Paul Churchland, Matter and Consciousness

Chapter 2: The Ontological Problem (The Mind-Body Problem)

Reid Blackman

The Mind-Body Problem

Questions: What is the mind? What is its connection to the body?

Most basic division of answers: Dualist and Materialist (or Physicalist) responses.

- **Materialist theories**: mental states (states of the soul or of the mind) are *physical* states. Specifically, states of the brain, a physical thing.
    - Physical things can be accounted for by physics, biology, chemistry, *etc*.
- **Dualist theories**: Mental states are not states of any physical thing; it is a non-physical entity.
    - Non-physical things cannot be investigated by the sciences.

But: There are many different materialist and dualist theories…

PART I: Dualist Theories of the Mind

Substance Dualism

"Each mind is a distinct nonphysical thing, an individual 'package' of nonphysical substance, a thing whose identity is independent of any physical body to which it may be temporarily 'attached'" (7).

Descartes' Arguments for Substance Dualism

Argument #1

1. Matter – physical stuff – is extended and located in space. It has a shape, and is (imagine someone pointing to something) "there!"
2. A mind, or a soul, is essentially a *thinking* thing, and thinking isn't the sort of thing located in space; it is not extended. You can point to a brain, but not to *thoughts*.
    a. We know we are essentially thinking things through introspection.
3. Thus, the mind is not matter or physical stuff.

Problem for this argument: modern science allows for matter that is not extended in space (9).

- Electrons are bits of matter that are best understood as "point-particles" with no extension and no determinate spatial position, and (b) according to Einstein's theory of gravity, a star can have this same status if it undergoes a complete gravitational collapse.

Argument #2

1. Having a mind involves have thoughts, using a language, and engaging in reasoning.
2. Physical things cannot engage in reasoning.
3. Thus, the mind is something nonphysical.

Question: But isn't there a deep connection the mind has with the body?

Answer: Yes: a causal connection.

- Physical states of the body (of your eyes, ears, *etc*.) cause visual/auditory/tactile experiences in your mind.
- Mental states, like decisions and intentions to do something, cause your body to move in various ways.

Problem/Question: How could something immaterial influence something material? Is there a break in the laws of nature governing matter?

Popular Dualism: A Response to the Two Problems Noted Above

Claim: The mind/soul/person is a "ghost in a machine." One is spatially located inside one's body, specifically in the head, and controls the brain.

- Solves the first problem by claiming that mental substance is extended and located somewhere.

- Solves the second problem by claiming that the mind and body exchange a form of energy currently not recognized by science. This is possible because matter is, after all, energy.
- Allows for the *possibility*, but certainly does not guarantee, the survival of the mind after the death of the body.

A Different Kind of Dualism: Property Dualism

- This kind of dualism is important because, it is claimed, it avoids fatal objections to substance dualism while maintaining important virtues of substance dualism.

Claim: There are not two kinds of substances, the mind and the brain, but two kinds of *properties*.

Question: What are properties?
Answer: Just a way of saying "characteristics," *e.g.* round, square, bright, red, intelligent, boring, important, dangerous, and so on.

Question: What are the two different kinds of properties?
Answer: Physical and non-physical properties.

Question: What are physical properties?
Answer: The kinds discoverable by doing empirical science, like physics, chemistry, and biology.

Question: What are non-physical properties?
Answer: The kinds of properties neither discovered by the empirical sciences nor reducible to the properties of the empirical sciences.

Two kinds of property dualism: (a) epiphenomenalism and (b) interactionism

Some Features of Both Positions

- Mental properties are *emergent* properties: they do not appear until physical matter is organized in a certain way, *e.g*. being solid, colored (having a color), alive.
- Mental states and properties are *irreducible*: they are not just "organization features" of physical matter, as is being solid, colored, *etc*.
    - Mental states/properties are "beyond prediction or explanation by physical science" (12).

As for (a): Mental phenomena "ride on top of" brain processes, but don't ever affect the brain. Mental states *have no causal powers*.

- One's actions are not caused by desires, intentions, hopes, emotions, *etc*.
    - States of the brain cause both.

Question: What is attractive about being an epiphenomenalist?
Answer: A neuroscientist looks like she can explain and predict all of a person's behavior if she knows all the facts about the person's brain and environment.

- But this explanation for behavior is compatible with "looking inside" and finding that one has beliefs, desires, *etc*. There really are nonphysical, mental properties.

As for (b): Mental properties, mental states, are nonphysical but interact with the (physical) brain. They are "an integrated part of the general causal fray" (12).

One more kind of property dualism: Elemental-property dualism.

- Mental properties are irreducible, but do not depend on matter being organized in a certain way. They can, as it were, float around independently of what physical stuff is around.

Objection to elemental property dualism: We only see mental properties in highly complex physical systems.

- "The case for the evolutionary emergence of mental properties through the organization of matter is extremely strong. They do not appear to be basic or elemental at all.

In Support of Dualism

The argument from religion

1. One's religion requires belief in an immortal soul.
2. Immortality of the soul requires dualism.
3. Thus, one's religion requires belief in dualism.

Objection #1: Religion has a terrible track record of supporting scientific discoveries (**14-5**).

Objection #2:

1. One's religious convictions are the result of social forces.
    - If this were not true, we would see a random distribution of endorsements of religion, but we see clusters instead.
2. We should not allow social forces to determine our views about the way the world is.
3. Thus, we should not appeal to religious convictions to determine our views about the way the world is (15).

The argument from introspection

1. When one introspects, one finds desires, beliefs, sensations, thoughts, *etc*., and not a "neural network pulsing with electrochemical activity" (13).
2. One should trust that one's introspective capacities (always) deliver the truth.
3. Thus, one should believe that one finds things distinct from one's neural makeup.

Objection: None of our other senses grasp the world just as it is, and we have no reason for thinking the "sense of introspection" is any different (**15**).

The argument from irreducibility

1. If there are mental phenomena for which no purely physical explanation could be given, we ought to believe that the physical is not all there is.
2. There are mental phenomena for which there are no purely physical explanations.
3. Thus, we must suppose nonphysical explanations and properties.

In support of (2):

- Descartes: The ability to use language, and (mathematical) reasoning in particular, cannot be done by a purely physical thing.
- There is "something it is like," there are "sensory experiences," or *qualia*, *e.g.* seeing a color, smelling a rose, *etc.*
    - "A physicist or chemist might know everything about the molecular structure of the rose, and of the human brain…but that knowledge would not enable him to predict or anticipate the quality of these inexpressible experiences" (14).

Objection #1: We have calculators, which is physical, that engages in mathematical calculation. Further, we have computer *languages* (16).

Response #1 to qualia argument: Scientists are still working on how we can explain the intrinsic qualities of mental states solely by reference to the physical. But dualists have not shown that reducing quality to the physical is impossible; they have only said they do not yet see how it can be done.

Response #2: Suppose dualism is true. How does this help with explaining the intrinsic quality of a mental state?

- Without an explanation forthcoming, we have a puzzle that both dualists and materialists confront.

The argument from super-powers

1. If some people are telepathic, or telekinetic, or can see the future, then we must appeal to something nonphysical to explain them.
2. There are people with super-powers.
3. Therefore, we need something nonphysical to explain these nonphysical powers.

Objection #1: To suppose that (1) is true is to suppose that we cannot reduce the mental the physical, but we as yet have no reason for thinking we cannot.

Objection #2: There is just no evidence that verifies (2).

- It has never been performed and repeated in any experiment.

Arguments Against Dualism

The argument from simplicity

1. Simpler theories are, all other things being equal, better than complex theories.
2. Materialism is a simpler theory than dualism.
3. Materialism is, all other things being equal, a better theory than dualism (18).

The explanatory impotence of dualism

1. The neuroscientist can explain a great deal of behavior, the workings of the brain (neuron firings, chemical transmitters, brain damage, *etc*. (18-19).
2. The dualist can tell us nothing about this "mind stuff" (**18-19**).
3. If dualism has no explanatory power, and materialism has a tremendous amount of explanatory power, we ought to endorse materialism.
4. Thus, we ought to endorse materialism.

Response on behalf of the dualist: The neuroscientist cannot say anything about central capacities of the mind, however, like reason, emotion, and consciousness.

Reply: That's simply not true. There have been many scientific advances in understanding depression, anxiety, attention, sleep, and so on.

The argument from neural dependence

1. If thinking, reasoning, emotion, *etc*. really are performed by a special mental entity, and the body simply provides sensory information (looks like, smells like, *etc*.), then one would expect reason, emotion, and consciousness to be relatively invulnerable to direct control or pathology by manipulation or damage to the brain.
2. But we can manipulate the mind by manipulating the brain: alcohol, narcotics, senile degeneration of nerve tissue, emotion-controlling chemicals, anesthetics, caffeine, a sharp blow to the head, and more lead to changes in reason, emotion, and consciousness.
3. Thus, thinking, reasoning, and consciousness are not just something had or performed by a mental entity distinct from the physical entity that is the brain.

Note: This argument does not work against property dualists, since property dualists think brain activity is the "seat" of all mental activity.

The argument from evolutionary history

1. The origin of our species is explained by reference to evolution.
2. Evolution is the unfolding of a purely physical process.
3. If this is the correct account of our origins, then there seems neither need, nor room, to fit any nonphysical substances or properties into our theoretical account of ourselves.
4. Thus, the humans' current constitution is the result of a purely physical process; our constitutions are purely physical, though they are very complex.

PART II: Materialist (Physicalist) Theories of the Mind

Four Theories: Philosophical Behaviorism, Identity Theory, Functionalism, Eliminative Materialism

Philosophical Behaviorism

Basic position: There is no mind-body problem because claims about people's mental states are just claims about people's dispositions to behave in certain ways (23).

Observation: There are non-mental terms we understand behavioristically, *e.g.* 'soluble'.

- X is water soluble = if x were put in unsaturated water, x would dissolve.
    - There is no mention here of anything nonphysical, but only of that which is scientifically observable/verifiable.

Claim: We ought to treat mental state terms (belief, desire, hopes, thinks, feels, *etc.*) in the same way we treat terms like 'soluble'.

- Wants a Caribbean holiday = if asked whether that is what she wants, she would answer yes, and if given new holiday brochures for Jamaica and Japan, she would peruse the ones for Jamaica first, and if given a ticket on this Friday's flight to Jamaica, she would go…

Advantage of the position: It is obviously compatible (though does not necessitate) with a materialist conception of the mind (and world).

Objection #1: Its denial of the "inner" aspect of mental states.

- Pain is not just a disposition to action; it *feels* a certain way.

Objection #2a: The list of dispositions seems infinitely long, but a definition that is infinitely long is not well-defined.
Objectionn #2b: It seems the list of dispositions must include reference to mental states, but then we have not defined everything in terms of behavior.

- She will only answer 'yes' to wanting the holiday if she is not *secretive*, will look at a brochure only if she is not *bored*, and will get on the plain only if she does not *believe* it will be hijacked.

Identity Theory (or Reductive Materialism)

Basic position: Mental states are *identical to* brain states.

- Pain *just is* the firing of certain neurons in a brain, believing that philosophy of mind is difficult *just is* the firing of certain other neurons, *etc*.
- For every individual mental state, there is an individual brain state that is identical to it.
- There are many scientific discoveries that have shown us various phenomena are identical to other phenomena with which we are more familiar (**26**).

Reasons for endorsing Identity Theory:

1. Humans have physical origins, and so the behavior controlling mechanisms are (likely) physical as well.
2. Humans are the product of evolution, and evolutionary theory provides the best explanation for how humans came to have behavior-controlling capacities, specifically, the brain and a nervous system.
3. The argument from neural dependence.
4. Neuroscience has shown in the case of other animals how to predict their behavioral capacities and deficits by reference to their respective nervous systems.

Arguments Against Identity Theory

Objection #1: The argument from introspection.

Response: Our eyes distinguish red from blue, our hands hot from cold, *etc*., and these are really are eyes and hands distinguishing between wavelengths and kinetic energy, respectively. Introspection is a sense that works the same way: "It may discriminate efficiently between a great variety of neural states, without being able to reveal on its own the detailed nature of the states being discriminated" (29).

Objection #2

1. Mental states have semantic properties, that is, they have *meanings*, some of them (beliefs) can be *true or false*, some of them (beliefs and desires) can (logically) *conflict*.
2. Brain states do not have semantic properties; the firing of a certain neuron cannot be true or false, cannot (logically) conflict with other neurons firing, *etc*.
3. If two entities are identical, then they have the same properties (Leibniz's law).
4. But mental states have properties brain states do not.
5. Thus, mental states are not identical to brain states (30-1).

Response:

1. To have "propositional content" – to be the sort of thing that can be true or false, (logically) conflict with other things, have a meaning – is to stand in a certain position in a hugely complex system: a language.
2. We know that 'the apple is red' *means the same thing* as 'La pomme est rouge' (French) because both things stand in the same position though in different languages.
3. Thus, to mean a particular thing is not to have a particular sound, or spelling, or pattern of bumps (Braille), or anything like that.
4. Our words convey meanings, but there are a variety of ways meanings can be conveyed.
5. Perhaps brain states are one such way (31).

Objection #3:

1. A neuroscientist knows all about the physical facts of what happens when someone sees red, but has never seen red herself.
2. When she comes to see red herself, she comes to know what it is like to see red.
3. If she came to know something new, then she learned a nonphysical fact.
4. She came to know something new.
5. Thus, she learned a nonphysical fact.

Reply: What has happened when she came to have an experience of red is that she came to know about red in a new way, but she did not learn about a new *thing*.

- There are many different *types of knowledge*, but not necessarily equally many *different things known*.
- "The difference between a person who knows all about the visual cortex but has never enjoyed the sensation-of-red, and a person who knows no neuroscience but knows well the sensation-of-red, may reside not in *what* is respectively known by each…but rather in the different *type*, or *medium*, or *level* of representation each has of exactly the same thing: brain states.

Objection #4 (The Argument from Multiple Realizability) (36).

1. If an alien can feel pain but does not have a human brain, then pain cannot be identical to any human brain state.
2. There can be such an alien.
3. Therefore, pain [along with any other mental state] cannot be identical to any human brain state.

<u>Functionalism</u>

Basic position: A mental state is defined by its causal relations (what things it causes and what things cause it) to i) environmental effects on the body (*e.g.* input from the senses), ii) other types of mental states (*e.g.* beliefs, desires, hopes, fears, *etc*.), and iii) bodily behavior (*e.g.* moving one's arm, raising one's head, jumping, *etc*.).

- Pain *just is* a state caused by damage or trauma, causes distress, annoyance, thinking about stopping it, wincing, blanching, *etc*.
- This is not behaviorism because a mental state is defined not just by reference to causes on behavior, but also by reference to other mental states.
- If pain is just a functional state, then it can be realized in multiple systems; we can account for how aliens can have pain (while the identity theorist cannot).

Question: But how does functionalism account for qualia?

(Related) Objection #1: The inverted spectrum (38).

1. If we can behave identically (if we are functionally identical) but can have different experiences [there is "something it is like" for you to see a tomato, and it is unlike what it is like for me to see one; you have a sensation of redness, while I have a sensation of green] then mental states are not just a matter of their causal connections.
2. We can be functionally identical but have different experiences.
3. Therefore, a mental state cannot just be defined by its causal connections; there is also its "inner quality," or what its like to have that mental state.

In support of (2): The possibility of inverted spectrum (38).

Objection #2: The absent qualia problem

1. If we can have a complex functional system, with some things playing the role of pain or pleasure or seeing red, but there is nothing it is like to be that system, then functionalism is false.
2. We can have such a system.
3. Thus, functionalism is false.

In support of (2): zombies and China (39).

A (very rough) reply: "If the pitch of a sound can turn out to be the frequency of an oscillation in air pressure, there is no reason why the quale of a sensation cannot turn out to be, say, a spiking frequency in a certain neural pathway" (40).

- Consider here the identity theorist's response to the argument from introspection.

<u>Eliminative Materialism</u>

The identity fails because there are no one-to-one match ups between psychological states and brain states; there is the possibility of multiple realizability.

Eliminate Materialism: There is no match up "because our common-sense psychological framework is a false and radically misleading conception of the causes of human behavior and the nature of cognitive activity" (43).

- Folk psychology is a theory about the mind, and it's a bad theory.
- Advances in neuroscience reveal to us the ways in which folk psychology is misguided.

Historical examples of a theory being eliminated:

i) Heat was thought to be a fluid, a substance, called "caloric," but we have discovered that heat has to do with the motion of molecules, not the laws governing caloric. We "eliminated caloric from our ontology," which means we said there is no such thing as caloric (43-4).

ii) Burning and rusting was thought to be a matter of a thing called "phlogiston" leaving the object that was burning or rusting, but we discovered both are a matter of taking on oxygen. We eliminated phlogiston from our ontology.

iii) The turning spheres of the sky (**44**).

iv) People thought there were witches, when in fact there was just psychosis.

Claim: "The concepts of folk psychology – belief, desire, fear, sensation, pain, joy, and so on – await a similar fate (**44-5**).

Reasons for Thinking Common-Sense Psychology is Flawed

1. Widespread explanatory, predictive, and manipulative failure of folk psychology. For instance, "we do not know what *sleep* is, or why we have to have it…We do not understand how *learning* transforms each of us from a gaping infant to a cunning adult, or how differences in *intelligence* are grounded. We have not the slightest idea how *memory* works, or how we manage to retrieve relevant bits of information instantly from the awesome mass we have stored. We do not know what *mental illness* is, nor how to cure it. In sum, the most central things about us remain almost entirely mysterious from within folk psychology" (45-6).
2. All of our other folk theories (about motion, about space/the skies, the nature of fire, the nature of life) were wrong, and so it would be a miracle if our folk theory about our minds was accurate, and that we got it right the first time.

A reason for favoring eliminativism over identity theory and functionalism: the latter two require our folk psychological concepts to mirror certain brain states, but it's much more likely that there is no such mirroring.

Objection #1: The argument from introspection; we can look inside and see pains, beliefs, desires, fears, *etc*.

Reply: The person making that argument makes the same mistake as the person who thinks he sees spheres turning in the sky, or witches.

- "The fact is, all observation occurs within some system of concepts, and our observation judgments are only as good as the conceptual framework in which they are expressed. In all three cases –the starry sphere, witches, and the familiar mental states –precisely what is challenged is the integrity of the background conceptual frameworks in which the observation judgments are expressed (47-8).

Objection #2: Eliminativism in incoherent because it is the expression of a belief that there are no beliefs, and it requires knowledge of a language to explain itself.

Reply: Not only languages or mental states have meaning; brain states can have meanings. (See the response to the second objection to identity theory).

Objection #3: Eliminativism "exaggerates the defects in folk psychology, and underplays it real successes. Perhaps the arrival of a matured neuroscience will require the elimination of the occasional folk-psychological concept…and a minor adjustment in certain folk-psychological principles may have to be endured," but most of folk-psychology will stay as it is (48).

Reply: Perhaps this is right, perhaps it is not. For on the one extreme is complete reduction (as with the identity theory) and on the other extreme is complete elimination (as with eliminativism), but there might be mixed cases. Only empirical research (the advances of neuroscience) will tell us where things stand.