

3.0 Is mind a body process?

Four perplexing features of mind

- Subjectivity
- Intentionality
- Conscious experience
- Purposefulness

Some philosophical tools

- **Materialism (about the mind):** the view that the mind can fully be explained with a theory that refers solely to matter and to material events. Also now often called “**physicalism.**”
- **Dualism (about the mind):** the view that mind and body are different kinds of substances. This is usually taken to mean, you can have each without the other.
- **Leibniz’s Law:** two things are the same thing if they have all the same properties. (And: two kinds are the same kind if they have all the same relevant properties.) (Exception: we ignore properties concerning people’s knowledge. For example, suppose Tom has heard of Malcolm X and never heard of Malcolm Little. This property–being known to Tom–does not distinguish Malcolm X from Malcolm Little.)
- **Essence:** a necessary property of the thing (that is, the thing would be a different thing if it did not have that property). (In older philosophy, a non-essential property is called an “accident.”)
- **Intentionality:** the property of being “about” something else. Mental states are often intentional; they represent something outside the mind.

Some philosophical tools: three “is”s

- The “is” of predication.
- The “is” of identity.
- The “is” of existence.

We are most concerned about the “is” of identity. If someone claims “mind is a brain process” they are making a claim about identity.

3.1 Descartes's View

Descartes

- Born in France 1596, died in Sweden in 1650
- The *Meditations* were first published in 1641



Some of Descartes's Arguments

1. Body is divisible, but the mind is not divisible.
2. The mind is not immediately affected by the body [but the mind immediately affects the mind]
3. We can interrupt messages from the body to the mind [but we cannot interrupt messages from the mind to the mind]
4. The mind appears necessary for motion (instead of some localized control—say in your foot to move your foot, etc). This shows that the mind separate from the body is the best way to manage the body (else the body could manage motion from localized control).

Descartes also argues (earlier in *Meditation VI*) that he can see clearly and distinctly that he is not the same thing as his body, but is the same thing as his mind, revealing their essential nature is different.

Another argument for dualism from Ibn-Sina *aka* “Avicenna” (980-1037 AD)

From *On The Soul (Fi'-Nafs)*:

Let us suppose... that a person is created in an adult state, but in such a condition that he is born in a void where his body cannot touch anything and where he cannot perceive anything of the external world. Let us also suppose that he cannot see his own body and that the organs of his body are prevented from touching one another, so that he has no sense-perception whatsoever. Such a person will not affirm anything of the external world or even the existence of his own body but will, nevertheless, affirm the existence of his self as a purely spiritual entity. Now, that which is affirmed is certainly not the same as that which is not affirmed. The mind is, therefore, a substance independent of the body.

Descartes view:

Interactive Substance Dualism

- **INTERACTIVE:** mind and body interact. The body sends messages to the mind; the mind sends commands to the body.
- **SUBSTANCE:** the interacting things are substances. We know that they are independent if one substance can exist without the other.
- **DUALISM:** there are two relevant kinds of substances, mind and body.

Princess of Bohemia

- 1618-1680
- Born in Germany, raised in exile in Holland
- Wrote to Descartes and met him after reading the *Meditations*



The Princess's Worry

- How does mind, as a non-extended, non-physical thing, affect the body? How is it affected by the body?
- The princess depends on the idea that particles striking each other (what we now call “kinetic force”) is what explains motion.

Questions for Descartes

- Bohemia's question: how does this different, unextended, non-physical substance cause physical events to happen?
- Does interactive substance dualism make testable predictions?
- Does interactive substance dualism explain anything? That is, does it add anything to a materialist explanation?

3.2 A Materialist Argument

Principle Motives for materialism (also called “physicalism”) about mind

- **Parsimony:** materialism is a simpler theory than dualism. (This is sometimes called “Ockham’s Razor.”)
- **Productivity:** materialists have a research program; it is not at all clear how we are supposed to study the mind if we are dualists.
- **Predictive power:** many mental phenomena now have a materialist explanation (or partially materialist explanation).

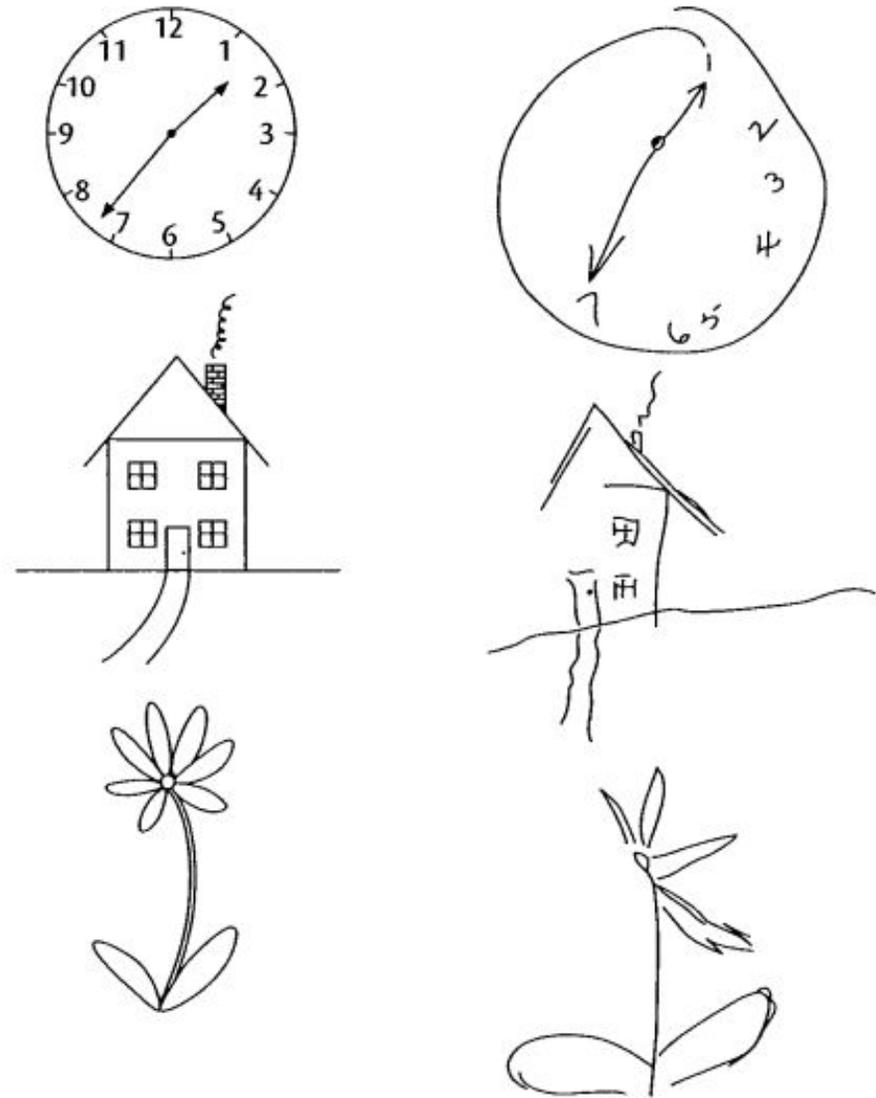
Hemispatial neglect: a divided mind?

<https://www.youtube.com/watch?v=d4FhZs-m7hA>

Hemispatial Neglect

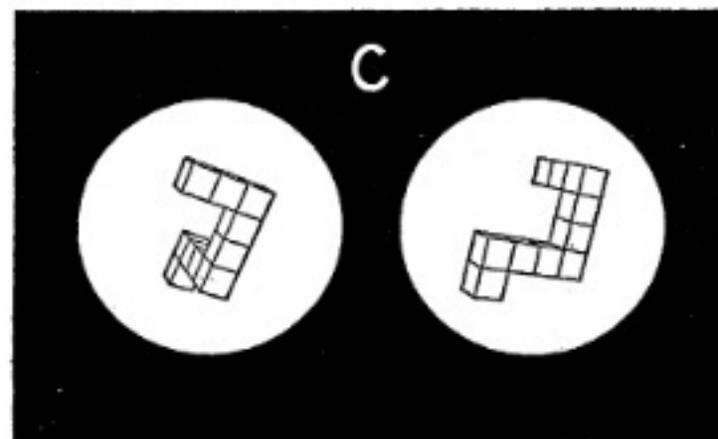
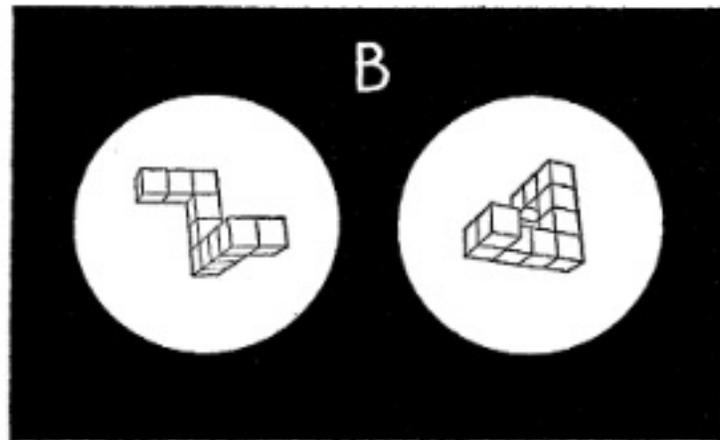
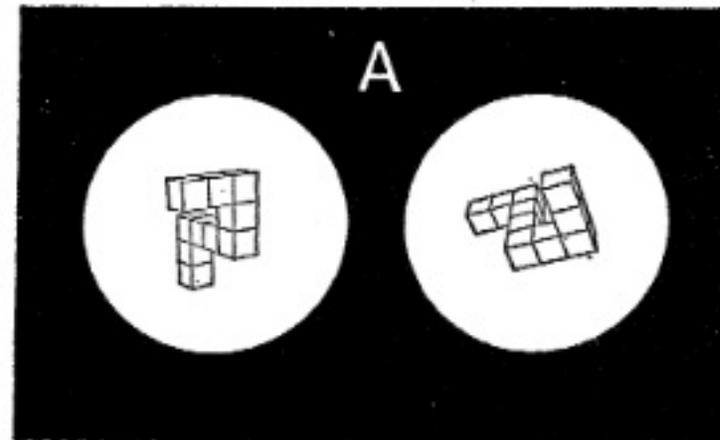
Can the mind be divided?

Source: Thompson, R. F.
(2000) *The Brain: A
Neuroscience Primer* (3rd
edn.).



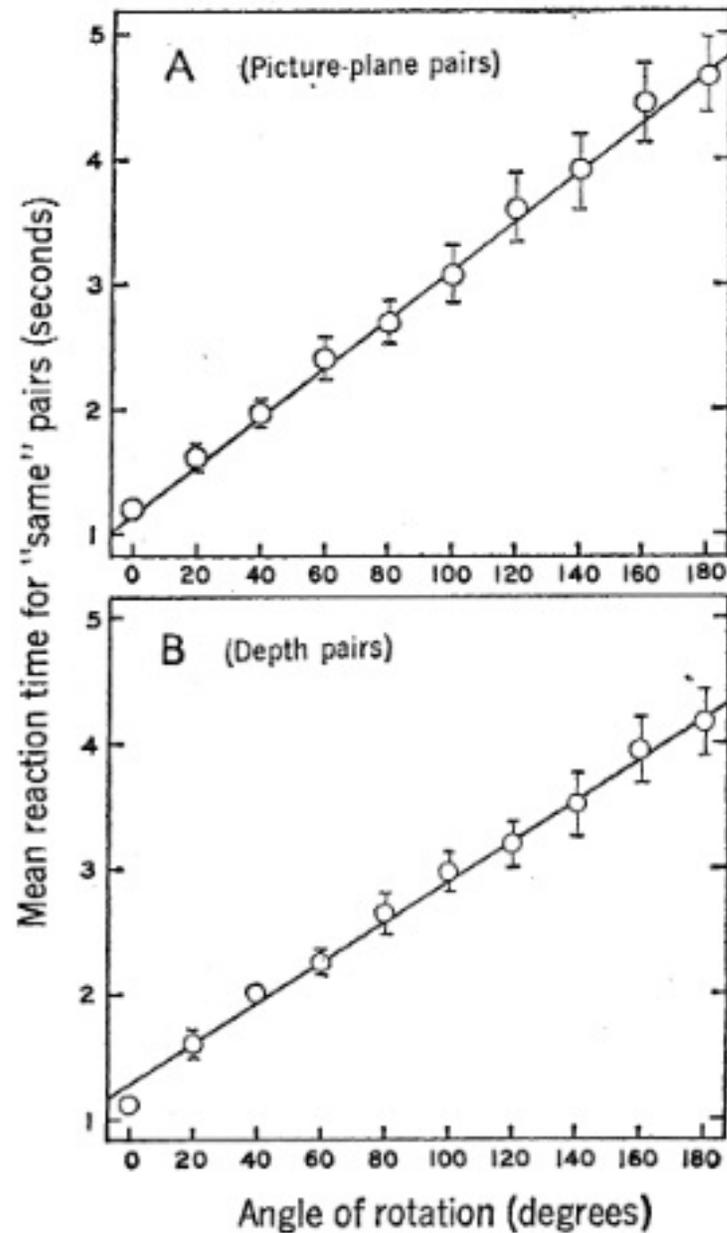
Travelling
Thoughts?

Shephard &
Metzler (1971)



Shephard & Metzler (1971)

Source: Shepard, R and Metzler. J. "Mental rotation of three dimensional objects." Science 1971. 171(972):701-3.

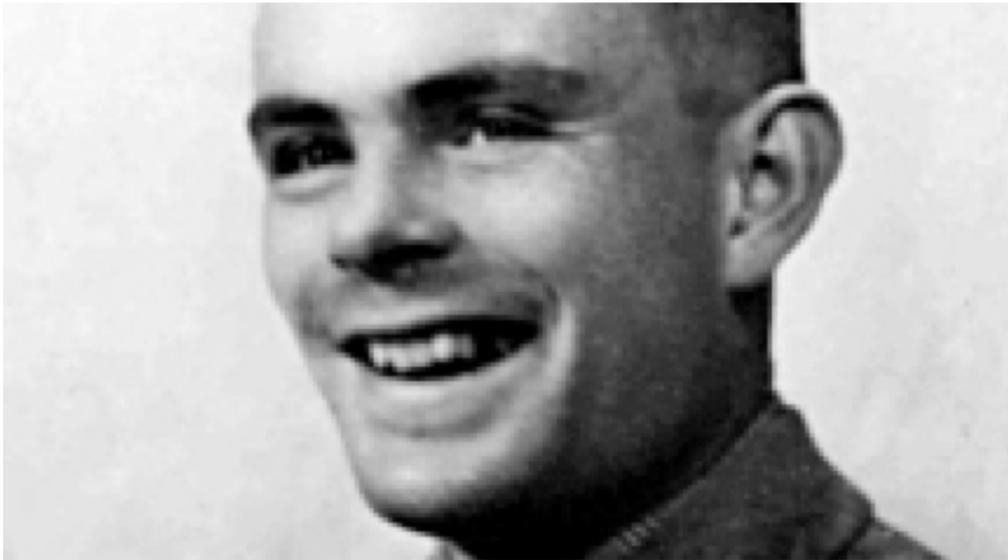


What might a materialist theory of mind look like?

The most popular or well-developed theories (which are still very primitive) is:

- Functionalism: the view that the mind is a collection of “functional” (that is, purposeful) abilities that are realized in the brain.
- Computational functionalism: a version of functionalism, that holds that the mind is like software running.

Alan Turing



- Lived 1912-1954
- “On Computable Numbers” (1936)
- “Computing Machinery and Intelligence” (1950)

The Turing Test

I propose to consider the question, "Can machines think?"

....

The new form of the problem can be described in terms of a game which we call the "imitation game." It is played with three people, a man (A), a woman (B), and an interrogator (C) who may be of either sex. The interrogator stays in a room apart from the other two. The object of the game for the interrogator is to determine which of the other two is the man and which is the woman. He knows them by labels X and Y, and at the end of the game he says either "X is A and Y is B" or "X is B and Y is A."

....

We now ask the question, "What will happen when a machine takes the part of A in this game?" Will the interrogator decide wrongly as often when the game is played like this as he does when the game is played between a man and a woman? These questions replace our original, "Can machines think?"

Some Turing Testable Program

- A classic is Eliza

<http://psych.fullerton.edu/mbirnbaum/psych101/Eliza.htm>

- Better? Jabberwacky:

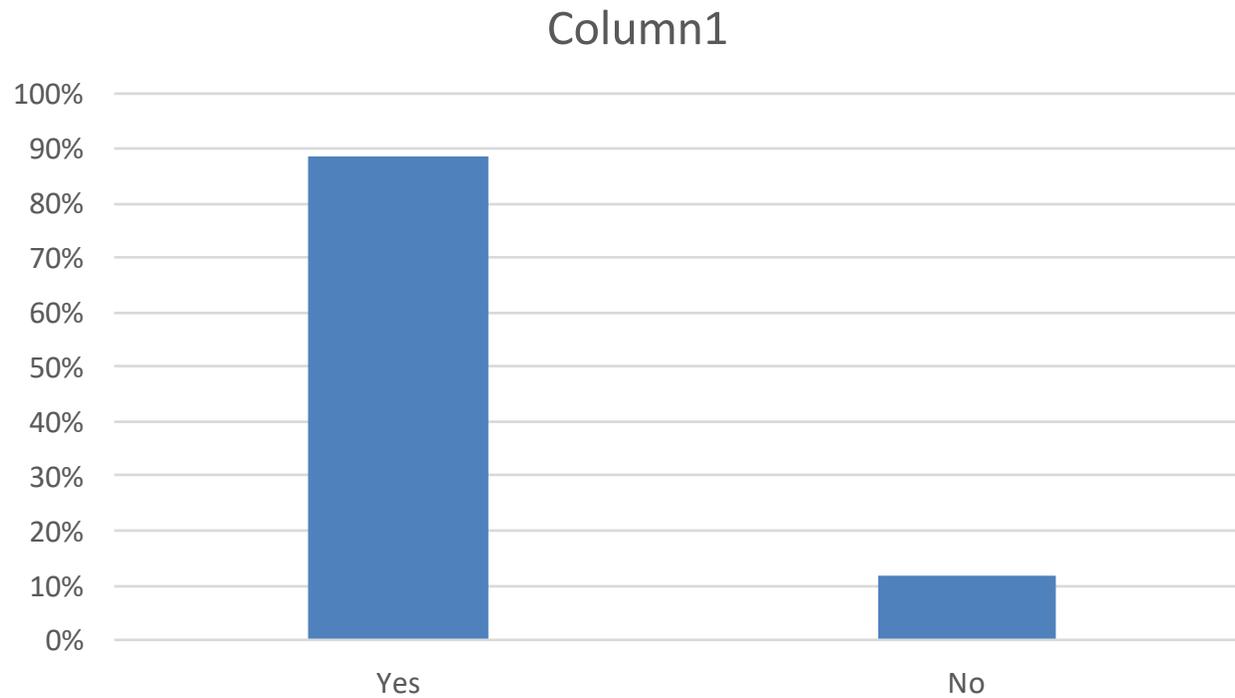
<http://www.jabberwacky.com/>

3.3 A Contemporary Dualist Argument

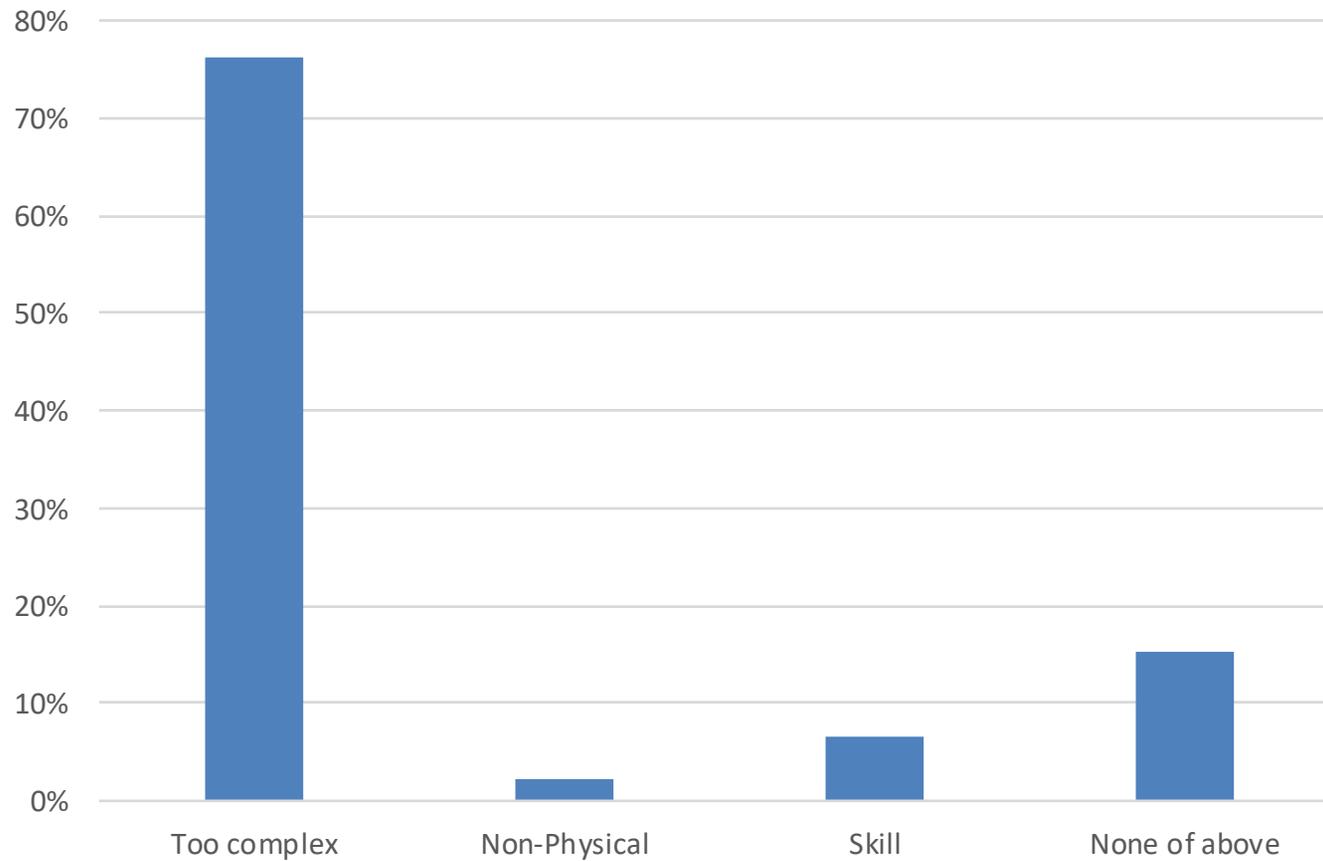
Jackson, “Epiphenomenal Qualia”

Mary is a brilliant scientist who is, for whatever reason, forced to investigate the world from a black and white room via a black and white television monitor. She specializes in the neurophysiology of vision and acquires, let us suppose, all the physical information there is to obtain about what goes on when we see ripe tomatoes, or the sky, and use terms like ‘red’, ‘blue’, and so on. She discovers, for example, just which wavelength combinations from the sky stimulate the retina, and exactly how this produces *via* the central nervous system the contraction of the vocal chords and expulsion of air from the lungs that results in the uttering of the sentence ‘The sky is blue’.... What will happen when Mary is released from her black and white room or is given a color television monitor? Will she *learn* anything or not? It seems just obvious that she will learn something about the world and our visual experience of it. But then is it inescapable that her previous knowledge was incomplete. But she had *all* the physical information. *Ergo* there is more to have than that, and Physicalism is false.

Your opinion: would Mary learn something new?



Your opinion: why was the experience new?



Let's review!

- Valid argument
- Sound argument
- Direct proof
- Reductio ad absurdum

Let's review!

Most often in philosophy, we are looking for the argument, so that we can evaluate it. That means:

1. Identify the conclusion
2. Identify the premises
3. Determine whether the argument is a direct argument or a reductio ad absurdum
4. Evaluate whether the argument is valid
5. Evaluate whether the argument is sound

Why do that?

We have ways of identifying if an argument is valid. For example, we know that the following two ways of reasoning ensure that any instance of these steps in an argument preserve validity.

Modus ponens

(If ϕ then Ψ)

ϕ

Therefore Ψ

Modus tollens

(If ϕ then Ψ)

Ψ is false

Therefore ϕ is false

Where ϕ and Ψ are any two sentences.

The Knowledge Argument, reconstructed and using only modus ponens and modus tollens

1. Mary knows all relevant physical facts about color experience before time t . (Premise of the thought experiment.)
2. If Mary knows all relevant physical facts about color experience before time t **then:** if color experience is a physical event, Mary knows color experience before time t . (Implicit premise)
3. If color experience is a physical event, Mary knows color experience before time t . (from 1 and 2 by Modus Ponens)
4. When Mary first sees color at time t , she learns something new. (Premise.)
5. If when Mary first sees color at time t she learns something new, then it is not the case that Mary knows the experience of color before time t . (Implicit premise)
6. It is not the case that Mary knows the experience of color before time t . (By 4 and 5 and modus ponens)
7. The color experience is not a physical event. (By 3 and 6 and modus tollens)

Suppose P, Q, R, S are sentences

P: Mary knows all relevant physical facts about color experience before time t .

Q: Color experience is a physical event

R: Mary knows color experience before time t .

S: When Mary first sees color at time t , she learns something new.

Then, the argument has this shape:

1. P *Premise*
2. (If P then (if Q then R)) *Premise*
3. (If Q then R) *Modus ponens 1,2*
4. S *Premise*
5. (If S then it is not the case that R) *Premise*
6. It is not the case that R *Modus ponens 4, 5*
7. It is not the case that Q *Modus tollens 6, 3*