Metaphysics & Epistemology 形而上学&认识论

1. Matter = physical stuff 组成事物的成分

Form = property of sth. 事物的性质（property不能相加）

↳ 比如人的性质是独特的而非各组分之和.

*"Form" defines "matter".

Form + Matter = Objects 成分+性质=具体事物本身

2. Knowledge

① 来源于True teal things

② 方式 Sense experience —repeated→ memory ⟶ intuition → application.

deductive phase 演绎

inductive phase 归纳

3. Change

① Change = from potentiality to actuality

② 4类change：A. generation & corruption（产生和毁灭）existence

B. alteration（性质的变化）quality

C. augmentation & diminution（变大变小）quantity

D. local motion（局部运动）place

③ 引起change的原因：

四因说：Formal cause / material cause / efficient cause / final cause

形式因 质料因 动力因 目的因

主导

天空为什么下雨？

云层中温气冷却凝结变成雨滴 ← 动力因.

Aristotle's world is ordered & organized with purpose.

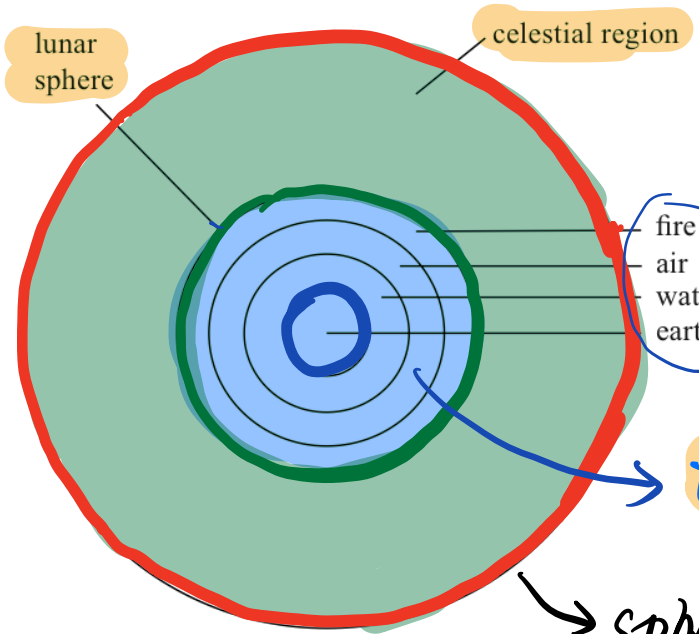
质料因 形式因
受重力吸引 降落在地面上
滋润了地面上的植物和动物
↳目的因.

万事万物存在皆有其目的.

Cosmology 宇宙学.

1. vacuum 不存在:
   void ⇒ 人会有 infinite speed ⇒矛盾 ⇒ vacuum 不存在
   (空)

2. 宇宙分布及元素:



They're changing
cold+dry = earth
cold+wet = water
hot+wet = air
hot+dry = fire

fire, air ⇒ heavy
water, earth ⇒ light

terrestrial region

sphericality 球形

Fig. 3.3. The Aristotelian cosmos.

3. 宇宙的性质: 所有物体因其 nature 靠近宇宙中心

celestial region → 由 aether (以太) 组成
eternal 永恒

由 fire, air, water, earth 基本元素构成 → terrestrial region
changable 可变

Motion

1. There is no motion without **Movers**. → nature of body
2. projectile motion 炮弹发射后 Medium (air) → Mover
3. $v \propto F/R$ (后人总结)

规律：在其它条件相同时，质量越大速度越大.

4. 三类运动：Natural motion / Violent motion / Celestial motion

To its natural place　　be pushed or pulled　　prime mover

Aristotle	4-element theory
Avicenna and Averroes	Refusing Aristotle's idea of "motion by nature"
John Philoponus	Idea of "impressed motive force"
Mertonians (Conceptual framework →)	Definitions of velocity, acceleration and the mean-speed theorem of uniformly accelerated motion (technical vocabulary →)
Oresme	Geometrical proof of mean-speed theorem
John Buridan	Idea of "impetus" to explain motion

↓ 惯性

*区分 impetus 惯性 ($\vec{v}$ × quantity of matter) Cause

momentum 动量 ($\vec{v}$ × mass) Measure

区分 intensity : degree 和 quantity : how much

强度　　数量.