

Philosophy of Mind and Metaphysics

Lecture X: Mind as the Brain: The Mind-Brain Identity Theory

Tim Black
California State University, Northridge
Spring 2004

I. MIND-BRAIN CORRELATION

- a. **THE MIND-BRAIN CORRELATION THESIS:** For each type *M* of mental event that occurs to an organism, *o*, there exists a brain state of kind *B* such that *M* occurs to *o* at time *t* if and only if *B* occurs to *o* at *t*.
- b. Putting this another way, the mind-brain correlation thesis says that each type of mental event that can occur to an organism has a neural correlate that is both necessary and sufficient for its occurrence.
- c. It's plausible to think that something like the Mind-Brain Correlation Thesis is true because we have evidence from neurophysiological research that overwhelmingly suggests that the brain (and its activities) is the central determinant of our mental life.

II. MIND-BODY THEORIES

- a. Even if we accept the mind-body correlation thesis, there are several ways in which we might explain this correlation. Here are a few (and check out [this neat site](#)):
 - i. **CAUSAL INTERACTIONISM** (associated with Descartes): The mind, conceived as immaterial, causes things to occur in the body by causing animal spirits, which flow around the pineal gland, to move in various ways. These animal spirits then cause the pineal gland to move, and the movements of the pineal gland in turn cause conscious mental states. (In cases of mind-to-body causal interaction, this process occurs in the other direction.)
 - ii. **PRE-ESTABLISHED HARMONY** (associated with Leibniz): There is no causal interaction between the mind and the body. It seems that there is, however, because God establishes a harmonious relationship between the mind (and its activities) and the body (and its activities). (Click [here](#) for more on Leibniz' philosophy of mind.)
 - iii. **OCCASIONALISM** (associated with Malebranche): There is no direct causal relation between human minds and bodies. Rather, when a mental event occurs, say, you decide to raise your hand, this serves as the occasion for God to intervene and to cause your hand to be raised.

- iv. **THE DOUBLE-ASPECT THEORY** (associated with Spinoza): There is no direct causal relation between the mental and the physical. Rather, the mind and the body are two correlated aspects—two *modes*—of a single underlying substance that is neither mental nor material.
- v. **EPIPHENOMENALISM**: Every mental event is caused by a physical event in the brain, but mental events have no power to cause other events, either mental or physical. (Click [here](#) for more.)
- vi. **THE PSYCHONEURAL IDENTITY THEORY**: Mental states (and events) are identical to physical states (and events). (Click [here](#) and [here](#) for more.)
- vii. **EMERGENTISM**: “[W]hen biological processes attain a certain level of complexity, a wholly new type of phenomenon, namely, consciousness, emerges, and these “emergent” phenomena are not explainable in terms of the underlying physical/biological phenomena from which they emerge” (p. 52). (Click [here](#) for more on emergent properties.)

III. ARGUMENTS FOR THE PSYCHONEURAL IDENTITY THEORY (PIT)

a. ARGUMENT FROM SIMPLICITY

- i. Considerations of simplicity give us reason to believe that mental states are identical to physical states. For, if we see mental states as identical to physical states, we enhance
 - 1. *ontological simplicity*, for we won’t need to posit *two* sorts of states—mental and physical—but only *one* sort of state;
 - 2. *conceptual simplicity*, for mental concepts (or mental language) will in principle be replaceable by physical concepts (or physical language); and
 - 3. *theoretical simplicity*, for if mental states are identical to physical states, there need be no laws to govern the correlation of mental states with physical states.

b. ARMSTRONG’S ARGUMENT

- i. The following is an a priori fact about our concept of pain: it is the concept of an internal state that is normally caused by tissue damage and that typically causes such behaviors as winces and groans.
- ii. Research in neurophysiology has discovered (or will certainly discover) that, say, C-fiber activation is precisely the internal state that is normally caused by tissue damage and that typically causes such behaviors as winces and groans.
- iii. Thus, pain *is* C-fiber activation.

c. AN ARGUMENT FROM MENTAL CAUSATION

- i. Pain seems to play causal roles. For example, a sharp pain in my finger will cause me to withdraw my hand. “The simplest way to rescue the pain’s causal role seems to be to identify the pain with the C-fiber activation [or, if not with this, then with the appropriate physical event]: If they are one and the same event, there is here one single cause of the hand withdrawal. It makes no difference to its causal status whether it is referred to as ‘pain’ or ‘C-fiber activation.’ ... [Identifying mental events with physical events] makes mental causation entirely unmysterious: Mental causation turns out to be a species of physical causation” (p. 56).

IV. TOKEN PHYSICALISM AND TYPE PHYSICALISM

- a. TOKENS VS. TYPES: A TYPE of thing is a certain *kind* or *class* of thing – for example, car – while a TOKEN is a *particular* thing of that kind – for example, my blue Honda Accord.
- b. TOKEN PHYSICALISM: Every event that falls under a mental-event kind also falls under a physical-event kind (or, every event that has a mental property also has a physical property).
- c. TYPE PHYSICALISM: Mental-event types are physical-event types.
- d. Token Physicalism does not entail Type Physicalism. Suppose that every object that has a color has a shape. It does not follow from this that color types are identical to shape types. Thus, Type Physicalism does not follow from Token Physicalism (since that entailment has precisely the same form as the invalid entailment involving colors and shapes).

V. PROBLEMS WITH TOKEN PHYSICALISM: Token Physicalism maintains that “[a]ny event or occurrence with a mental property has some physical property or other. But the theory says nothing about the relationship between mental properties and physical properties, the relation between pains, itches, thoughts, consciousness, and the rest, on the one hand, and types of neural events on the other. Token physicalism can be true even if there is nothing remotely resembling a systematic relationship between the mental and the physical” (p. 61).

VI. PROBLEMS WITH TYPE PHYSICALISM: Any given mental state is “multiply realizable” in a large variety of physical/biological structures. (For example, pain can be realized by C-fiber excitations, but perhaps it is also true that creatures without C-fibers can experience pain. Perhaps even creatures whose biology is not carbon-based can experience pain, and perhaps pain can be experienced even by intelligent electromechanical systems (e.g. robots).) Consequently, we cannot

identify a particular mental state with a particular physical state. "If pain is identical with a physical state, it must be identical with some *particular* physical state; but there are indefinitely many physical states that can "realize" (or "instantiate," "implement," etc.) pain in all sorts of pain-capable organisms and systems. So pain, as a type of mental state, cannot be a neural-state type or any other physical-state type" (p. 70).