CHAPTER TWO

The Philosophical Approach: Enduring Questions
The Philosophy Perspective

- Philosophy is the search for knowledge.
- The branch of *metaphysics* examines the nature of reality.
- The branch of *epistemology* is the study of knowledge.
The Mind-Body problem

- Describes the seeming incompatibility between the physical properties of the brain and the mental qualities of the mind.
- The brain is material and physical and can be studied objectively.
- The mind consists of subjective phenomena such as thoughts, feelings, and beliefs.
- Is the mind physical?
Monism

- According to *monism*, the mind and the body are both made up of the same substance, either mental or physical.
- Aristotle (384—322 B.C.) advocated a physical form of monism. He believed the mind and body were both physical.
- He stated that aspects of mind correspond to the different physical states the brain assumes.
Dualism

- Plato (427—347 B.C.) was a dualist.
- *Dualism* argues that mind and body are of two different natures; the brain is a physical substance and the mind is a mental substance.
- Plato thought the body resided in a world that is material, extended, and perishable.
- The mind, he believed, resided in an ideal world of forms that was immaterial, non-extended, and eternal.
More on Monism

- According to monism the world is either mental or physical.
- If entirely mental, then we have *idealism*. The universe as God’s mind.
- Not scientifically testable but cannot be falsified.
- If entirely physical then we have *physicalism*. The universe as material.
Mental Terminology

- *Identity theory* – the mind is the brain.
- Specifically, mental states are physical brain states.
- Should we get rid of mental language?
- *Eliminativism* says yes, let’s use only physical objective scientific terms like “neuron”.
- *Folk psychology* uses familiar subjective terms like “tired”.
Evaluating Monism

- Monism is simpler, there is only one set of terms. Occam’s razor.
- It is the scientific view.
- Lot’s of evidence to support the brain’s role as the mind.
- However, pain may be different in different people, animals, etc.
- This is the notion of multiple realization.
More on Dualism

- *Classical dualism* started with Descartes (1596-1650).
- He thought the mind controlled the brain and body through the pineal gland.
- *Substance dualism* holds that mind and body are composed of different substances.
- The body is made up of atoms.
- What is the mind made up of?
In this view, mind and body are made up of the same stuff but have different properties. Like a golf ball and a tennis ball, they act differently. Not much gained here. How do atoms give rise to non-physical properties?
Evaluating Dualism

- It could be that the mind is all of the brain’s parts and properties taken together.
- Where is the university?
- Dualism tells us what the mind isn’t, not what it is, so this is not an explanation.
- If mind and body are different they can’t interact causally.
- Too complex. Even if they can interact how are the two coordinated?
A mind is the result of the execution of certain processes or functions. These functions can give rise to mind no matter what the physical substrate in which they are embedded.
Evaluating Functionalism

- It cannot account for the subjective quality of mental states.
- Specific states like seeing red are *qualia*.
- We can program a computer to see red but does it experience qualia?
- The fact that qualia may be different in different people or machines only complicates the matter.
The knowledge acquisition problem

- How does knowledge get into our heads?
- According to nativism we are born with knowledge.
- According to empiricism knowledge is acquired through experience.
- The nature—nurture debate argues over the relative contribution of genetics and experience to any given trait.
Evaluating the Knowledge Acquisition Debate

- Declarative knowledge for facts is probably not innate.
- But many forms of procedural knowledge for behaviors are.
- Infants demonstrate many reflexes that cannot have been learned.
- Smell preference is also innate.
Consciousness-The Ultimate Mystery?

- *Consciousness* may be defined as the subjective quality of experience. What it is like for us to see, feel, think, etc.

- The *phenomenal concept of mind* refers to this subjective aspect of mental life and may never be adequately explained.

- The *psychological concept of mind* refers to how the mind causes and explains behavior and is easier to study.
The Consciousness Problem

- The *easy problem of consciousness* is in determining what brain activity underlies different forms of experience. It can be done by cognitive science.

- The *hard problem of consciousness* requires explaining subjective experience and cannot be explained by cognitive science.

- The difference between these two is known as the *explanatory gap*. 
What is it like to be a Bat?

There is something that it is like for a bat to experience echolocation (Nagel, 1974).
Forms of Explanation

- **Reduction** – explaining everything in terms of parts.
- **Emergence** – explanation requires an understanding of parts and how they interact.
- The mind may be an emergent property of the brain (Searle, 1992).
- Water emerges from the interaction of H$_2$O molecules but cannot be explained entirely by their individual properties or interactions.
Consciousness – One or Many?

- It seems like we have a unitary mental experience - that there is one self or “I”.
- The notion of the *Cartesian theater*.
- The *homunculus* and the problem of infinite regress.
- But most neural processing happens in parallel. There is no “CPU” or place where it “all comes together”.
The Multiple Drafts Theory of Consciousness

- Dennett (1991) argues that we are simultaneously processing information in multiple streams.
- Consciousness therefore does not happen at any single place in the brain.

- Mental activity occurs in parallel.
- “Streams” correspond to different sensory inputs or thoughts.
- Editing occurs in each stream.
- Consciousness can happen anywhere, not just at the end.

Diagram:

- Stream 1 (sights)
  - Edit
  - Awareness

- Stream 2 (sounds)
  - Edit
  - Awareness

- Stream 3 (touch)
  - Edit
  - Editing can consist of subtractions, additions, and changes.
Consciousness and Neuroscience

- Consciousness is the emergent property of neuronal activity (Popper & Eccles, 1981).
- Consciousness may be the product of specialized consciousness neurons (Crick & Koch, 1995).
- Other theories postulate the existence of a cortico-thalamic circuit in which information is passed recurrently between the cortex and thalamus (Churchland, 1995).
- The *neural correlates of consciousness* (NCC).
Consciousness and Artificial Intelligence

- Can a machine become conscious?
  - According to the strong AI view, the answer is yes. It is a matter of building more complex, sophisticated machines.
  - According to the weak AI view, the answer is no. Consciousness is either nonphysical or is so complex it can never be reproduced artificially.
The Chinese Room Scenario

- Can a person who follows rules to translate Chinese ever understand the language?
Interdisciplinary Crossroads: Binocular Rivalry

- Each eye views a different pattern.
- We perceive only one of these two patterns at a time, alternating and not a fusion of each.
- The pattern of brain activity changes when the percept changes.
- A start toward building a complete NCC.