what is everything created?
• How do we explain the plurality of things found
  in nature?
• How might we describe nature mathematically?
Almost all of the other Pre-Socratic philosophers follow him in attempting to provide an explanation of ultimate substance, and the existence of the world without reference to mythology. Those philosophers were also influential and eventually Thales' rejection of mythological explanations became an essential idea for the scientific revolution.
In mathematics, Thales used geometry to solve problems such as calculating the height of pyramids and the distance of ships from the shore. He is credited with the first use of deductive reasoning applied to geometry. As a result, he has been hailed as the first true mathematician and is the first known individual to whom a mathematical discovery has been attributed.
In geometry, Thales' theorem states that if A, B and C are points on a circle where the line AC is a diameter of the circle, then the angle $\angle ABC$ is a right angle. It is generally attributed to Thales of Miletus, who is said to have offered an ox (probably to the god Apollo) as a sacrifice of thanksgiving for the discovery,
Water as a first principle

Thales' most famous philosophical position was his cosmological thesis, which comes down to us through a passage from Aristotle's *Metaphysics*. In the work Aristotle reported Thales’ hypothesis about the nature of matter – that the originating principle of nature was a single material substance: water. Aristotle then proceeded to proffer a number of conjectures based on his own observations to lend some credence to why Thales may have advanced this idea (though Aristotle didn’t hold it himself). Aristotle considered Thales’ position to be roughly the equivalent to the later ideas of Anaximenes, who held that everything was composed of air.
Thales of Miletus, 624 - 546 BC
Anaximander, 610-546 BC, Miletus

He belonged to the Milesian school and learned the teachings of his master Thales. He succeeded Thales and became the second master of that school where he counted Anaximenes and arguably, Pythagoras amongst his pupils.
Pythagoras, 570-495 BC
born at Samos island off coast of Asia Minor
Pythagoras, 570-495 BC born at Samos island off coast of Asia Minor. He and his disciples believed that everything was related to mathematics and that numbers were the ultimate reality. It was said that he was the first man to call himself a philosopher, or lover of wisdom, and Pythagorean ideas exercised a marked influence on Plato, and through him, all of Western philosophy.
Pythagorean theorem, is a relation in Euclidean geometry among the three sides of a right triangle. It states that the square of the hypotenuse (the side opposite the right angle) is equal to the sum of the squares of the other two sides. The theorem can be written as an equation relating the lengths of the sides $a$, $b$ and $c$, often called the "Pythagorean equation":

$...$ where $c$ represents the length of the hypotenuse and $a$ and $b$ the lengths of the triangle's other two sides.
For any right triangle with sides $a$ and $b$ and hypotenuse $h$, the square of the hypotenuse is equal to the sum of the squares of the other two sides.

$$h^2 = a^2 + b^2$$
Heraclitus of Ephesus 535 – 475 BC was a pre-Socratic Greek philosopher, and a native of the city of Ephesus. He was of distinguished parentage. Little is known about his early life and education. He was called "The Obscure."

Ever-present change is the fundamental essence of the universe.
The entire cosmos is a Mind (Nous). It was this Mind that made all things and put them in motion. “Mind is unlimited and selfruled and is mixed with no thing, but is alone and by itself .... It is the finest of all things and the purest, and it has all judgment about everything and the greatest power.” In this way Anaxagoras articulated an early form of monotheism.
The theory of Democritus held that everything is composed of "atoms", which are physically indivisible; that between atoms, there lies empty space; that atoms are indestructible; have always been, and always will be, in motion; that there are an infinite number of atoms.
Socrates
470-399 BC
Athens
was a Greek (Athenian) philosopher credited as one of the founders of Western philosophy. He is an enigmatic figure known chiefly through the accounts of classical writers, especially the writings of his student Plato.
The Death of Socrates by Jacques Louis David, Met NY
Aristotle tutoring Alexander, Begins 343 BC
343-340, Alexander, Hephaestion, Aristotle
Plato
427-347 BC

Aristotle
384-322 BC
The two had much in agreement:

- both opponents of Materialism,
- real knowledge of real universe possible
- act of cognition spiritual process/act is highest act of man
- the universe has design and purpose
- the good is equated with the real
- the good life is the goal of all rightly ordered activity
- the human soul differs from any other living being
- man does not owe existence to any material agency
- the principle of man’s highest activity is deathless (there is an eternal component)
- both interested in social and political issues
- philosophy must tell why as well as how
Plato
427-347 BC

Aristotle
384-322 BC
384, born Stagira, Macedon
364 Athens studying with Plato
343 Macedon, tutor to Alexander
336 Assass. of Philip II
334, Alexander on the road
334, Aristotle to Athens
set up school (Lyceum)
334 Alexander sends huge
donation for school
333 Alexander sends plants
animals to Arist (Botany etc)
334-322 Aristotle writes books
323 death of Alexander
Aristotle leaves Athens
322 Aristotle dies at Chalcis
Aristotle’s Books
Wrote 400 Works
1. Logical Works
   “categories” “Topics”
2. Scientific Works
   Physics, Meteorology
3. Aesthetic Works
   Poetics
4. Philosophical Works
   “Metaphysics” “Ethics”
   “Politics”
Euclid of Alexandria
born in Greece
spent time in Athens
knew members of the Platonic academy
moved to Egypt in the Post-Alexander period
Alexandria the center of science has great library
*Elements* published sometime around 300 BC
In the *Elements*, Euclid deduced the principles of what is now called Euclidean geometry from a small set of axioms. Euclid also wrote works on perspective, conic sections, spherical geometry, number theory and rigor. *The Elements* has been read for 2300 years without interruption.
This papyrus fragment is one of the oldest, if not the oldest, existing text from Euclid’s *Elements*. Euclid compiled and wrote his *Elements* in Alexandria, Egypt, in about 300 BC, in Greek. The fragment, also written in Greek, was found in Egypt in 1897 and has been dated to the end of the first century (20-30 BC).
1. A point is that which has no parts and no magnitude.

2. A line is length without breadth.

3. The extremities of a line are points.

4. A straight line is that which lies evenly between its extreme points.
Euclid of Alexandria
born in Greece
spent time in Athens
knew members of the Platonic academy
moved to Egypt in the Post-Alexander period
Alexandria the center of science has great library
*Elements* published sometime around 300 BC
Ptolemy of Alexandria
100 - 170 AD

The Almagest
and
The Geography

The Geography gives us a complete version of latitude and longitude. It posits a GEOCENTRIC UNIVERSE.

Columbus carries copy of the Geography maps with him, he will begin the dismantling of the Ptolemaic universe.
Ptolemy of Alexandria
100 - 170 AD
The Geography
The Geography gives us a complete version of latitude and longitude

Ptolemy’s theories of latitude and longitude are the QUINTESSENTIAL example of the power of ABSTRACTION

A COMPLETE SYSTEM THAT EXPLAINS THE EARTH BUT CANNOT BE SEEN.
The **cosmos** is a complex and orderly system; the opposite of chaos. It is the universe regarded as an ordered system. The philosopher **Pythagoras** is regarded as the first person to apply the term *cosmos* (Ancient Greek: κόσμος) to the order of the universe. The 19th century geographer and polymath, Alexander von Humboldt, resurrected the use of the word *cosmos* from the ancient Greek, assigned it to his multi-volume treatise, Kosmos, and, along the way, influenced our present and somewhat holistic perception of the universe as one interacting entity.
whole of Aristotelian philosophy is one gigantic lesson in the power of abstraction.

His Logical Works are model for all phil thinking until 17thC.
Categories and Abstraction

Categories is part of whole Logical Corpus (called the Organon, or the instrument for logical thinking)

The Logical works were produced in order to arrive at "scientific knowledge"

thus the procedures for thinking would be "scientific"

correct

rational

they are drawn out of experience

in the Categories:

out of language / words / attributes etc.

thus Aristotle shows us and then sets the model for 1000 year of how to take out experience and draw out of it principles ideas that would be bigger / better / enduring

he shows us how to ABSTRACT from experience.

drag out of tractor subtraction
important to realize that all that Aristotle does, all that he accomplishes in the great project of abstraction drawing out truth from human experience is possible because of the GREEK LANGUAGE and the reality that it allows this kind of thought/abstraction.

Egyptians never reach this kind of philosophical level because the Egyptian language with its hieroglyphics/pictograph structure does not easily allow abstraction.

Thus we see again that Greece & Greek Achievement=Lanaguage. (ALEXANDER)
Aristotle's goal: knowledge, sure knowledge, secure knowledge

"scientific knowledge"

but before we can have knowledge

we need to know what it is that we need knowledge about:

what is the basic center of all existence
and therefore all knowledge?

what is real? what is existence? what is being?

Scientific knowledge must be knowledge about reality.

It must be about real things.

But what is reality?

What things are real?

and this question for Aristotle becomes:

what is "substance" (or what is "essence")

a typical Greek way of thinking about being/reality/existence

ie. what is the "substance" that is at the center of all
life/being/reality?

So Aristotle asks:
What is being?

That is, what is "substance?"

that is: what is the most basic building block of all reality
a reality that we CAN know,

This is subject of **ONTOLOGY**

**THE CATEGORIES IS AN ONTOLOGICAL ESSAY**

ontos = being, or existence

logy = logos = speech, word, reason (logic)

NOTICE in this **Greek etymology**
is **clue** to Aristotle's whole corpus
about reason and logic.

thus: **to reason about something**

means same as to speak about something...

ie speech and reason seemed synonymous to Aristotle's age.
Aristotle's Heritage on Being:

1) the materialists: being/bedrock reality is in some material ....
gold is substance; silver is substance; etc

2) others said that bedrock part of things is substance (reality, being)
such as atoms

3) others said that ultimate being, reality was in numbers:
Pythagoreans
a permanent ultimate numerical order lives and gives meaning to the
apparent flotsam and jetsam of life and change.

4) finally the Idealists (Plato)
said there was an ultimate reality away from this world of material,
an Ideal world (the world of Forms), that gives all permanent
meaning logic to this world of material....so reality is in the Idea....
what counts is not an individual cow but the permanent immutable
Idea of cow off in the world of Forms....

Aristotle rejected all of these answers.

for Aristotle,
ultimate reality is in the things we can see and reason about
in plants, animals, man, planets, sun, moon,

there is no distant Ideal world apart from what we see.

What you see is what you get.

job of the philosopher is to build a system ,

a logical system of thinking about the things of our world
about the "furniture" of the perceptible world.

to reason about the substance/being of THIS world.
So what's the subject of *Categories*?

classifying types of "predicate"

predicate comes from: prae—out, out in public
dicere—to say

which is the Latin for Aristotle's *Kategoria*

(notice whole etymological basis of this is SPEECH!!!!!!!)
this is a linguistic term & logical one (thanks to Aristotle)

means: that which we can attribute to something else

is just like in a sentence when we say the predicate is something that
expresses something about the subject.
(The house is white....
(The man hit the dog...

The same in logic,

and *The Categories* tries to classify the different types of predicate.

examples of predicate:
about: Aristotle
what is he? a man
predicate

noun  GRAMMAR

/predɪkət/  

1. the part of a sentence or clause containing a verb and stating something about the subject (e.g., went home in John went home).

"predicate adjective"

verb
So what's the subject of Categories?

classifying types of "predicate"

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e.x. of predicate:
about: Aristotle
what is he? a man
...is 5'11" tall.

how tall? 5'11"
what color? white
how related to other things? father of Nicomachus

now Aristotle in Categories and Prior A. and Posterior A. etc is always trying to work out LOGIC
with which one can attribute a to b...
so now what are THE CATEGORIES
substance: a man  Aristotle(ie irreducible)
quantity: 5'11"
quality: white (etc)
relative: (to other things) larger, smaller etc
location: lyceum
when: yesterday
position: standing
having: shoes on
acting on: teaching
being affected: learning
NOW HERE IS THE KEY STEP:

these are called Aristotle's Categories
  ie the tool he used,
  the things that could be logically attributed to the BEING
  now become Categories in his system.

BUT MORE SPECIFICALLY

they are called:

Aristotle's "categories of being"

and he himself refers to them as
  "classes of things that exist"

a short jump to Aristotle's categories of being.

IN OTHER WORDS: A LOGICAL PROCEDURE TO DISCOVER
WHAT UNDERLIES ALL BEING ARRIVES AT THE DISCOVERY /
ASSUMPTION THAT LANGUAGE
(SINCE ALL OF THIS IS MERE LINGUISTIC REASONING)
ALWAYS MIRRORS REALITY/BEING.
And this is the ultimate truth of the whole Socratic/Platonic/Aristotelian phil tradition.

ey could never believe, never imagine

that there would be some huge divine hoax to deceive us all

in which language would somehow inaccurately mirror reality.

they were all too imbued with the rhetorical tradition to question this primary assumption of their own logic and their life.

but 18th/19th/20th Century
HAS QUESTIONED THIS VERY THING.!!!!!!!!!!
Plato and Aristotle

In Raphael’s *School of Athens*,
Plato looking to higher world
and Aristotle gesturing down to material world.

Greek philosophy could be split in two at the time of
Plato and Aristotle,
*Material* and *Non-Material*,
and that is reflected in the painting.

The two had much in agreement:
- both opponents of Materialism,
- real knowledge of real universe possible
- act of cognition spiritual process/act is the highest act of man
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