

History of Western Philosophy

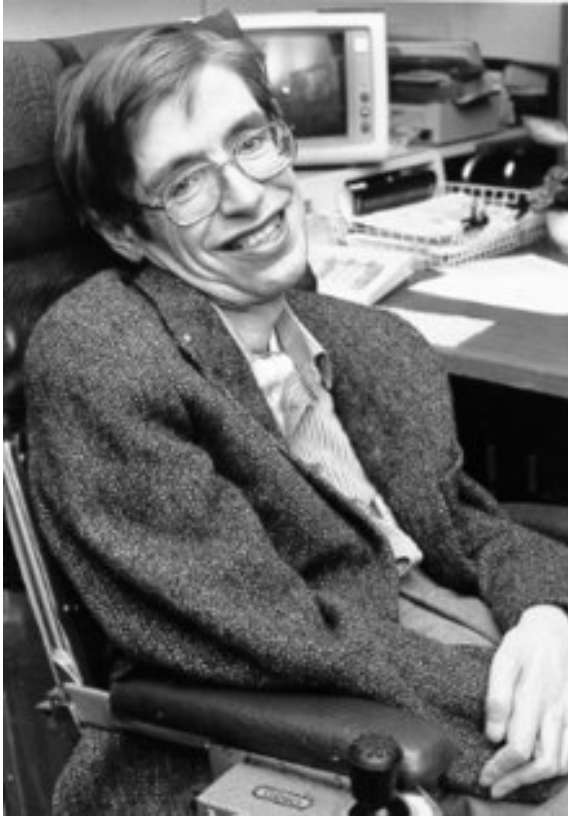
Kookmin University

Peter Lee, Spring 2019

L03

- The Pre-Socratics and Cosmologies II
- The Sophists

In Memoriam: Stephen Hawking

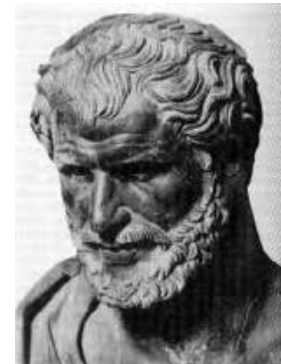
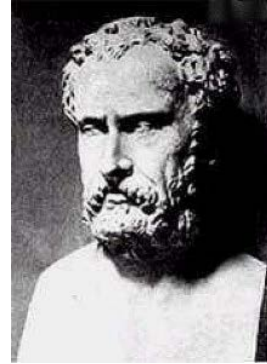
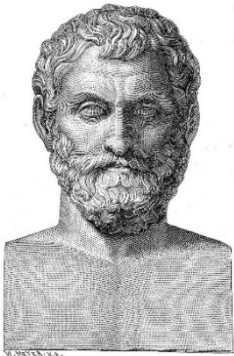


(1942 – 2018)

“Remember to look up at the stars and not down at your feet. Try to make sense of what you see and wonder about what makes the universe exist. Be curious. And however difficult life may seem, there is always something you can do and succeed at. It matters that you don’t just give up.”

Pre-Socratics on *Arche*

- Pre-Socratics studied nature (physis) – first physicists:
- **Thales**: the basic element is **Water**.
- **Anaximander**: the basic element is the “**Infinite**” or “unlimited.” Ultimate reality is unknowable.
- **Anaximenes**: the basic element is **Air**.
- **Xenophanes**: the basic element is **Earth**.
- **Heraclitus**: “Everything is **Fire**”



Heracclitus: Change

- The last and most famous of the Ionian philosophers (~535-475 BCE).

- **Philosopher of Change:**

“Everything is Fire” / in Flux.

- No arguments, just quotes; a mystic.

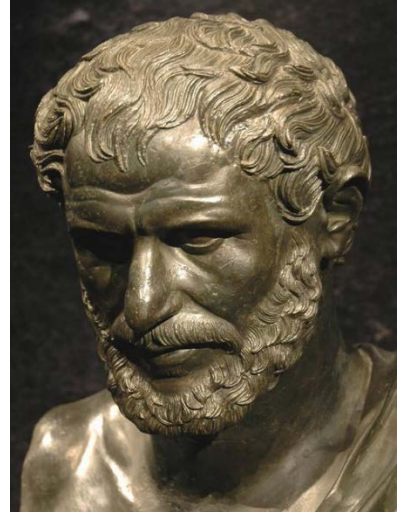
“You cannot step into the same river twice.”

“The only constant is change.”

“Everything flows and nothing abides.”

“The way up and the way down are one and the same.”

“War is the father and king of all things.”



Heraclitus: Change

- That things change is trivially true, the very description of *Doxa* (appearance).
- He denies the existence of eternally unchanging element: no fundamental element (*Arche*) of reality.
- So “Fire” is used symbolically [common interpretation].

“This world, which is the same for all,
no one of gods or men has made;
but it was ever, is now and ever shall
be an **ever-living fire**, with measures
kindling and measures going out.”



Heraclitus: Change

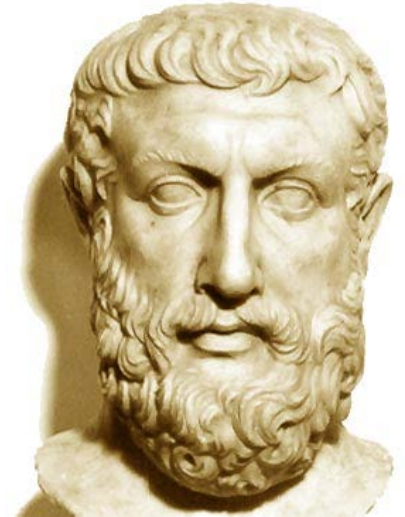
- “**Logos**” (word, reason), law which governs all things.

“Heraclitus spoke of a great Word or *Logos* which holds forever and in accordance with which all things come about.” [CR: 11]

- *Logos* is **Constant**, but it seems to be some kind of force or principle, not substance. [cf. *Logos* in the Bible]
- Modern science describes reality governed by four fundamental forces (like *Logos*):
 - 1) gravity
 - 2) electromagnetism
 - 3) weak interaction
 - 4) strong interaction

Parmenides: Being

- Probably a pupil of Xenophanes, lived in Elea in Italy (~515-440).
- **Philosopher of Being** [*Onto*]
- Poem: *On Nature* [only fragments remain]
The Way of Truth / Appearance (*doxa*)
- **Being** includes all existing things; everything that can take the verb “to be.”
- “Anything that can be at all, must be something or other; it cannot be just nothing.” [CR 15]
- This seems trivially true: cosmos exists (has **Being**).



Parmenides: Being

“Nothing can come from nothing.”

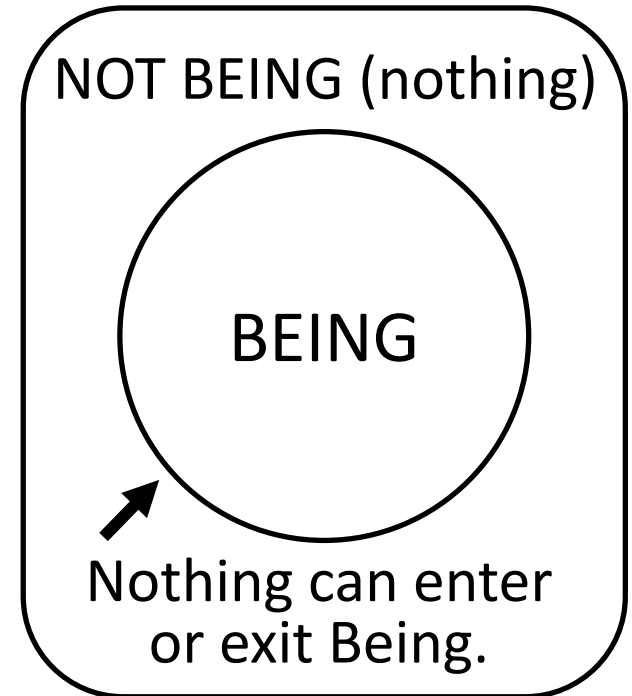
“Thought and Being are the same.”

- **Argument for Being** (or Monism):

- 1) Being is.

- 2) Unbeing is.

- 3) Both Being and Unbeing are.



- But 2) cannot be; “unbeing” cannot BE anything.
- If 2) is false, 3) is false, but 3) is needed for becoming.
- If there is no becoming, there is no (true) change.

Parmenides: Being

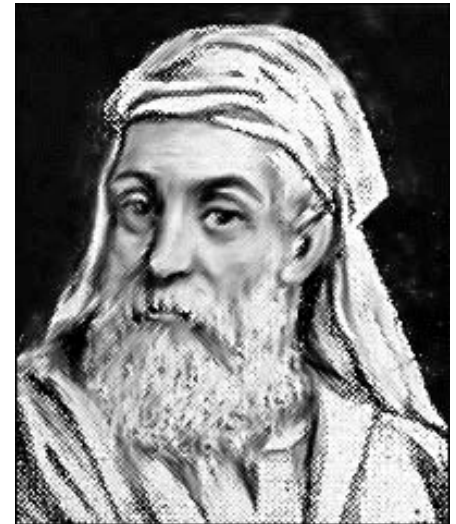
- Consequences:
 - Being must have no beginning, no end; it is infinite.
 - Being must be one and undivided; no multiplicity.
- Changes seem to happen (appearance: ***doxa***), but Being itself admits no change. Change is illusory.
- “If it is some kind of being, then it is all part of Being, and **past**, **present** and **future** are all one Being.” [CR: 16]
- **Eternalism** (block universe theory of time) is thus referred to as Parmenidean: nothing ever disappears; we have always been, are, and will be (exist).

Parmenides: Being

- Karl Popper, describing his encounter with Einstein:
“The main topic of our conversation was indeterminism. I tried to persuade him to give up his determinism ... the view that the world was a four-dimensional Parmenidean block universe in which change was a human illusion ... while discussing it I called him ‘Parmenides’.”
- Law of Conservation of Energy: Total energy ... stays the same. Energy can’t be created or destroyed, only undergo *change of form* [appearance].
- **Problem** with “Thought and Being are the same”:
Do things like ‘blue’ or ‘unicorn’ also exist?

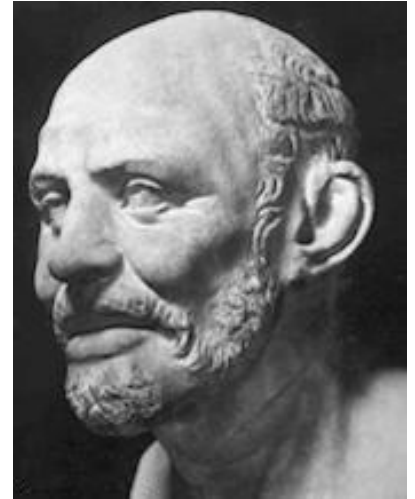
Being after Parmenides

- Thales and other Pre-Socratics believed in **one** fundamental element (*Arche*): earth, water, air, etc.
- But with Parmenides, how do we argue for change?
- **Empedocles**: (~495-435)
- All four elements are “Roots” of reality (do not come into being or perish)
 - “*Arche* is many”;
 - controlled by **Love and Strife**.
- Love brings the elements together; Strife tears them apart.



Being after Parmenides

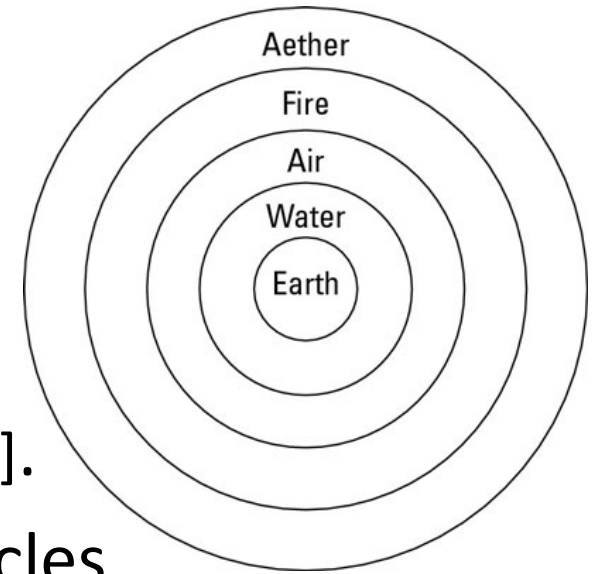
- **Democritus: Atomism** (~460-370)
- Believed in 'atoms' (indivisible), infinite in number and kind, and empty space.
 - "*Arche* is many";
- "By convention sweet, by convention bitter, by convention hot and cold, and color, but in reality, atoms and void."



eg. When we taste honey, it tastes sweet; but "sweet" exists only in our mind. Even the object "honey" does not exist. It is only atoms and void, nothing else is real. [reductionism]

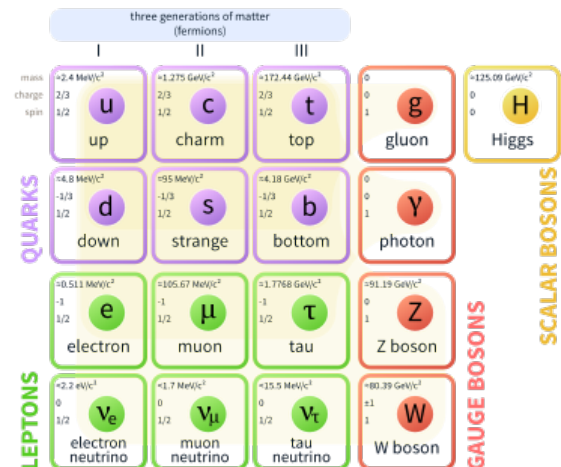
Being after Parmenides

- Aristotle: earth, water, air, fire
+ ether (quintessence)
- **Atomism**: until 20th c. discovered
118 chemical elements [periodic table].
- Standard model of elementary particles



Periodic Table of the Elements																		19					
1 H Hydrogen 1.008																	2 He Helium 4.003						
																		3 Li Lithium 6.941	4 Be Beryllium 9.012				
																		5 B Boron 10.81	6 C Carbon 12.01	7 N Nitrogen 14.007	8 O Oxygen 15.999	9 F Fluorine 18.998	10 Ne Neon 20.180
11 Na Sodium 22.990	12 Mg Magnesium 24.305											13 Al Aluminum 26.982	14 Si Silicon 28.086	15 P Phosphorus 30.974	16 S Sulfur 32.06	17 Cl Chlorine 35.453	18 Ar Argon 39.948						
		21 K Potassium 39.098	22 Ca Calcium 40.078	23 Sc Scandium 44.956	24 Ti Titanium 47.867	25 V Vanadium 50.942	26 Cr Chromium 51.996	27 Mn Manganese 54.938	28 Fe Iron 55.845	29 Co Cobalt 58.933	30 Ni Nickel 58.693	31 Cu Copper 63.546	32 Zn Zinc 65.38	33 Ga Gallium 69.723	34 Ge Germanium 72.631	35 As Arsenic 74.922	36 Se Selenium 78.96	37 Br Bromine 79.904	38 Kr Krypton 83.798				
		39 Rb Rubidium 84.468	40 Sr Strontium 87.62	41 Y Yttrium 88.906	42 Zr Zirconium 91.224	43 Nb Niobium 92.906	44 Mo Molybdenum 95.94	45 Tc Technetium 98.906	46 Ru Ruthenium 101.07	47 Rh Rhodium 101.07	48 Pd Palladium 106.42	49 Ag Silver 107.868	50 Cd Cadmium 112.414	51 In Indium 114.818	52 Sb Antimony 121.757	53 Te Tellurium 127.6	54 I Iodine 126.905	55 Xe Xenon 131.29					
		57 Cs Cesium 132.905	58 Ba Barium 137.327	Lanthanides		72 Hf Hafnium 178.49	73 Ta Tantalum 180.948	74 W Tungsten 183.84	75 Re Rhenium 186.207	76 Os Osmium 190.23	77 Ir Iridium 192.225	78 Pt Platinum 195.084	79 Au Gold 196.967	80 Hg Mercury 200.59	81 Tl Thallium 204.38	82 Pb Lead 207.2	83 Bi Bismuth 208.98	84 Po Polonium 209	85 At Astatine 210	86 Rn Radon 222			
		87 Fr Francium 223	88 Ra Radium 226	Actinides		104 Rf Rutherfordium 261	105 Db Dubnium 262	106 Sg Seaborgium 266	107 Bh Bohrium 264	108 Hs Hassium 277	109 Mt Meitnerium 268	110 Ds Darmstadtium 271	111 Rg Roentgenium 272	112 Cn Copernicium 285	113 Nh Nihonium 284	114 Fl Flerovium 289	115 Mc Moscovium 288	116 Lv Livermorium 293	117 Ts Tennessine 289	118 Og Oganesson 294			
17 La Lanthanum 138.905		58 Ce Cerium 140.12	59 Pr Praseodymium 140.908	60 Nd Neodymium 144.24	61 Pm Promethium 144.913	62 Sm Samarium 150.36	63 Eu Europium 151.964	64 Gd Gadolinium 157.25	65 Tb Terbium 158.925	66 Dy Dysprosium 162.50	67 Ho Holmium 164.930	68 Er Erbium 167.259	69 Tm Thulium 168.934	70 Yb Ytterbium 173.055	71 Lu Lutetium 174.967								
89 Ac Actinium 227.028		90 Th Thorium 232.038	91 Pa Protactinium 231.036	92 U Uranium 238.029	93 Np Neptunium 237.048	94 Pu Plutonium 244.064	95 Am Americium 243.061	96 Cm Curium 247.070	97 Bk Berkelium 247.070	98 Cf Californium 251.083	99 Es Einsteinium 252.083	100 Fm Fermium 257.105	101 Md Mendelevium 258.105	102 No Nobelium 259.108	103 Lr Lawrencium 260.105								

Standard Model of Elementary Particles



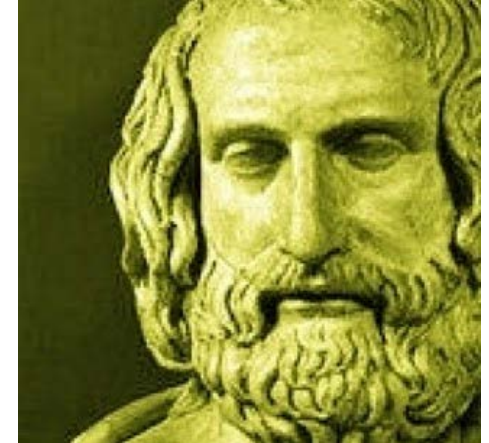
The Sophists and Sophism

- “**Sophism**”: To argue in a persuasive but ultimately fallacious way or to be deceitful.
- “Sophistry”: Subtly deceptive reasoning.
- The Sophists were peripatetic teachers who taught for a fee (first professional educators).
- Taught various topics, but mainly rhetoric.
- Critics (Socrates, Plato): they’re not real philosophers.
- Plato: Sophists are a bad influence on the young, for they encourage skepticism, relativism, cynicism.
- Why were (are) they such a threat to philosophers?

Protagoras: Man

- The most famous of the Sophists (~490-420 BC), an agnostic (?):

“About the gods, I cannot be sure whether they exist or not, or what they are like to see; for many things stand in the way of knowledge of them, both the **opacity** of the subject and the **shortness** of human life.” [CR 19]



- Most famous saying:
“**Man is the measure of all things**, both of things that are that they are, and of things that are not that they are not.” [CR 19]

Protagoras: Man

- Made “human beings” central: the **First Humanist**.
- Negative interpretation: If I am the measure of all things, there is no absolute right or wrong; truth is relative.
 - This is **Relativism** (or sophism)
 - no objective truth [leads to Postmodernism]
- Positive interpretation using the principle of charity:
 - “man” is collective; knowledge is relative to **us**.
 - we all agree on what knowledge is [cf. Kant]

NEXT WEEK: L04 Socrates