

# Philosophy of Mind

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SSNAP, Duke University, May 28<sup>th</sup> 2021

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# The Mind-Body Problem

# Metaphysics

- Studies the nature of reality and the fundamental principles that relate everything in it.

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- Metaphysical questions:
  - What is the nature of time?
  - What is it be a person?
  - What is freedom of will?
  - What is the mind?
  - How does the mind relate to the body?
  - What is the nature of a mental state?

**Mind-body problem**

# Mental states: conscious vs intentional

- *Conscious states* have a qualitative aspect to it; there is something that it is like to be in them.
  - Examples: feeling pain, seeing red, smelling roses, feeling happy.
- *Intentional states* are about something. They include beliefs, desires, intentions, and perceptions
  - Examples: a belief that the sky is blue, a desire that there be world peace.
    - The *content* of the belief is that the sky is blue
    - The *content* of the desire is that there be world peace.
- Some mental states are *both* intentional and conscious
  - Example: conscious perceptual states.
    - Seeing a red apple is about something, i.e., the red apple, and there is something that is like to see a red apple.

# Metaphysics

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- Metaphysical questions:
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  - What is it be a person?
  - What is freedom of will?
  - What is the mind?
  - How does the mind relate to the body?
  - What is the nature of a mental state?
    - What is the nature of a conscious state?
    - What is the nature of an intentional state?

**Mind-body problem**

Unless noted, we will not distinguish conscious from intentional mental states.



# Main responses to the mind-body problem

■ **Dualism**: mind and body belong to two distinct kinds of fundamental things, the mental and the physical

■ **Materialism**: everything is physical

- Behaviorism
- Identity Theory
- Functionalism
- Eliminativism

The mind and the body  
belong to the same  
kind of fundamental  
thing: the physical

There is no mind

■ **Idealism**: everything is mental; the mind and the body belong to the same kind of fundamental thing: the mental.

# Main responses to the mind-body problem

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# Dualism

- The mind and the body (including the brain) are distinct.
- Mental states are not physical states.

# Substance vs. property dualism

<b>Substance dualism</b>	There are two fundamental types of substances, one mental and one physical
<b>Property dualism</b>	There are two fundamental types of properties, some mental and some physical

René Descartes was a substance dualist

# Cartesian dualism

- René Descartes: the physical and the mental are fundamentally distinct.
  
- Some of his motivations:
  - One can be certain about the existence of the mental but not about the physical.
  - One can think of oneself existing without a body but not without a mind.
  - The mind is indivisible where the physical is divisible.
  
- From these, he ultimately concludes that the body and the mind are fundamentally distinct

# Cartesian dualism

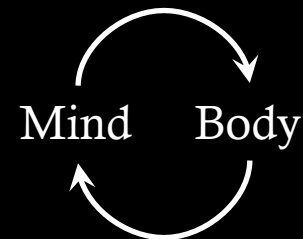
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# Cartesian argument for dualism

- (P1) The body is extended.
- (P2) Everything that is extended is divisible.
- (C1) The body is divisible.
- (P3) The mind is not divisible.
- (P4) If A and B have different properties then A and B are not identical.
- (C2) The mind and the body are not identical

# Descartes is an interactionist

- Descartes is concerned with the relationship between the mind and the body.
  - Only humans have rational souls. Other animals are automata: their behavior is controlled by their brains.
- The human brain inputs passions to the soul, which through the will, affects the brain to produce actions.
- The pineal gland serves to send signals between the brain and the soul.
- Even if the brain and the soul are fundamentally distinct substances, they can interact with one another in both directions:
  - the mind can produce effects in the body, and
  - the body can produce effects in the mind.





# Two problems

- There is no pineal gland.
- According to physics, all causes and effects are physical—there is no room for another non-physical substance such as the soul.

# Cartesian dualism – in summary

- We are composed of mind and body.
- A mind is essentially a thinking thing and it is not extended.
- A body is essentially extended.
- Mind and body can exist independently of each other.
- Mind and body can interact casually in both directions (Interactionism).

# Elizabeth de Bohemia's objection to Descartes

- My feeling of hunger (something mental) causes me to move my hand and grab food (something physical). Or in the opposite direction: my eating spicy food (something physical) causes me to have a stomachache (something mental).
- That is, the mind can be the cause of some effects in the body and the body can be the cause of some effects in the mind.
- But according to physics, all causes are physical causes. So, if the mental is non-physical, it would not be able to causally interact with physical substances.

## de Bohemia's objection

- (P1) Only physical objects can causally interact with one another.
- (P2) The mind can be the cause of physical effects.
- (P3) A physical object can be the cause of mental effects.
- (C1) Therefore, the mind is a physical object.

# Descartes's reply

- Deny premise 1 (from above): It is not the case that only physical objects can causally interact with one another.

(P1\*) Physical objects can produce physical effects.

(P2) The mind can be the cause of physical effects.

(P3) A physical object can be the cause of mental effects.

(P4) The mind is not physical.

(C1) Therefore, not only physical objects can causally interact with one another, the mind can also causally interact with physical objects.

**The dispute between these two positions  
is at the heart of what is known as  
*the problem of mental causation.***

# Bertrand Russell's objection to Dualism

- (P1) According to dualism, the physical and the mental are fundamentally distinct.
- (P2) According to dualism, the mental is in time but not in space.
- (P3) According to the theory of relativity, however, time and space are only two aspects of the same more fundamental thing, space-time.
- (C1) If the theory of relativity is correct, then there are no objects in time but not in space.
- (C2) If the theory of relativity is correct, then dualism is false.

# Interactionism vs. Epiphenomenalism

## **Interactionism**

While the mental and the physical are fundamentally distinct, they interact with one another: the mental affects the physical and the physical affects the mental.

## **Epiphenomenalism**

The mental and the physical are fundamentally distinct. The physical can affect the mental but the mental cannot affect the physical.

**Frank Jackson argued for epiphenomenalism  
(but then rejected the view)**



# Epiphenomenalism

## **Advantage**

It fits better with the idea that all causes are physical causes (causal closure of physics).

## **Disadvantage**

It is hard to deny that the mental has a causal effect on the physical.

# Main responses

- **Dualism**: mind and body belong to two distinct kinds of fundamental things, the mental and the physical
- **Materialism**: everything is physical
  - Behaviorism
  - Identity Theory
  - Functionalism
  - Eliminativism
- **Idealism**: everything is mental; the mind and the body belong to the same kind of fundamental thing: the mental.

# Behaviorism

■ The following ideas are challenged:

- The mental is internal.
- The mental is private, that is, directly accessible only to the subject undergoing the mental event.
- A subject's mental states are known to her better than her non-mental states.

# Behaviorism

- There is no mental substance distinct from the physical: behaviorism is a form of materialism.
- The mind is an aspect of our bodies. The mental is identical to some behavior or behavioral disposition.
- We access our own minds as we access the minds of others: by observing the subject's behavior.
  - The mind is not inner and private but external and publicly available.

# Gilbert Ryle: Cartesian dualism involves a category mistake

- Ryle takes Cartesian dualism to be in principle mistaken.
- This mistake is a 'category mistake'
  - We represent the mind as belonging to one category (a non-physical substance) when it really belongs to another (it is an aspect of the physical).

# Ryle's examples of category mistakes

## **Foreigner visiting Oxford**

The foreigner goes through colleges, playing fields, laboratories, etc. Still, he wonders “Where is the university?”

Mistake: To think of the university as an extra thing over and above all the places he has visited and the way in which they are organized.

## **Child watching a battalion pass by**

A child see the battalions, batteries, and squadrons of a division as it passes by. She still asks when will the division pass.

Mistake: To think of the division as *an extra thing over and above* all the soldiers marching in front of her.

## **Child watching a cricket game**

She asks where the team spirit is.

Mistake: Think of the team spirit as if it were something alongside the bowling, or batting.

**The cases involve the misuse of a concept:  
*university, division, and team spirit.***

Similarly, in trying to understand the mental we make a category mistake

**Dualism**

We see a subject S's body behaving in certain ways and think that S is sad, hungry, or anxious. We then wonder where the sadness, hunger or anxiety are.

Mistake: Think of S's mental states as if they were something over and above the behaviors seen.

# The behaviorist argues against the dualist that:

## ■ Dualism:

- involves a category mistake
- gives rise to the problem of mental causation.
- describes the mind *merely* in opposition to the physical:
  - the mind is *not* in space, is *not* in motion, is *not* matter, is *not* objective, and is *not* accessible to public observation. However, Cartesian dualism says little about what the mind is.



# *Analytic* Behaviorism

- the mental is some bodily behavior or disposition to exhibit a certain kind of behavior, and
- what we *mean* by the use of mental vocabulary is nothing over and above certain behaviors or disposition to behave.

# Rudolf Carnap's *Analytic* Behaviorism

- Meaningful claims can always be expressed as claims about observable, verifiable phenomena.
- Carnap proposed to divide all sentences into:
  - those about what we immediately access (protocol-sentences)
  - those involving scientific language (system-sentences).
- To verify a system-sentence involves deducing from it protocol-sentences and determining whether they are true or not.

# Rudolf Carnap's *Analytic* Behaviorism

- Mental expressions are (logical) constructions of physical expressions, in particular, about behavior or behavioral dispositions.
  - The meaning of
    - “I have pain in my leg”
  - would be something like
    - “I am disposed to say “ouch!” if you touch my leg, seek help, protect my leg, etc.”.
- Upshot: if behavior is a physical phenomenon, then the mind turns out to be a physical phenomenon as well.

# Motivation for *Analytic* Behaviorism

- The way in which we are taught words like “pain” or “feeling happy” is not by being shown a pain or a feeling of happiness.
- One cannot point to my pain and compare it with yours.
- Rather we are shown how to use these words by pointing to the behavior of a person that has pain or is happy.
- Carnap thought that this supports the idea that the meaning of such words are not feelings, but the behaviors pointed to when the words are taught.

# Hilary Putnam's objections to behaviorism

- Even if we learn how to use mental terms by being pointed to certain characteristic behaviors, that is not enough to show that the *meaning* of these words is not a feeling.
- The dualist can respond that each one knows, from their own first personal perspective, what is the feeling that corresponds and causes that behavior.
  - Putnam rather thinks that a cluster of criteria determines the meaning of our mental terms, but does not provide a meaning for it. In this sense, mental terms work like other cluster terms, such as the names of diseases, i.e., “multiple sclerosis”.

Putnam: there is no contradiction in imagining a world with pains but no pain behavior

- Consider a community of super-Stoics, where adults can suppress all pain behavior.
- Pain behavior is a sign of weakness (after a few generation even children are born disposed to suppress pain behavior).
- Even while they exhibit no pain behavior, super-Stoics could still feel pain.
- What this suggests is that pain is not identical to pain behavior.

# What about the causes of pain?

- Imagine a world where creatures feel pain in response to magnetic fields, which cause no damage to their bodies.
- These creatures become super Stoics and show no pain behavior when under this field.
- So they have neither the normal causes nor the normal effects of pain but still have pain.

# What about verbal responses?

- Consider super-super-Stoics: they have been super-Stoics for so long that they don't even bother talking about pain.
- Even if their pains have different causes and effects from ours and there is no pain talk, we can imagine that they still feel pain.
- The behaviorist can argue that the hypothesis of super-super-Stoics is untestable: we couldn't differentiate them from people that feel no pain. It is thus nonsense to think of super-super-Spartans as having pain.
- The hypothesis that they feel no pain is simpler.



# Putnam: the hypotheses are testable

- One can distinguish the super-super-Stoics from people that feel no pain.
- What one cannot do is distinguish them, solely by considering their behavior, from people that feel no pain.
- But we could examine their brains. Super-super Stoic's brains, unlike those of the people that feel no pain, might exhibit neural patterns that are one-to-one correlated in people like us with pains.

# No one-to-one correlations between behaviors and mental states

- A way of stating Putnam's objection is that one's behavior depends on one's total mental state.
  - For example, if one is in *pain* but *believes* that saying “ouch” is wrong, or a sign of weakness or impoliteness, one will not say “ouch”.
- Some worried that this implied that behaviorism involved a vicious circularity: one could not define a mental state without having defined the others (we will return to this worry when we discuss functionalism).

# Behaviorism

## Advantage

It provides an answer to the problem of mental causation. A subject's behavior can be the cause of another behavior (in the same or in a different subject) and have other physical effects.

- For example: The movement of my arm to grab food can be the effect of my hunger, since this latter is nothing but my disposition to search for food, eat it if it looks edible, etc.

## Disadvantage

It is natural to think of the mind as something inner and distinct from the behaviors it causes.

# Main responses to the mind-body problem

- **Dualism**: mind and body belong to two distinct kinds of fundamental things, the mental and the physical
  
- **Materialism**: everything is physical
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- **Idealism**: everything is mental; the mind and the body belong to the same kind of fundamental thing: the mental.

# Identity Theory

- Mental states are identical to brain states.
- Two main varieties:
  - Type-type Identity Theory
  - Token-token Identity Theory

# Type vs. token

A

A

A

B

B

■ There are:

- two types of letters, type “A” and type “B”.
- 5 tokens of letters, three tokens of type “A” and two tokens of type “B”

# Same distinction applies to mental states

- Pain is a type of mental state.
- The headache I had on April 9th, 2021 at 4,15 pm is a token of this type.
- If I say that you and I are both in pain the situation I am describing involves just one type of mental state, namely, pain, but two tokens of this type: your pain is one and my pain is another.

# Type vs. Token Identity Theory

## **Type-type Identity Theory**

a type of mental state, i.e. pain, is identical to a type of brain state, i.e. the firing of C-fibers.

## **Token-token Identity Theory**

only the token pain, say my headache on April 9th, 2015 at 4,15 pm, is identical to a token brain state, i.e. the particular way in which my C-fibers fired at that time.



# Type vs. Token Identity Theory

## Mental State

## Brain state

### Type-type Identity Theory

- Pain
- Believing that the grass is green
- Desiring that there is world peace

- C-fibers firing
- Activation of neural pattern N1
- Activation of neural pattern N2

### Token-token Identity Theory

- My foot pain on 6/1/2018 at 2pm
- My believing that grass is green on 6/1/2018 at 2pm
- My desiring that that there is world peace on 6/1/2018 at 2pm

- My C-fibers firing on 6/1/2018 at 2pm
- My activation of neural pattern N1 on 6/1/2018 at 2pm
- My activation of neural pattern N2 on 6/1/2018 at 2pm

Type-type Identity Theory implies Token-token Identity Theory, but Token-token Identity Theory does not imply Type-type Identity Theory.

Unless noted, by *Identity Theory* I mean Type-type Identity Theory.

# Motivation for Identity Theory

- Behaviorism may be able to account for purely intentional states (“knowing”, “believing”, “wanting”, “intending”) but not for conscious states (“feeling hot”, “imagining a beautiful landscape”, “seeing red”).
- We take conscious states—the smell of roses, the redness of red, the flavor of orange, a headache—as the causes or effects of behavior, not as identical behavior. (U.T. Place)

# U.T. Place's Phenomenological Fallacy

- We incorrectly take the descriptions of our conscious states—looks red and bright, sounds sharp and loud, etc.—as descriptions of how things are inside our minds, as if there were an inner theater or phenomenal field filled with mental objects that are red, bright, sharp, loud.
- It is then hard to see how our brain states could be these objects: nothing in our mind need be red, bright, sharp, or loud for us to have such experiences.
- But they are rather descriptions of the objects we experience: the apple, the siren (*cfr.* Gilbert Harman).
- If we avoid this mistake, we are free to think of mental states as brain states: we no longer need to look for something red, bright, or loud inside our minds.

# Identity Theory is subject to empirical investigation (Place)

## ■ Scientific identities

- Water is H<sub>2</sub>O
- Heat is mean molecular motion
- Lightning is electrical discharge.
- Clouds are bodies of water drops.
- What makes water/lightning/clouds be H<sub>2</sub>O/electrical discharge/bodies of water droplets are their internal structure.
- Their truth cannot be discovered merely by thinking: some empirical research needs to be done.

## ■ Similarly, identity statements between mind and body, such as

- Pain is C- fiber firing
- The belief that grass is green is the activation of neural state N1.
- are scientific identities.

## ■ Their truth cannot be discovered merely by thinking: they are true in virtue of the internal structure of the entities under investigation.

## J. J. C. Smart: Scientific identities are not analytic

- The claim “I have pain” does not mean “My C-fibers are firing”, just as the claim “I want to drink water” does not mean “I want to drink H<sub>2</sub>O”, even if water is H<sub>2</sub>O.
- The Identity Theory is concerned with what mental states *are*—brain states, according to this view—not what the *meaning* of mental terms are. It is a metaphysical question, not a semantic one.
- It is part of the meaning of sensations that they are *topic neutral*: they leave open whether sensations are material or immaterial. To decide this, we need to do some science.

# Smart: the Identity Theory can explain mental causation

- Why does hunger cause me to reach for food?
  - Because the brain process that is identical to my feeling of hunger causes me to reach for food.

Scientific identities were thought to be contingently true  
(Smart)

Famously, Kripke argued against this.



# Kripke's argument against the Identity Theory

(P1) *Law of the substitutivity of identity*

For every x and y, if x is identical to y, then if x has any property P then y has P.

(P2) *The necessity of identity*

For every x, it is necessary that x is identical to x.

(P3) *From premise 1 and premise 2, taking as the property being necessarily identical to x*

For every x and y, if x is identical to y, then if necessarily x is identical to x then necessarily y is identical to x.

(C1) *From premise 2 and premise 3*

For every x and y, if x is identical to y, then necessarily x is identical to y.

# Kripke's argument against the Identity Theory

(P1) *Law of the substitutivity of identity*

$$(x) (y) [(x=y) \supset (Fx \supset Fy)]$$

(P2) *The necessity of identity*

$$(x) (y) \Box (x=x)$$

(P3) *From premise 1 and premise 2, taking as the property being necessarily identical to  $x$*

$$(x) (y) \{(x=y) \supset [\Box (x=x) \supset \Box (x=y)]\}$$

(C1) *From premise 2 and premise 3*

$$(x) (y) [(x=y) \supset \Box (x=y)]$$

# But then Smart was wrong

Scientific identities such as:

- Water is H<sub>2</sub>O.
- Lighting is an electrical discharge.
- Clouds are bodies of water droplets.
- Heat is mean molecular motion.
- Pain is the firing of C-fibers

if true, are necessarily so.

# Kripke considers the following reply...

- Consider one of the other identity statements
  - Heat is identical to mean molecular motion.
- If this statement is true, then it is necessarily true.
- But it is not: we can imagine there being heat without there being mean molecular motion. But then, it is possible for heat to be something other than mean molecular motion.

... but rejects it

- It is not true that it is possible for heat to be something other than mean molecular motion.
- What is possible is that the sensation of heat could have existed without there being mean molecular motion. But heat is not the sensation of heat.
- The same reply, however, is not available in the case of
  - Pain is identical to C-fiber firing.
- If this statement is true, it is necessarily so. But it is not, since we can imagine pain without C-fiber firing.
- The previous reply (distinguishing heat from the sensation of heat) is not available because the sensation of pain and pain are the same.

# Identity Theory

## Advantages

- It is more economical than dualism: avoids positing non-physical entities.
- Solves the problem of mental causation. A mental state can cause and be caused by a physical state because a mental state is a brain state.
- Avoids identifying mental states with behavior.
- Explains the strong correlation between brain states and mental states in a simple and parsimonious way. The correlations exist because the mental states are identical to the brain states.

## Disadvantage

We can imagine creatures with no brains that feel pain and have other mental states.

# Main responses to the mind-body problem

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# Functionalism

- What makes a mental state the kind of state it is (e.g. a belief, desire, pain, seeing red) is the causal role or function it plays within a larger system, not its internal structure.
  - What determines that something is a certain mental state is how it is causally connected to sensory inputs, other mental states, and behavioral outputs. (The arrow below represents causal connections)
  - Sensory Inputs → Mental State 1 → Mental State 2 → ... → Behavioral Outputs
- One can be a functionalist about intentional states (beliefs, desires, intention, etc.) and/or about conscious states (sensations, feelings of pain, of happiness, or joy).
  - Some philosophers (i.e., Ned Block) are functionalists about intentional states but not about conscious states.



# Motivation for functionalism: *the multiple realization thesis*

- Mental states are multiply realizable (Hilary Putnam).
  - A mental state is multiply-realizable just in case organisms with different types of inner states can have the same type of mental state.
    - Example: pain can be had in humans in virtue of having C-fibers firing and in Martians in virtue of having ectoplasm X lighting up.
- Functionalism can account for this.
  - What matters for having a mental state is that a certain function is performed. What type of organism carries out that function is irrelevant: it can be realized by different types of systems.

# Motivation for functionalism: *the multiple realization thesis*

- Pacman can be *realized* by different types of computers, a Mac, a PC, an Android, etc. As long as the function that defines the program is running, Pacman is running.
- Similarly, in humans pain is *realized* by the firing C-fibers in our brains, but in creatures with different physical inner states (i.e. Martians) pain could be instantiated by a different kind of stuff (i.e. lighting of ectoplasm X).
- As long as the same function is implemented in this other kind of material—as long as the inputs, other mental states, and outputs are causally related in the same way—the organism would be in pain.
- If mental states are multiply-realizable, then the type-type Identity Theory is false. For a certain kind of mental state (i.e. pain), cannot be identical to a certain type of brain state (i.e. C-fiber firing) because pain can be realized in other organisms by different types of state (i.e. ectoplasm X lightening).

# Functionalism: toy example

## Example

- *Steering wheel* A steering wheel is a wheel that is rotated to control the direction of a vehicle's axis. No matter what the wheel is made of, so long as it performs this function, it is a steering wheel.
- *Pain* To be in pain is to be in a state that has these features. Some bodily damage causes the belief that something is wrong and the desire to be out of that state. These two mental states, in turn, cause the desire to seek help, which causes the subject to yell "Ouch!"



# Machine Functionalism

- We can also define a mental state in terms of the function it carries out in the program implemented by a machine.
- Machine table specifies a machine's program by describing how all its inputs, outputs and internal states are related.

Input	Current State	Next State	Output
Dollar Bill	Empty	One	Nothing
	One	Empty	Ticket

- Example: *Machine table* for a machine dispensing two-dollar tickets.
  - Internal states: *Empty* and *One*.
  - Input: dollar bills
  - Output: ticket.
  - The machine can be made out of whatever succeeds in implementing this program.
  - Putman claims that we are probabilistic automata: the machine table specifies the probability that the machine will produce an output given that it is in an internal state and receives an input.

# Advantages of Machine Functionalism

- It can account for the idea that mental states are multiply-realizable.
- It also solves previous worry of circularity (behaviorism) by offering us a way of defining all internal states at once.

# Jaegwon Kim: Problems with Machine Functionalism

- We can be in various mental states at the same time: have different beliefs, desires, sensations, etc. at the same time. But at any time, a machine table specifies only one internal state.
- Each internal state is defined in terms of the whole machine. Thus, unless two machine tables are exactly the same, they cannot be in the same internal state. But, most likely any two people implement different machine tables despite having a common mental state. For instance, both believe that the Earth is a planet, that it orbits the Sun, etc.

# Role vs. Realizer Functionalism

- One can identify a mental state with a function or with the physical state that implements that function. In the first case we have *Role Functionalism*; in the second, *Realizer Functionalism*.
- Machine functionalism is a form of Role Functionalism.
- Realizer functionalism is really a form of token Identity Theory.
  - D.M. Armstrong and David Lewis defended this view.

# Machine functionalism vs. Analytic functionalism

- Machine functionalism (Putnam's) can be distinguished from analytic functionalism (Armstrong's).
- Analytic functionalism is stated in terms of causal roles, not in terms of machines: a mental state is the state that can cause certain effects or be the effect of certain causes.
- While machine functionalism is proposed as a scientific hypothesis, analytic functionalism is proposed as an *a priori* thesis: mental states are whatever fulfills a particular function.



# Armstrong's causal analysis of mental concepts

- Armstrong aims at defending the following inference to the best explanation:

- (P1) There is strong evidence that we can offer a physicalist account of our body.
- (P2) There is strong evidence that our brains fully determine our mental states
- (C1) Mental states are identical to brain states

- Yet, as Smart, Armstrong thinks that it is a mistake to think that there are *a priori* reasons for thinking that mental states cannot be physical states because: mental terms are topic neutral
- To defend this, he offers causal analysis for many mental concepts.

# Armstrong's causal analysis of mental concepts

- The right analysis of the concept of a mental state is:

- a state that is apt to be either the cause or the effect of certain causes.

- Example:

- *Poison* A substance that causes sickness or death when introduced into a living organism.
- This calls for refinements: for example, add “except when an antidote has been taken”. The analysis is not meant to provide us with the meaning of “poison” .

- Similarly, Armstrong's causal analysis does not pretend to offer the meaning of a mental concept: the mental state and the causal analysis are not meant to be synonymous. But this is also not an empirical fact, just as it is not an empirical fact that poison kills.

# Armstrong's causal analysis of mental concepts

- In the case of mental states, the causes are objects and events in the environment and the effects are patterns of behaviors.
  - Example: a purpose is that which tends to bring about a certain outcome.

# Armstrong's causal analysis of mental concepts

- Armstrong's account thus consists of two steps:
  - (1) Offer a causal analysis of a mental state
  - (2) Identify the mental state with the physical brain state that fulfills the causal role.
- (2) is what makes the view a form of realizer functionalism.
  - Given that this function is realized by a brain state, the view turns out to be a defense of token-token identity theory.
- Alternatively, one could identify the mental state with having the relevant function fulfilled.
  - This would turn Analytic Functionalism into Role Functionalism.

# Armstrong's causal analysis of mental concepts

- In offering a causal account of a mental state we might need to appeal to other mental states. For example, a desire might be what produces thus and thus effects whenever the subject has X, Y, and Z beliefs...
- This involves no vicious circularity but rather shows that various mental concepts need to be introduced together.
  - Other concepts that need to be introduced together: wife and husband, soldier and army. (The notion of a wife makes no sense without that of a husband; the notion of an army makes no sense without that of an army).

# Armstrong's causal analysis of mental concepts

- Armstrong aimed to offer causal analysis not only of intentional states, but also of perceptions, bodily sensations, and emotions.
- A sensation (secondary qualities, in the Lockean sense) is associated to a physical quality. For example, colors are patterns of light reflectances, heat is mean kinetic energy, bodily sensations are stimulations of body receptors. These secondary qualities are unanalyzable (he is not offering a causal analysis of these). He thinks we cannot offer an account of the concept of, i.e., purpleness without involving the notion of purpleness.
- On his account, the sensation of purple would be the effect that a purple object produces on a subject's eyes.
- Since secondary qualities appear to be simple but on his account they turn out to be complex, he is committed to there being a systematic illusion in this case.

# David Lewis also defends Realizer Functionalism

- For Lewis, however, the relevant causal roles that define the mental terms are given by folk psychology. From it, we can derive ways in which our mental states are connected to one another, and how they produce or have as input certain behaviors.
- Lewis proposes that a long Ramsey sentence can be identified with each mental term.

# Consequence of Realizer Functionalism

- While for the role-functionalist to have a certain mental state, i.e. to be in pain, is to have the pain role fulfilled, realizer-functionalism identifies it with what realizes that role, i.e. C-fiber firing.
- But then, if an organism doesn't have C-fibers then it doesn't have pain. So even if Martians have something else, i.e. Ectoplasm X lightening, realizing the same function that C-fibers realize in humans, Martian have no pains.
  - Lewis bites the bullet: humans have human-pain, Martians have martian-pain.
  - This, because he takes it that is part of folk psychology that mental states have causal powers (this is one of the reasons to embrace functionalism) and he thinks that a role has no causal powers, only whatever fulfills that role.
- In this way, Realizer Functionalism turns out to be a form of the Token-Token Identity Theory.



If we accept the token-token identity theory, shouldn't type-type identity theory also be accepted?

- Kim seems to suggest that it is problematic not to do so. For rejecting that, i.e., pain is identical to C-fiber firing would imply rejecting that pain is a natural kind.
- Perhaps pain-for-humans is a natural kind, but then it would be left unexplained what it has in common with pain-in-martians, pain-in-rats, etc., etc.
- Fodor and Davidson disagree: for them, token physicalism is enough.

# Objection to functionalism

- We don't think that everything that implements the right function has a mental state. Functionalism is too liberal.
  - Consider, for example, the following case.

# Ned Block: functionalism (about conscious mental states) is too liberal.

- Suppose that we organize the Chinese population so as to implement the pain-function.
- Everyone has walkie-talkies to send and receive signals in the appropriate ways (just as your neurons would when they implement what the functionalist takes to be the pain function).
- Regardless of what function this system implements, we wouldn't be inclined to say that the whole system feels pain!
- We can even suppose that the inputs and outputs of the system are sent to a robot so that when the robot is harmed in the way in which our bodies are harmed when we feel pain, the appropriate signals are sent to different people in the system implemented by the Chinese population, and that the outputs of whatever processes this system implements are sent back to the robot so as to produce pain behavior, such as saying "ouch!".
- Still, we wouldn't say that the Chinese population or the system composed by the robot and the Chinese population are in pain.
- But then, functionalism is not the correct account of conscious mental states. (Block, however, accepts functionalism as the right account of intentional states such as beliefs, desires, etc.)

On the other hand, the identity theory may be too chauvinistic.

- If pain is C-fiber firing, only humans but not Martians have pains.
- Too, chauvinistic!

# Main responses to the mind-body problem

- **Dualism**: mind and body belong to two distinct kinds of fundamental things, the mental and the physical
  
- **Materialism**: everything is physical
  - Behaviorism
  - Identity Theory
  - Functionalism
  - Eliminativism
  
- **Idealism**: everything is mental; the mind and the body belong to the same kind of fundamental thing: the mental.

# Paul Churchland's Eliminativism

- There are no mental states: no beliefs, no desires, no seeing-red, no smelling-rose, etc.

- (P1) If a mental state does not reduce to a physical state, then it does not exist.
- (P2) Mental states do not reduce to physical states.
- (C1) Mental states do not exist.

# Philosophy of Mind

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