

Isms in the Philosophy of Cognitive Science

(or: Things to get out of your chest before doing serious CogSci)

got some of it from Andy Clark
who got some of it from various sources
who got some of it from various other sources
who got it from Aristotle
..... who got it from four Ionians

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Three aspects of philosophy of cognitive science:

- The research program:
 - To understand the mind, we need to understand the brain (roughly, cognitive neuroscience)
 - To understand the brain we need to understand the mind (roughly, cognitive science)
- The method: the idea of computer is
 - Necessary for this understanding
 - unnecessary
 - sufficient
 - insufficient
- Ethics: The computer's role in personal lives and society raises/does not raise ethical issues
 - for the public
 - for the public, computers, and promoters of technology

- Everything is physical, including the mind.
- Also known as *Supervenience physicalism*.
- David Lewis:

A dot-matrix picture has global properties— it is symmetrical, it is cluttered, and whatnot—and yet all there is to the picture is dots and non-dots at each point of the matrix. The global properties are nothing but patterns in the dots. They supervene: no two pictures could differ in their global properties without differing, somewhere, in whether there is or there isn't a dot (1986, p. 14).



- Physical features of the world are like the dots in the picture,
- the psychological or biological or social features of the world are like the global properties of the picture.

- David Lewis= Hume




+ Leibniz



- Things exist.
- They exist independent of our experience.
- Things may be *empirically* dependent on other objects (tables, words?, thoughts?)
- There is no other sense in which they are dependent on conceptual schemes, our wording etc.
- Heisenberg 1958: We don't have direct access to reality except when we measure: "we have to remember that what we observe is not nature in itself but nature exposed to our method of questioning." (p.25)

- Reality, or reality as we can know it, is fundamentally mental, mentally constructed, or otherwise immaterial.
- Epistemologically, idealism manifests as a skepticism about the possibility of knowing any mind-independent thing.

- Plato (): Abstractions are more real than what we perceive.

- more accurately: reductionism in X.
- Concepts of X can be deduced from or explained by the concepts of Y.
- Chemistry can be reduced to physics?
- Language can be reduced to biology?

- Not synonymous with physicalism.
- Materialists: everything is made of matter.
- Physicalists: nope. Witness gravity. Not your old-style matter.
 - Empty space has physical properties (predicted by theory of electromagnetic processes)
- Scientific Naturalism: everything can be described by natural elements and principles.

Mind: the basic problem
Broad contexts
Dualism
Behaviorism
Mind-brain Identity Theory
Functionalism
Eliminativism
Instrumentalism

Parallelism
Epiphenomenalism
Interactionism

1. A certain kind of weakness toward



2. A certain kind of attachment to



- The mental and the physical world are separate and distinct.
- Mental world: beliefs, desires, thoughts, unicorns (?)
- Physical world: cats, dogs, you, unicorn drawings
- They are different because methods are different: introspection and perception
- Might tell you what mind is not. No word about what it can be.
- What mediates the two worlds?

- The mental and the physical are parallel universes
- They are synchronized
- By God, or by something like God
- Why synchronize? there seems to be causal links both ways
want to eat: eat, eat: happy

- The causal link is not both ways.
- The physical can cause the mental.
- The mental does not cause the physical.
- Your wanting to study does not cause you to read.
Your holding a book and visual tracing cause you to read.
- This isn't physicalism; we're still within the framework of dualism.
- critique: Why bother with special place of the mental then?
What is the benefit of introspection?

- Descartes: The two worlds are distinct but causally integrated
- Mental world affects the pineal gland, and that in turn affects your body.

The body influences the mind through the same route.

- problem: pineal gland does not do that, or any other singular mechanism

From body to mind: where does it all go? (the inner sanctum, or *Descartes's myth* of Gilbert Ryle)

The mental depends on the physical (eg. drugs)

Physical depends on mental? (the *how could a physical system do X?* argument). That seems to change over time.

Introspection: hard to argue against. Hard to avoid hard work if we avoid it.

- It is not that Cartesian Dualism is not possible, it seems quite unlikely

- Ryle (1949): Mindtalk is about organization of behavior itself.
- Rise above introspection and you'll see the organization.
- Mindtalk Philosophy makes the same mistake when someone asks, after seeing the library, dormitories, classrooms, lectures:
I can see all that, but where is the university?
- Mind is not something beyond its public manifestations.
- When Mary loves teaching, her actual and potential behavior follows a pattern (behavioral dispositions, not inner sanctum).
- If something is soluble, there is no spirit of solubility.
- Mental dispositions are more complex, but dispositions nevertheless.

Criticism:

- Black box: nothing sticks inside the box.
- Behavioral dispositions are either infinite or circular.

A belief can dispose an agent in infinite situations.

To avoid infinity we can refer to mental states, but then this is circular. (Mary continues to teach because she believes in teaching)

- Inner feelings and imagery seem real.
- It does not explain anything (how and why dissolve in water, likewise how and why continue to teach)
- What if I 'act' pain or suppress all expressions of pain?

- Theory *schemas*: types v. tokens of knowledge.
- MBI: Mental/psychological states are brain states.
- Can thoughts, beliefs, desires be brain states?

- Brain states must then satisfy Leibniz's law



If two descriptions pick out the same object, then whatever is true of one must be true of the other.

- As Frege noted, it does not apply to beliefs, so we get sense

and reference



- MBI: Leibniz's law is unreliable for beliefs, desires etc.
- Stronger objection to MBI: These states are *species chauvinist*.
- If pain is identified with region X, no species without X can be in pain?
- If type identity is true, do all people feel (the same) pain in the same place?
- Beliefs can be true, false, justified. What does it mean for a brain state to be true/false if they are identical?
- Alternative: token theory of MBI
Each individual occurrence of mental state is a brain state.
- Explanatory gap: Why do these states come in groups?
Avoiding behaviorism (not associating them with external states) but taking the question seriously leads to functionalism.

- Dennett: sun clock, grandma clock, your Omega and Casio do the same thing although they look different.
- Function, purpose and use may be doing the grouping of internal states.
- Mind is to brain what software is to hardware (early func.)
- Mind is a program (functionalist fundamentalism—not a technical term)

- Concern so far: A theory to account for mind and a description (dualist, behaviorist, functionalist) of its relation to world.

What kind of theory counts as a theory of mind?

- Eliminative materialism: this question is wrong-headed.



It assumes that beliefs, desires etc are real as they are.

- Mysteries were once thought to be real, eg. ether and earth-centered universe, but now they can be explained.
- Wait for science to come to a point where things can be explained.
- Use scientific method to critically assess whether the commonsense view (that these descriptions are real) is *sound*.
- Strongest version: nothing about mind will remain unexplained by scientific method (Churchlands)–There is nothing to explain!
- Weaker version: some will remain in want of an explanation (consciousness, desires, phenomenal experience etc.)

- The very idea: Computer is an important tool for understanding the mind, no more, no less.
- Me (among many others):
 - It isn't just any tool; it is one that allows exploration of complex behavior
 - without simplifying the problem to asking questions to people and observing them under purportedly controlled conditions.
 - This is a false sense of security; may lead to data fetishism.
 - Every natural science depends on data.
 - We need to explain the gaps in the data.
 - It is not only what we have seen; it is about what we will have seen that is allowed by the theory.

- What about other illuminaries of philosophy: Kant, Hegel, Nietzsche, Schopenhauer, Spinoza, ibn Haldun, Thales, Heraclitus etc. ?
- Marx on history of science: “mankind always sets itself only such tasks as it can solve; since, looking at the matter more closely, it will always be found that the task itself arises only when the material conditions for its solution already exist or are at least in the process of formation.”
- My read: Old hands are great and necessary in contextualizing the problem, but they are not going to be sufficient to understand *and* solve the problems of the complex new world before you.
- next: Turing and Marr to prepare ourselves for the task.