

## Block 1.4: History & Methods of Psychology

Philosophical Roots of Psychology, Mind Body Problem

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### Thales of Miletus (640–550 BC) and the “Milesian” philosophers

- turned away from supernaturalism
- raised two fundamental topics in philosophy

#### 1. Ontology

- “*What is the universe in reality?*”

#### 2. Epistemology

- “*How is experience generated by it?*”

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### Elementalism and Reductionism

#### Elementalism

- seeks to understand a complex phenomenon by breaking it up into component parts.
- body and its subsystems (e.g. nervous & cardiovascular) and its component parts (e.g. cellular, molecular & atomic).
- All these components are biological and remain at the same level (non-reductive)

#### Reductionism

- two different domains or levels of organization
- explains the higher level in terms of the lower-level phenomena
- *Example:* mental functions in terms of the underlying biology/neurology
  - ignoring the influence of development, sociocultural, etc...
  - The impact of language, of ideas and meanings is lost

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### Parmenides

#### Appearance versus Reality

- impossible to have knowledge of that which is changing continuously
  - How can one know with any certainty whether something different tomorrow?
  - In order to arrive at a true understanding one must seek what is eternal and constant (**Being**)
  - The material world revealed by the senses is of appearance and illusion and of **Becoming**.
  - Truth, which is in **Being**, is revealed not by the senses but by **reasoning!**

#### Rationalism

- we can only access true knowledge via reasoning (cf. **Plato**)
- determiner of truth is reason
- **Idealism** (cf. mind-body problem), since the principle of ‘Being’ is a merely concept

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## First philosophers

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### Ontology

“*What is the universe in reality?*”

- origins of nature: existing things are formed by **substances**
- Is there both mind and matter, physical and non-physical things?
- **Monism, Dualism, and Pluralism**

### Mechanism and Determinism

Early **atomists** such as *Leucippus* (5th century BC) and *Democritus* (460–370 BC)

- everything (body & mind) is just a collection of atoms
- fiery atoms come together with mass (matter) → alive & consciousness
- fiery atom loss mass → sleep or death
- qualitative differences are explained by reduction to quantitative differences (changes in spatial movements)

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### Epistemology

“How is experience generated by it?”

- What do/can we know?
- Role of perception in knowledge

### Heraclitus

- stressing change
- “**Becoming**” in contrast to “**Being**”
- “*everything is in constant flux*”

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### Appearance versus Reality in Modern Psychology

The problem of knowledge or epistemology is a psychological problem!

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(A) Vertical-Horizontal Illusion (1850): Despite being the same length the vertical line appears longer.

(B) Oppel Illusion (1854): Despite being the same length the filled-in portion appears longer than the blank portion.

(C) Zöllner Illusion (1860): Despite being parallel the hatched lines appear to converge.

(D) Müller-Lyer Illusion (1889): Despite being the same length the upper horizontal line appears longer than the lower one.

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- Helmholtz (1866)
- distal stimulus (objective object, "reality")
  - proximal stimulus (sensory representation, appearance).

## Mind-Body Problem

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**What is the Mind-Body Problem?**

Inconsistent tetrad

1. The mind is a nonphysical thing.
2. The body is a physical thing.
3. The mind and the body interact.
4. Physical and nonphysical things cannot interact.

**One notion must be wrong**

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**Dualism**

Mind and Body are different identities or substances

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**Réne Descartes (1596–1650): Cartesian Dualism**

**Law of Contradiction**

- Opposites are mutually exclusive.
- holds that something cannot both *be* and *not-be* ( $A \neq \text{not-}A$ ).

1. Sensory experience could be deceptive (illusions) or we could be dreaming. Thinking must be completely independent of the body.
2. Different substances
  - **Body: spatial** (location and extended) and **divisible**
  - **Mind: non-spatial** (no location, no extend) and **indivisible**
  - They must be two distinct entities
3. Mind and body must be considered incommensurable (having nothing in common).

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**Descartes: Interactionism**

- **Mind and body interact**
- *Example:* hand on fire  $\rightarrow$  pain

Pineal gland in the brain is the "contact point" between mind and body

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**Critique**

How can physical and non-physical things interact?

1. **The mind is a nonphysical thing.**
2. **The body is a physical thing.**
3. **The mind and the body interact.**
4. Physical and nonphysical things cannot interact.

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**Occasionalism**

Nicolas Malebranche (1638–1715)

- Mind and body are completely separate and independent,
- but an correspondence exists between them,
- (Christian) God as the cause of everything in the universe
- God maintaining the correspondence.

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## Double Aspect Theory

Benedictus Spinoza (1632–1677)

- there is only one substance (God)
- the mental and the physical as attributes of God
- dualistic view, attributes do **not interact**
- but they are associated due to the same influence of the natural laws that affect both



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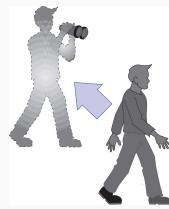
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## Epiphenomenalism

Thomas Huxley (1825–1895)

- epiphenomena appears **in addition** to the basic phenomena
- physical events cause mental events but mental events do not cause physical events.
- mind is a by-product of the mechanism of body
  - like steam of a running locomotive
- volition is an emotion that “indicate” physical changes, but that does not cause it
- What about the possibility of free will?



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## Materialism

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## Eliminative materialism II

### Identity Theory

- Neuroscience led to an alternative materialist theory
- Mental states are nothing else than states of the brain (neuronal activity)

### Critique

- Eliminativist deny the phenomena like
  - mental images, experiences, pains, desires, beliefs, judging, questioning, inferring, and asserting
- difficult to get around experience (cf. **qualia**) as the basis of knowledge → you to account for awareness and subjectivity

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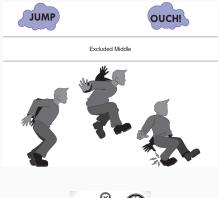
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## (Psychophysical) Parallelism

Gottfried Leibniz (1646–1716)

- mind and body are parallel (do not interact)
- they are correlated
- **pre-established harmony**
- Examples
  - synchronized clocks
  - Example: multiple choirs singing the same song



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## Monism: Idealism & Materialism

The rejection of the proposition that both mind or matter exist.  
There is only one thing

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## Eliminative materialism

“*There is no mind!*”

- Eliminativism resolves the mind–body problem by removing mind
- **anti-mentalism**

### Behaviourism in Philosophy and Psychology

- Sensation and perception are discriminatory responses to different stimuli
- the mind is not observable and can't be investigated
- see last lecture:
  - problems of introspection vs.
  - qualitative measurements of the mind (just noticeable difference)

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## Naturalism

- “weak” form of materialism
- **not reductive** materialism
- acknowledges thoughts, feelings, emotions, and rational inquiry
- but it would be pure speculation to assume that mental events did not depend on physical processes
- Mental events are contingent on physiological events
- if there is no organized bodies, there would be no mental states

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## Idealism/Anti-materialism

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### Idealism/Anti-materialism

Idealism states that everything, including the body, is non-physical or mental.

- Materialist have difficulties explaining the non-physical experiences of our senses (**qualia**).

How can the body be non-physical?

- **Phenomenalism** tries to solves this
- all statements about physical things (incl. the body) are at bottom statements about experiences.

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### Excursus: Qualia

Thomas Nagel (1974): "What Is It Like to Be a Bat?"

- **Example:** Even if we know all physical facts about echolocation, we don't understand what it feels like to be a bat.



**Qualia:** The concept of **subjective experience** in philosophy

- challenges reductionist theories of the mind
- questioning whether all aspects of the mind can be fully reduction to physical processes

Nagel's conclusion: organism's mind and experiences are inherently subjective and can be understood only from its own point of view.

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### Neutral monism

- the world consist of one primal stuff (neither mental nor physical).
- W. James call "pure experience"
- Modern concepts might be something like "energy"

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## Is the mind-body problem a useful question?

### Gilbert Ryle (1900-1976)

- criticized (Cartesian) dualism
- the mind-body problem was a valid question (in contrast to Dewey)
- refutes substance dualism as well as monism (idealism and materialism)



### Category Mistake

- Body and mind are different categories (or levels of description) of same thing
- Examples of this logical mistake
  - a. Visitor at the University of Oxford. After seeing everything there he ask "...and where is the university?"
  - b. Why is it wrong to say: "There are 3 things in a field: two cows & a pair of cows"?

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### Questions?

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## Upcoming Tutorial Meetings

### Week 3: Mind-Body Problem

- Ontological question
- philosophical debate concerning how the mind and body are connected
- issue in philosophy, psychology, and neuroscience.

### Week 4: What is Science?

- Epistemological question
- What are the criteria of good or bad science?
- What distinguishes science and pseudoscience?
- How should science be or in other words, whether there are established norms for scientific practice.

Thank you very much