What is the relationship between the mind and the brain?

Ben White
05.02.2019
What distinguishes the mental from the non-mental?

<table>
<thead>
<tr>
<th>Mental</th>
<th>Non-mental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consciousness</td>
<td>Mass</td>
</tr>
<tr>
<td>Belief</td>
<td>Charge</td>
</tr>
<tr>
<td>Desire</td>
<td>Shape</td>
</tr>
<tr>
<td>Thought</td>
<td>Size</td>
</tr>
<tr>
<td>Memory</td>
<td>Solidity</td>
</tr>
<tr>
<td>Sensation</td>
<td>Velocity</td>
</tr>
<tr>
<td>Perception</td>
<td>Location</td>
</tr>
<tr>
<td>Emotion</td>
<td>Density</td>
</tr>
<tr>
<td>Imagination</td>
<td>Weight</td>
</tr>
<tr>
<td>Rationality</td>
<td>Physical/Chemical composition</td>
</tr>
</tbody>
</table>
What distinguishes the mental from the non-mental?

The members of the class of mental phenomena thus seem like a very mixed bag... What, if anything, qualifies them for membership in this class?

Philosophers have frequently identified *two* characteristics that seem distinctive of mentality, in that all (and *only*) mental phenomena exemplify at least one of these two features:

- Intentionality
- Phenomenal consciousness
Intentionality

Some mental states, e.g. thoughts, beliefs, desires, and perceptions, have a certain “aboutness” in that they represent or are directed towards certain things beyond themselves.
Intentionality

Such mental states are said to possess *intentionality* and are often referred to as *intentional* states.

Note that many activities *presuppose* the possession of certain intentional states: e.g. hunting, worshiping, speaking.
## Intentionality

<table>
<thead>
<tr>
<th>Mental</th>
<th>Non-mental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consciousness</td>
<td>Mass</td>
</tr>
<tr>
<td>Belief</td>
<td>Charge</td>
</tr>
<tr>
<td>Desire</td>
<td>Shape</td>
</tr>
<tr>
<td>Thought</td>
<td>Size</td>
</tr>
<tr>
<td>Memory</td>
<td>Solidity</td>
</tr>
<tr>
<td>Sensation</td>
<td>Velocity</td>
</tr>
<tr>
<td>Perception</td>
<td>Location</td>
</tr>
<tr>
<td>Emotion</td>
<td>Density</td>
</tr>
<tr>
<td>Imagination</td>
<td>Weight</td>
</tr>
<tr>
<td>Rationality</td>
<td>Physical/Chemical composition</td>
</tr>
</tbody>
</table>
Phenomenal Consciousness

Some mental states have certain experiential qualities such that there is *something it is like* for us to be in them.

- the experience of yellow
- the sensation of pain
- the feeling of a sore muscle
- the sound of a trumpet
- the smell of rotten eggs
- the taste of cantaloupe
Phenomenal Consciousness

Such states are said to be *phenomenally conscious* or to have a certain *phenomenal character*.

The distinctive qualities that we experience when in such states are often referred to as “raw feels” or “*qualia*”.
## Phenomenal Consciousness

<table>
<thead>
<tr>
<th>Mental</th>
<th>Non-mental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscience</td>
<td>Mass</td>
</tr>
<tr>
<td>Belief</td>
<td>Charge</td>
</tr>
<tr>
<td>Desire</td>
<td>Shape</td>
</tr>
<tr>
<td>Thought</td>
<td>Size</td>
</tr>
<tr>
<td>Memory</td>
<td>Solidity</td>
</tr>
<tr>
<td>Sensation</td>
<td>Velocity</td>
</tr>
<tr>
<td>Perception</td>
<td>Location</td>
</tr>
<tr>
<td>Emotion</td>
<td>Density</td>
</tr>
<tr>
<td>Imagination</td>
<td>Weight</td>
</tr>
<tr>
<td>Rationality</td>
<td>Physical/Chemical composition</td>
</tr>
</tbody>
</table>
Phenomenal Consciousness and Intentionality

Some types of mental states seem to possess both intentionality and phenomenal character.
# Phenomenal Consciousness and Intentionality

<table>
<thead>
<tr>
<th>Mental</th>
<th>Non-mental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consciousness</td>
<td>Mass</td>
</tr>
<tr>
<td>Belief</td>
<td>Charge</td>
</tr>
<tr>
<td>Desire</td>
<td>Shape</td>
</tr>
<tr>
<td>Thought</td>
<td>Size</td>
</tr>
<tr>
<td>Memory</td>
<td>Solidity</td>
</tr>
<tr>
<td>Sensation</td>
<td>Velocity</td>
</tr>
<tr>
<td>Perception</td>
<td>Location</td>
</tr>
<tr>
<td>Emotion</td>
<td>Density</td>
</tr>
<tr>
<td>Imagination</td>
<td>Weight</td>
</tr>
<tr>
<td>Rationality</td>
<td>Physical/Chemical composition</td>
</tr>
</tbody>
</table>
The Mind-Body Problem

Once we have established some provisional boundaries for the category of the mental, the question arises how mental states are related to non-mental, physical states (in particular, the brain states on which they seem to depend).
The Mind-Body Problem

Once we have established some provisional boundaries for the category of the mental, the question arises how mental states are related to non-mental, physical states (in particular, the brain states on which they seem to depend).

This is the **Mind-Body Problem**, one of the perennial problems of philosophy.
The Mind-Body Problem

Traditional Solutions to the Mind-Body Problem

- **Materialism/Physicalism**: the mental is reducible to the physical
- **Dualism**: mental states are distinct from and irreducible to physical states (and *vice versa*)
- **Idealism**: the physical is reducible to the mental
Descartes’ Argument for Substance Dualism

I can clearly and distinctly conceive of my mind and body independently of one another; the former, I conceive as an un-extended, thinking substance, and the latter, as an extended, non-thinking substance.

God must therefore be able to create the one independently of the other. Hence they are separable, and therefore distinct.

René Descartes (1596-1650)
Descartes’ Argument for Substance Dualism

Cartesian Substance Dualism!
Mind ≠ Body

René Descartes
(1596-1650)
 Interactionist Dualism

Although mind and body are distinct substances, they nevertheless *causally interact* with one another.
Interactionist Dualism

Mind

- Pin prick
- Neural response
- Experience of pain
- Motor signals sent to muscles involved in speech production
- I say “Ow!”

Body
Interactionist Dualism

Mind

- Feeling of hunger
- Desire for food
- Belief that there is food in the kitchen

Body

- Empty stomach
- Motor signals sent to leg muscles
- I stand up and walk to the kitchen
Princess Elisabeth’s Objection

How can an immaterial substance that lacks extension impart motion to a material body?!?!?!?
Princess Elisabeth’s Objection

“[I]t would be easier for me to concede matter and extension to the soul, than the capacity of moving a body and of being moved, to an immaterial being.”

Princess Elisabeth of Bohemia
(1618-1680)
The Causal Argument for Materialism

1. The mind causally interacts with the body.
2. Nothing can causally interact with a body unless it is itself material.
3. Therefore, the mind is material.
The Causal Argument for Materialism

Mind

Experience of pain

Pin prick → Neural response → Motor signals sent to muscles involved in speech production → I say “Ow!”

Body
The Causal Argument for Materialism

Pin prick → Neural response → Experience of pain → Motor signals sent to muscles involved in speech production → I say “Ow!”

Body
The Causal Argument for Materialism

Mind

Feeling of hunger → Desire for food → Belief that there is food in the kitchen

Empty stomach

Motor signals sent to leg muscles → I stand up and walk to the kitchen

Body
The Causal Argument for Materialism

Empty stomach → Feeling of hunger → Desire for food → Belief that there is food in the kitchen → Motor signals sent to leg muscles → I stand up and walk to the kitchen
Type-Identity Theory

Our minds don’t just “depend” on our brains; our mental states are in fact identical to certain physical states of our brains.

More specifically, each type of mental state (e.g. the belief that 2+2=4, or the experience of pain) is identical to a certain type of brain state (e.g. a certain pattern of neural activity in certain regions of the cerebral cortex).
DID THIS BRAIN CONTAIN THE CONSCIOUSNESS OF U.T. PLACE?

Ullin T. Place (1924 – 2000) was a lecturer in Philosophy and Psychology at the University of Adelaide from (1951 – 1954). Together with his Adelaide professor, J. J. C. Smart, he was responsible for a revolutionary charge in how philosophers viewed the nature of mind and consciousness. Place’s famous 1956 British Journal of Psychology paper “Is Consciousness a Brain Process?” argued against the major theories of the time, behaviorism and dualism, and contended that consciousness should be seen as a brain process and nothing more. In defending this position, Place and Smart entirely changed the methodology of the philosophy of mind. Their position is now known internationally as “The Identity Theory of Mind” or “Australian materialism.”

Place died on 21. 2000, bequeathing his brain to the University of Adelaide, to be displayed with the above message to be seen.
The Multiple Realization Argument

Organisms with brains and nervous systems very different from ours still seem capable of being in some of the same types of mental states as us (e.g. pain, desire for food).

OW!!!
The Multiple Realization Argument

Such considerations suggest that mental states are multiply realizable, meaning that different types of physical states can “realize” or “give rise to” the same type of mental state.

This spells trouble for type-identity theory...
Functionalism

Just as certain objects (e.g. knives) are defined in terms of the functions they perform (e.g. cutting things) so too the mind is what it does.

More specifically, mental states are functional states that are defined in terms of their sensory causes, behavioral effects, and relations to other mental states. To be in a certain type of mental state is just to be in a state that performs a certain causal/functional role.
Functionalism and Multiple Realizability

Functionalism allows for the potential multiple realizability of mental states by identifying mental states with abstract causal/functional roles that can be performed or “realized” by any number of different types of physical states.
Role vs. Realizer

The same functional *role* can be *realized* in many different ways.
Functionalism

“We could be made of Swiss cheese and it wouldn't matter” (Putnam, 1975).
Functionalism

Functionalists often describe the relation between the mind and the brain as analogous to relation between the software and hardware of a computer.
The Turing Test

Alan Turing (1912-1954)
Searle’s Chinese Room Argument
Jackson’s Knowledge Argument
The Knowledge Argument

1. Prior to leaving her room, Mary knew all of the physical and functional facts about red.

2. After seeing red for the first time, Mary learned something new about red; namely, what it’s like to experience it.

3. Therefore, physicalism is false; there are certain aspects of phenomenal consciousness (e.g. what it’s like to experience red) that are not contained in or entailed by the totality of physical and functional facts.
The Explanatory Gap

Given any proposed identification of a certain conscious mental state \( M \) (e.g. the experience of green) with a given brain state \( B \), it always seems reasonable to ask why \( B \) just so happens to be identical to \( M \) instead of some other conscious mental state (e.g. the experience of red), or why \( B \) gives rise to any mental state at all!
The Exclusion Argument

Non-physical causation of physical events is *superfluous*, for every physical event can already be fully explained in purely physical terms.

1. Mental states frequently cause physical effects.
2. Every physical effect has a sufficient physical cause.
3. Causal overdetermination (wherein a single effect has multiple sufficient causes) is rare.
4. Mental states are physical states.

Jaegwon Kim (1934 - ?)
Epiphenomenalism

**Epiphenomenalism** – the view that the mind is causally inert.

Against epiphenomenalism:
• If the mind is causally inert, how do we know anything about it?
• If the mind is causally inert, why were mental capacities preserved under natural selection?
• The idea that the mind has no causal impact on the physical world is incompatible with our sense of agency, our practice of explaining people’s behavior in terms of their mental states, and our allotments of responsibility, praise, and blame.
So what *is* the relationship between the mind and the brain?

**Who knows?**

Some philosophers are adamant in claiming that our minds depend on but are *distinct* from the physical events taking place in our brains.

Others are equally adamant in holding that our mental states are *nothing over and above* the physical events taking place in our brains.
So what is the relationship between the mind and the brain?

We’ve seen a number of arguments that can be marshalled in support of either side.

Dualists face problems in accounting for the mind’s causal efficacy.

Physicalists have difficulty accounting for intentionality and phenomenal consciousness in purely physical or functional terms.
So what is the relationship between the mind and the brain?

The best course of action at this point may be to simply suspend judgment on this question until we have a better understanding of how the brain works, at which point we can (hopefully) make a more informed decision.