



Three Versions of the Problem of Mental Causation




Starting point

Prima facie there can be no doubt that physical phenomena cause mental phenomena and *vice versa*.

physical-to-mental

- Drinking alcohol reduces our powers of concentration.
- Taking drugs leads to unusual experiences.
- Small lesions in the brain cause localized mental disorders – prosopagnosia, hemineglect, the disability to name things, etc.



mental-to-physical

- Shame can make one blush.
- Fear causes cold sweat.
- Anger may cause raising blood pressure.
- My wish to greet someone may cause my arm to rise.

How can this be?

How can physical phenomena cause mental phenomena?

How is it possible for mental phenomena to cause physical phenomena?

3



1 The traditional problem

How can mental *substances* and physical *substances* causally interact?

Descartes' problem

With regard to all human beings we must distinguish between

- the body (a *res extensa*) and
- the mind (a *res cogitans*).

4



According to Descartes minds and bodies causally interact both ways.

Body-Mind

If a toe is hurt, a 'signal' is sent through certain nerves to the brain; thereby a specific movement of the pineal gland is caused. This movement in turn causes an *idea in the mind*.

Mind-Body

If the mind forms a volition to the effect that the right arm shall point to the middle of the arrow, a specific movement of the pineal gland is caused. This movement in turn causes, via efferent nerves, an *appropriate movement of the arm*.


5



Problems

- How can the mind possibly have causal effects in a world of bodies? How can something immaterial have physical effects at all?
- The physical world is, as far as we know, causally closed. That is, every physical event, if it has any cause at all, has a physical cause.
Yet if that is so, there is evidently no room for causal interventions on the part of the mind in the physical world.
- Could there be any way of reconciling interventions on the part of the mind with the laws of conservation?

6



Since there are hardly any proponents of Cartesian Dualism left in philosophy, the *traditional* problem of mental causation seems to have vanished.

But this does not mean that the problem has vanished tout court!

For in the metaphysics of the mind-body problem, we do not only face the question:

Are there any immaterial substances which are the bearers of mental properties?

But also:

*What about the mental properties themselves? Are these properties **identical with** or **reducible to** physical properties? Or are these properties **independent properties in their own right**?*

7



2 The problem of independent mental properties

Suppose that mental properties are independent properties.

Then the question is:

How can these properties have causal effects in the physical world?

Problems

- The causal closure of the physical. Every physical event, if it has any cause at all, has a physical cause.
- How can the causal powers of independent properties possibly be reconciled with the laws of conservation?

8



A special problem: Downward Causation

The world seems to consist of different layers:

- elementary particles
- atoms
- molecules
- cells
- (multicellular) living things
- social groups.

Levels are constituted by *part-whole (mereological) relations*.

"Any thing of any level except the lowest must possess a decomposition into things belonging to the next lower level." (Oppenheim/Putnam 1958)

9




Question

Can there be *independent* properties of *wholes* that have causal effects on the *parts* of these wholes?

Problem

- If this is possible then the system of *lower-level* laws that tell us how the parts behave can never be complete. Now and then these parts will behave in ways that cannot be accounted for by these lower-level laws.

10




But, if *physicalism is true* then there are no independent properties. For physicalism claims:

All properties are *identical with* or *reducible to* physical properties.

Does this mean that the problem of mental causation is no problem for physicalists?

11



Unfortunately, things are not that simple. For on the one hand:


Of course we have no problem with mental causation if all mental properties are *identical with* physical properties.

In that case mental properties simply have the same causal powers as the physical properties they are identical with (we have no problem with causal closure, no problem with laws of conservation, etc.).

But, on the other hand:

Many physicalists hold that mental properties are not identical with but rather *realized by* physical properties. And realization is not a one-one, but a one-many relation.

12



3 How are the causal powers of mental properties related to the causal powers of their realizers?

Take the case of pain.

It is at least plausible that *in humans* pain is realized by neural structures unlike those in, say, *octopuses*.

It may even be that in *different* human beings pain is realized by different neural structures.

In Martians, pain certainly is realized by other structures than in humans. And the same holds for robots.

13




Thus, the conclusion seems inevitable:

Pain is *not identical with* any physically or biologically definable property.

What does this mean with regard to the causal relevance of pain?

14



People who are in pain usually behave in characteristic ways. When in a certain person pain is realized by a certain neural structure then – due to the fact that this structure is a realizer – this behavior is caused by that very neural structure. At the same time, we tend to believe that the behavior is caused by the person's being in pain.

But how is this possible if the behavior does not have *two different* causes – which seems implausible?

In effect, the causal efficacy of being in pain seems to be precluded by the fact that the neural structure by which it is realized already has all the causal effects that being in pain seems to have (*causal exclusion problem*).

Mental properties seem to be, at best, causal byproducts (epiphenomena).

15



This is the third problem of mental causation.

In fact, it is a much more general problem.

It concerns not only mental properties but all systemic properties which are multiply realizable.

16